

ENVIRONMENTAL EDUCATION 2.0: TOWARD A THEORY OF ECOLOGICALLY MINDED
TEACHING

Scott A. Morrison

A dissertation submitted to the faculty of the University of North Carolina at Chapel Hill
in partial fulfillment of the requirements for the degree of Doctor of Philosophy in
Culture, Curriculum, and Change in the School of Education.

Chapel Hill
2013

Approved by:

Jocelyn Glazier

Madeleine Grumet

Suzanne Gullede

Rebecca Martusewicz

George Noblit

© 2013
Scott A. Morrison
ALL RIGHTS RESERVED

ABSTRACT

SCOTT MORRISON: Environmental Education 2.0: Toward a Theory of Ecologically
Minded Teaching
(Under the direction of Jocelyn Glazier)

Since the 1970s, the environmental education movement has been positioned as one of the primary means to cultivate the knowledge, values, dispositions, and behavior needed to preserve and protect the planet. Ample research suggests, however, that environmental education has failed to meet its goals, and that the state of the environment is worsening. There are organizations and frameworks that recognize the limits of traditional environmental education and that are pushing school reform broadly, and environmental education in particular, in new directions—what I call the Environmental Education 2.0 movement. In this study, I focus on one framework in particular, EcoJustice education. EcoJustice theorists posit that the ecological crises we face are rooted in culture and, more specifically, that Westernized culture has produced ecological crises through the pervasive homogenization, monetization, and privatization of existence. The result is alienation of community, the loss of forms of intergenerational wisdom that sustain healthy communities, and the erasure of cultural diversity into a global monoculture. The premise of Ecojustice education is that teachers and students need to understand these realities and then work to challenge them. Seven educators and I, all committed to preserving and protecting the environment, met regularly over the course of five months in a Critical Friends Group to

learn together about Ecojustice and consider its implications for teaching. Analysis of these meeting transcripts and interviews with participants revealed the ways our Critical Friends Group served as a space—a commons—for reflection and reframing. So, too, was it a space in which an understanding of ecologically minded teaching emerged.

For my children:

Julian

Madelyn

Kalen

Brayden

ACKNOWLEDGMENTS

First and foremost, I am very thankful for the guidance, support, encouragement, and advice provided by my dissertation committee members. They have all shaped this dissertation in different ways and, more importantly, modeled for me what it means to be a teacher-scholar. Special thanks to my advisor, Jocelyn Glazier, for the countless hours she spent reading drafts, listening to my ideas and frustrations, and pushing me to dig deeper.

I am also very thankful for the camaraderie of colleagues that accompanied me along the way. Because of them, graduate school was all the more fun and worthwhile. I am particularly grateful for the friendship of Brandon Sams. We struggled and thrived together through coursework, comprehensive exams, proposals, and dissertations. It was a pleasure to complain, brainstorm, and celebrate with him through it all.

There are two friends that deserve more thanks than I can put in to words. Brantley Gasaway could not be a better mentor and ally. He encouraged and advised me every step of the way, from editing my writing to prepping me for job interviews. His guidance was a godsend. Daniel Kruidenier also provided incredible companionship and inspiration, both in graduate school and in life. He made me think more deeply about my work and continues to sharpen me. I am a better scholar and person because of him.

Finally, I am eternally grateful for the love and support of my family. Without the backing of my parents my dreams of graduate school would have fizzled. They sustained me in innumerable ways, as they always have. My best friend and wife, Anna, celebrated with me on my best days and tolerated me on my worst. I could not imagine a better partner. She defines beauty. Together we are privileged to raise four wonderful children, to whom I have dedicated this dissertation. The focus of my work is to make the world a better place. My hope is that Julian, Madelyn, Kalen, and Brayden will take seriously the call to love their neighbors—both human and more-than-human.

PREFACE

What follows is my attempt to convey what I have learned over the course of several years, and more specifically what I gleaned from seven educators during the five months we spent reading about and discussing EcoJustice education. The first two chapters of this dissertation review the relevant literature to the study. In the first chapter I address the relationship between economic growth and environmental destruction, the research on environmental education, and the basics of the study. In the second chapter I turn to the larger context of globalization and neoliberalism as well as some of the eco-feminist critiques of Western culture. The third chapter explains the research methods. Both the fourth and fifth chapters report findings from the research study. I conclude with the sixth chapter. Though the dissertation ended, I still have so much more to learn.

TABLE OF CONTENTS

List of Tables.....	xii
Chapter 1: Soil.....	1
Fixated on Growth.....	1
Ecological Overshoot.....	4
Our Greatest Challenge.....	8
The Limits of Environmental Education.....	12
Environmental Education 2.0.....	17
The Study.....	22
Chapter 2: Theoretical and Historical Context.....	28
Globalization and Neoliberalism.....	28
Historical Roots.....	35
Resistance.....	41
Chapter 3: Research Methods.....	44
Ecological and Postcritical Research.....	44
Recruitment.....	46
Data Collection.....	47
Participants.....	50
Jane.....	50
Madge.....	51

Brent.....	52
Eric.....	54
Clint.....	55
Abby.....	56
Justin.....	56
Context.....	58
Data Analysis.....	59
Positionality.....	60
Limitations.....	62
Chapter 4: Ecologically Minded Teaching.....	65
Prelude.....	65
Five Practices.....	68
Externalities.....	71
Engaging Experiences.....	73
Multiple Perspectives.....	77
Critical Questions.....	80
Partnerships.....	84
Challenges.....	87
Resistance.....	88
The Dominance of the Banking Model.....	89
Student Hardships.....	90
Tension.....	91

The First Year.....	92
Personal Cost.....	93
Flashback.....	94
Reflection.....	96
Chapter 5: EcoJustice Education.....	100
The Commons.....	104
Defining Moments.....	115
Unsettling Identity.....	120
Transformative Learning.....	127
Community and Collaboration.....	129
Reflection.....	132
Chapter 6: Seeds.....	136
Wide Awake.....	136
Review.....	137
So What.....	143
Limitations.....	146
Going Forward.....	148
Appendix A.....	154
Appendix B.....	155
Appendix C.....	156
References.....	157

List of Tables

Table

1. Book chapters read for each meeting.....	49
2. Participant information.....	58

CHAPTER 1

Soil

We are destroying our country—I mean our country itself, our land. This is a terrible thing to know, but it is not a reason for despair unless we continue the destruction. If we decide to continue the destruction, that will not be because we have no other choice. This destruction is not necessary. It is not inevitable, except that by our submissiveness we make it so.

—Wendell Berry (2005, p. 21)

Fixated on Growth

Not long ago, as my family and I drove home from a morning out, my wife said, “Look, kids,” and pointed out the driver’s side window. We all turned to see an array of bulldozers and dump trucks pushing, hauling, and organizing mounds of soil. Five acres of lush green trees, for me a pleasant buffer between gas stations and grocery stores, had been transformed into reddish brown flatland. Roots protruded from the ground as if raising their arms in surrender. “Wow,” I heard one of my kids whisper, not sure if awe or sadness inspired the utterance.

I think about that moment frequently, an example of how millions of kids in the United States and other Westernized¹ cultures are exposed, most often uncritically, to

¹ Following Hall (1996), I use the term *Westernized* as a historical rather than a geographical construct. Westernized cultures have adopted or been influenced by the cultural, economic, or political systems of Europe and North America and are considered

the might of modern industrialism, to the power humans exert over nature. I think about how we communicate our faith in machines, technology, and science, the enculturation process that teaches children—in both subtle and obvious ways—to associate automobiles and shopping malls and skyscrapers with goodness and progress. In Westernized cultures, altering the environment is typically referred to as “development”² and justified along economic lines: cutting down trees, leveling land, and constructing buildings provides jobs, creates new markets, and boosts the economy. The entire phenomenon is framed as a necessary net positive, in which what is gained, economically and materialistically speaking, overshadows any biological or cultural loss.

In his essay, “The Tyranny of Entitlement,” Derrick Jensen (2011) wrote that he is stunned that so many otherwise sane people believe infinite economic growth is possible on a planet with biophysical limits. “Perpetual economic growth and its cousin, limitless technological expansion,” he penned, “are beliefs so deeply held by so many in this culture that they often go entirely unquestioned” (p. 5). Indeed, the primacy of “the economy” and “economic growth” is fairly standard in the U.S. To cite one recent example, in the 2012 presidential debates, the topic of climate change made a single,

industrialized, developed, urbanized, capitalist, and modern. Mehmet (1995) described Westernization as “reconstructing or shaping the rest of the world on western norms and institutions” (p. 2). In the past two centuries colonization and globalization have led to the Westernization of cultures around the world. For examples of Westernization see Norberg-Hodge (1991) and Thong (2012).

² Esteva (1992) credited President Truman with launching “the age of development,” a period that covers that last half century. Sachs (1992) considered development as a particular cast of mind: “For development is much more than just a socio-economic endeavor; it is a perception which molds reality, a myth which comforts societies, and a fantasy which unleashes passions” (p. 1). For Sachs the hidden agenda of development is the Westernization of the world.

brief appearance. The moderator of the second debate, Cindy Crowley, chose not to call on the audience member with a question about global warming. “I had that question, all you climate change people,” she said. “We just, you know, we knew that the economy was still the main thing” (Bauerlein & Jeffery, 2012, p. 5).

The economy being “the main thing” is certainly not new, but the focus has intensified since the end of World War II (Collins, 2000) and is now the “organizing ideology for corporations and individuals, for American capitalists and Chinese communists, for Democrats and Republicans. For everyone” (McKibben, 2007, p. 10). This fixation, however, is proving problematic, as it produces more inequality and insecurity than prosperity and progress, requires high levels of energy, generates loads of pollution and waste, and, perhaps most ironically, bears little correlation to human happiness (Begley, 2004; McKibben, 2007). “A single-minded focus on increasing wealth has driven the planet’s ecological system to the brink of failure,” McKibben (2007) wrote, “without making us happier” (p. 42). Dietz and O’Neill (2013) called the pursuit of never-ending economic growth dysfunctional: “An economy that chases perpetually increasing production and consumption, always in search of *more*, stands no chance of achieving a lasting prosperity” (p. ix).³

For decades the alarm has been sounded that perpetual growth—of economies, of scale—is unsustainable (Berry, 1977; Carson, 1962; Gore, 1992; McKibben, 1989; McKibben, 2007; Meadows, Randers, Meadows, & Behrens, 1974; Polanyi, 1944; The Ecologist, 1972; Sale, 1980; Schumacher, 1973). But the reform efforts that have

³ For alternatives to perpetual-growth economics, see Berry (2010), Eisler (2008), Korten (2010), and Schor (2010).

accompanied the warnings, especially the environmental movement broadly speaking, have proven no match for the magnitude and power of economic growth. According to Speth (Goodell, 2008):

[O]ur efforts to clean up the environment are being overwhelmed by the sheer increase in the size of the economy... Capitalism is a growth machine. What it really cares about is earning a profit and reinvesting a large share of that and growing continually. Profits can be enhanced if the companies are not paying for the cost of their environmental destruction—so they fight [paying it] tooth and nail. The companies themselves are now quite huge, quite powerful, quite global, and no longer just the main economic actors in our society. They are the main political actors also. And so all of these things combine to produce a type of capitalism that really doesn't care about the environment, and doesn't really care about people much either. What it really cares about is profits and growth, and the rest is more or less incidental. (para. 7-9)

Without altering an economic system that has become the dominant mode of organizing human life and that depends on perpetual growth and profits, there is little hope for the future (Jensen, 2006). Changes undoubtedly have to occur, as the planet is simply not able to accommodate continued stress.

Ecological Overshoot

Almost two decades ago, Wackernagel and Rees (1996) developed the Ecological Footprint in order to measure the demand humans place on nature (how much nature we have, how much we use, and who uses what). Using this accounting tool, the Global

Footprint Network determined that humans have been in ecological overshoot since the 1970s with annual demand on resources exceeding what the planet can regenerate each year (Ewing, Moore, Goldfinger, Oursler, Reed, & Wackernagel, 2010).⁴ Between 2001 and 2005, The Millennium Ecosystem Assessment (2005) calculated the consequences of ecosystem change for human well-being and reported the following:

Over the past 50 years, humans have changed ecosystems more rapidly and extensively than in any comparable period of time in human history, largely to meet rapidly growing demands for food, fresh water, timber, fiber, and fuel. This has resulted in a substantial and largely irreversible loss in the diversity of life on Earth. (p. 1)

The report acknowledged that human alteration of ecosystems has contributed to gains in “human well-being and economic development” but that “these gains have been achieved at growing costs in the form of the degradation of many ecosystem services, increased risks of nonlinear changes, and the exacerbation of poverty for some groups of people” (p. 1).

Perhaps most famously, the Intergovernmental Panel on Climate Change (IPCC) released a report in 2007 that stated that the warming of the climate system is unequivocal based on observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level. As a result,

[t]he resilience of many ecosystems is *likely* to be exceeded this century by an

⁴ It now takes the Earth one year and six months to regenerate what we use in a year.

unprecedented combination of climate change, associated disturbances (e.g. flooding, drought, wildfire, insects, ocean acidification) and other global change drivers (e.g. land-use change, pollution, fragmentation of natural systems, over-exploitation of resources).

Two years after the IPCC report, Rockstrom et al. (2009) developed a framework for understanding human effects on the environment based on planetary boundaries. The boundaries “define the safe operating space for humanity with respect to the Earth system and are associated with the planet’s biophysical subsystems or processes” (p. 472). The authors pinpointed “the Earth-system processes and associated thresholds which, if crossed, could generate unacceptable environmental change” (p. 472). The nine boundaries include climate change, rate of biodiversity loss (terrestrial and marine), interference with the nitrogen and phosphorus cycles, stratospheric ozone depletion, ocean acidification, global fresh water use, change in land use, chemical pollution, and atmospheric aerosol loading. The authors concluded that for three of the planetary processes (climate change, biodiversity loss, and the nitrogen cycle), humanity is now exceeding the planet’s safe operating boundary, and by a large margin in some cases.

The National Climate Assessment and Development Advisory Committee (2013) just recently released a climate assessment report with contributions from over 240 authors.⁵ According to the executive summary, there is abundant evidence of climate change, from the top of the atmosphere to the bottom of the ocean. The changes in climate will produce “a variety of stresses on society, affecting human health, natural

⁵ As of this writing, a draft is being reviewed by the National Academies of Sciences and by the public.

ecosystems, built environments, and existing social, institutional, and legal agreements. These stresses interact with each other and with other non-climate stresses, such as habitat fragmentation, pollution, increased consumption patterns, and biodiversity loss” (National Climate Assessment, 2013, p. 5). Other consequences could include “reduced water supply and quality, the loss of iconic species and landscapes, distorted rhythms of nature, and the potential for extreme events to eliminate the capacity of ecosystems to provide benefits” (p. 5).

In sum, evidence of anthropogenic climate change is accumulating. Last year was the hottest year on record in the U.S. (Gillis, 2013), and extreme weather events around the world are increasing in intensity as well as frequency (Miller, 2012). Many assume climate change only means rising temperatures, but effects include intense, unpleasant, anomalous weather of all kinds (Lyall, 2013). And as weather patterns change, there are social and economic consequences. Farmers in North Dakota, for example, are struggling to adapt to warmer and wetter growing conditions (Hertsgaard, 2012). When wheat, rice, corn, and soybean crops suffer, food security worldwide is threatened.

Public opinion, however, is divided over the validity and pertinence of climate science. According to a 2012 Gallup poll, only 52% of Americans said that the effects of climate change have already begun to happen, and 42% said that the media exaggerate the seriousness of the issue. When asked about the rise in temperature over the past century, 41% percent said it stems from natural changes in the environment rather than

the effects of pollution from human activities.⁶ Such results should not be surprising, however. For one, in a culture that celebrates material accumulation and is dependent upon economic growth, environmental concerns are often neglected or minimized.⁷

Our Greatest Challenge

In early 2012, *New York Times* columnist Tom Friedman argued that the crop of Republican presidential candidates was out of touch with the three greatest challenges facing the U.S. today. The first challenge was “responding to the challenges and opportunities of an era in which globalization and the information technology revolution have dramatically intensified, creating a hyperconnected world” (para. 7), and the second was “our huge debt and entitlement obligations” (para. 9). The third challenge was

how we power our future — without dangerously polluting and warming the earth — as the global population grows from 7 billion to 9 billion people by 2050, and more and more of them want to drive, eat and live like Americans. Two billion more people who want to live like us? We can’t drill our way out of that challenge. (para. 11)

Friedman’s third point is undeniable. When population and consumption rates are expected to explode—and by association rates of extraction, production, and disposal as

⁶ For comparison, a 2012 Pew Research Center poll reported that 67% said there is solid evidence that the earth’s average temperature has been getting warmer over the past few decades. In addition, 42% said the warming is mostly caused by human activity, such as burning fossil fuels, and 19% said it is mostly caused by natural patterns in the environment.

⁷ For other explanations, see Hamilton (2010) and McCright & Dunlap (2012).

well—and when evidence suggests humans are overshooting the planet’s carrying capacity and degrading ecosystems beyond their ability to repair themselves (Archer & Rahmstorf, 2010; Hansen, 2009; Hossay, 2006; Jensen & Draffen, 2003; McKibben, 2011; Meadows, Meadows, & Randers, 1992; Speth, 2004), there are inevitable and ominous consequences. If we are to avoid future catastrophes beyond those that exist already, then we need to be working toward solutions as quickly and as intelligently as possible. This is a great challenge indeed.

While Friedman’s worry is fixed somewhat narrowly on “powering” the future without polluting and warming the earth, education scholars have expressed broader but similar concerns. Capra (1999), in his Liverpool Schumacher Lectures, wrote that, “our greatest challenge to is to build and nurture sustainable communities—social, cultural, and physical environments in which we can satisfy our needs and aspirations without diminishing the chances of future generations” (p. 1). Reynolds, Brondizio, Robinson, Karpa, and Gross (2010) declared, “A central challenge of twenty-first-century society is thus to bring the nature and scope of the human endeavor into a sustainable relationship with the biosphere” (p. xiv). And Bowers (2011), encompassing more than just preserving and restoring the environment, made this assertion:

The dominant challenge of the 21st century is to conserve what remains of the diversity of the world’s cultural languages, cultural and environmental commons, and the wisdom of how to live morally coherent lives that do not further degrade the natural systems, and do not perpetuate the social injustices that are still part of the crisis of our times. (p. 15)

This awareness that educational goals need to be focused on fostering ecologically healthy ways of thinking and living is not necessarily new, but the attention has gained momentum and will most likely continue to increase. The ability to adapt to ecological circumstances, to “apply what we learn about how human activity impinges on ecosystems so as to do less harm and once again live sustainably” (Goleman, 2009, p. 43), is more important than ever.

Last year the editors of *Rethinking Schools* (Editors, 2011) wrote that the climate crisis is an education crisis. They argued that schools, specifically in the U.S., have failed to teach students about ecology in both environmental and socio-political senses, about life-giving and life-sustaining interrelationships that must be honored and nurtured for the survival of all living beings, about the larger ecosystems humans are embedded in and how particular cultural habits and ways of thinking undermine, neglect, and destroy those systems. In the same issue, teacher, activist, and writer Bill Bigelow (2011) shared his experience teaching high school students about coal, about the ways coal “powers” the lives of so many, but also about the “dirty” side of coal: mountain top removal and strip mining, air and water pollution, corporate malfeasance, and the exploitation of workers and communities. I agree with Bigelow and the editors of *Rethinking Schools*: teachers should not merely prepare their students to participate in a global economy that harms both people and the planet. Instead, they must take up the commitment—the ethical obligation—to teach about the drawbacks of globalization and Westernized culture, about thinking and living more sustainably, about the cultural roots of environmental and social crises, about ecological justice.

Orr (2004), however, argued that our current form of education is not capable of preventing ecological catastrophe. When we address the natural world in schools, we tend to emphasize theories and not values, abstraction rather than consciousness, neat answers instead of questions, and technical efficiency over conscience. Because “all education is environmental education” (p. 12), students are constantly taught that they are not a part of the natural world when curricular and pedagogical choices do not make that embedded-ness clear. As a partial remedy, Orr recommended that students be required to show mastery of topics like environmental ethics, the basics of the principles of ecology, carrying capacity⁸, the limits of technology, and sustainable agriculture before graduating. This would, theoretically, shift the focus of education from a means to “get ahead” and gain access to certain kinds of employment to a means to alter the cultural patterns that lead to the destruction of the environment.

In North Carolina, the state where I live and work, effort has been made to adhere to the advice offered by Orr. In the fall of 2008, the North Carolina Department of Public Instruction (NCDPI) and Department of Environment and Natural Resources (DENR) partnered to develop the North Carolina Environmental Literacy Plan (NCELP; n.d.).⁹ The team of writers acknowledged in the introduction that there is a need for “environmentally literate citizenry who make informed decisions about complex environmental issues affecting the economy, public health and shared resources,” that

⁸ Carrying capacity refers to the number of people, other living organisms, or crops that a region can support without environmental degradation (Rees, 1992).

⁹ As of this writing, a draft of the plan is available but a final version has not been approved.

environmental literacy “gives individuals the tools to be good stewards of the environment,” and that environmental literacy is “an essential part of a well-rounded education” (NCELP, n.d., p. 1). Moreover, they recognized that because “[t]he health of the environment is inseparable from humans’ well-being,” it is important for “children and adults to know how ecological systems work, the benefits of these systems to humans and to the planet, and how human actions both positively and negatively impact these systems” (p. 2). The authors defined environmental literacy as “the ability to make informed decisions about issues affecting shared natural resources while balancing cultural perspectives, the economy, public health, and the environment” (p. 3-4), and offered four characteristics of an environmentally literate citizen—from understanding how natural and human social systems are interconnected to fostering the attitudes and skills needed for ecologically responsible decision making.

The development of the NCELP reflects a notable shift in emphasis on the current purpose of schooling—from preparing students to participate and succeed in the global economy to preparing students to care for the planet. And there are other, similar top-down initiatives in other U.S. states, including Maryland, Connecticut, and Nevada. This trend is certainly worth applauding, but research suggests that the effects of this sort of environmental education, as historically construed and practiced, are quite limited.

The Limits of Environmental Education

Environmental education has, by and large, been solely responsible for teaching students about the consequences of human exploitation of nature and that ecological

principles are inseparable from social realities (Palmer, 1998). The movement began in the United States in the late 1960s, marked by the publication of the first issue of *The Journal of Environmental Education*, which included the first definition of environmental education: “Environmental education is aimed at producing a citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve these problems, and motivated to work toward their solution” (Stapp, 1969, p. 30). Sauve (2005) identified fifteen different “streams” of environmental education that have contributed, over the past 30 years, to the richness and complexity of the field—from conservationist to holistic to feminist. Internationally, *The Belgrade Charter* (UNESCO-UNEP, 1976), *The Tbilisi Declaration* (UNESCO-UNEP, 1978), *Agenda 21* (UNCED, 1992), and most recently, the *UN Decade of Education for Sustainable Development (2005-2014)* (UNESCO, 2003) have articulated widespread concern for the health of humans and the planet because of the destructive effects of Westernized culture, and each one calls for remedies grounded in environmental education.¹⁰

And yet, so far, the promise of environmental education, just like the environmental movement writ large, has not achieved its goals. “Regardless of what we as educators would like to think,” wrote Hungerford and Volk (1990), “we can point to relatively few successes that offset the severity of environmental degradation” (p. 15). In 1992, Sterling used the word “disappointing” to describe the limited progress made by environmental education during the previous 20 years (cited in Huckle, 1993). Coyle

¹⁰ For a history of the environmental education movement, see Gough (1997) or J. Palmer (1998).

(2005) summarized almost a decade of research and concluded that most U.S. citizens are both uninformed and misinformed about the complexities of ecology. Most recently, Saylan and Blumstein (2011) argued that environmental education “has failed to bring about the changes in attitude and behavior necessary to stave off the detrimental effects” of biodiversity loss and degradation the planet is currently experiencing, and added that educational institutions “do not provide the tools necessary for critical thinking and for understanding the modern world” (p. 1).

Over twenty years ago, van Matre (1990) attributed the failure of environmental education to “shallow” environmental thinking, broad and thus vague objectives, a supplemental approach to educational programs, emphasis on short-term projects rather than long-term lifestyle decisions, and a willingness to accept funds and sponsorships from the corporations responsible for creating the problems in the first place. A few years later, Fein (1995) critiqued the “technocratic approach” of environmental education that “initiat[es] young people into the concepts and skills needed for finding scientific and technological solutions to environmental problems without addressing their root social, political, and economic causes” (p. 10). According to Martusewicz et al. (2011), environmental education “only touches the surface of the problems we face because it does not examine the ways our cultural behaviors and beliefs structure our taken-for-granted assumptions about our place in the world” (p. 10). From this perspective, what is missing from typical environmental education topics of study—rainforest destruction and habitat loss, for example—is critical examination of the cultural assumptions and practices that foster such destruction and loss in the first

place.

Gruenewald (2004) suggested that the potential transformative power of environmental education is undermined by its institutionalization. Because it operates within the anthropocentric and Westernized norms of general education, mainstream environmental education practices perpetuate the problematic assumptions of Westernized culture that are at the root of the crisis. Similarly, Blenkinsop and Egan (2009) argued that the problem with environmental education is that it lacks an adequate theoretical foundation. They asserted that environmental education theory draws uncritically from general education theory, which is grounded in Westernized cultural assumptions that separate humans from the natural world. In other words, an environmental education theory that does not operate within an eco-centric or holistic education theory—as opposed to the current anthropocentric and Westernized one—finds itself in conflict with its own goals.

In a recent essay, Orr (2012) lamented that children are no longer encountering the natural world on their own terms as an integral part of growing up, and that much of environmental education has lost its magic: “Instead, it’s become didactic and staid, restrictive and rule bound. A creeping focus on cognition has replaced the goal of exhilaration that once motivated educators to take children outside” (para. 15). He described environmental education as having a “museum mentality” where students are told to look but not touch, which cuts kids off from nature and teaches them that nature is boring or dangerous. Orr described the early roots of environmental education in summer camps and Boy and Girl Scout movements and their emphasis on embracing

the outdoors and primitive living skills. But in the early 1970s, environmental education morphed from nature study and immersion into a means to recruit children to solve problems like rainforest destruction and ozone depletion. In addition, Orr claimed that environmental education, in an effort to be validated in formal education like reading and math, “got reduced to a set of facts to be mastered, content to be internalized and regurgitated. In the effort to gain legitimacy and solve pressing problems, all the joy was sucked out of environmental education” (para. 35).

In the 40th anniversary edition of *The Journal of Environmental Education*, Strife (2010) questioned why environmental education has not played a larger role in the emerging environmental awakening in the U.S.:

If a central goal of environmental education is to motivate human engagement and action in resolving environmental problems (Intergovernmental Conference on Environmental Education, 1977), then why isn't it the centerpiece of this go-green and sustainability enthusiasm? More importantly, why is environmental education still considered “supplementary education” and not seen as a critical approach to developing a more sustainable society in the U.S.? (p. 180)

She determined that what is needed is a philosophical and paradigmatic shift in both environmental education curriculum theory and pedagogical practice. This includes a shift from a “save the trees” approach to environmental education to one that highlights the benefits to humans, like the positive effects on student academic achievement, engagement in learning, civic responsibility, and health and well-being. Similarly, Saylan and Blumstein (2011) called for an entire redefinition of environmental

education:

One that encompasses multidisciplinary teaching approaches. One that seeks to cultivate scientific and civic literacy. One that stimulates community engagement, fosters an understanding of moral systems, and reinforces the appreciation of aesthetics. (p. 3)

While they recognized that there are obstacles to such an educational approach, they insisted, “a comprehensive, integrated, revitalized, and revised environmental education is essential for the survival of us all” (p. 4). This, more broadly, necessitates “sweeping, ongoing, and creative” (p. 194) school reform.

Environmental Education 2.0

To be sure, there are organizations, frameworks, and movements that recognize the limits of “traditional” environmental education and that are pushing school reform broadly, and environmental education in particular, in new directions. In fact, the title of this dissertation—*Environmental Education 2.0*—points to this phenomenon. The term “2.0” is most often used to describe the second generation of web content and applications. Whereas Web 1.0 is text-based, linear, and static, Web 2.0 is multimodal, collaborative, and dynamic. Examples of Web 2.0 include social networking media like Facebook and Twitter, blogs, wikis, and video sharing sites like YouTube. Thus, “2.0” has emerged to describe an evolutionary breakthrough in the development and usage of web technology.

In much the same way, I adopt “2.0” to describe the next wave of environmental education, one that is more comprehensive, interdisciplinary, and vibrant, and one that

extends and enriches the first wave of environmental education. Whereas the first wave might be characterized as nature appreciation, science-based, and focused primarily on technofixes to environmental problems, the second wave integrates the social, cultural, and ecological and is woven into English, math, and history classes. Since the problems we face are complex, the solutions will be as well. The Environmental Education 2.0 movement is varied and evolving, but what is common is a commitment to alleviate the strain humans are causing the planet, to cultivate ways of living that are more humane and sustainable, and to move toward an ethical system and sense of justice that considers healthy and sustainable ecosystems and communities as the number one priority.¹¹

Recent studies have pointed toward these new directions environmental education is taking. Reid and Scott (2006), for example, surveyed environmental education scholars for their thoughts on where the field is headed in the future. Responses included increased attention to ontology, epistemology, and theoretical approaches; dominant educational and environmental discourses; an interrogation and exploration of the relationship between theory and practice; and the relationship between race, culture, and power, and its influence on environmental education and research. Just last year Ardoin, Clark, and Kelsey (2012) investigated the future trends in environmental education broadly and environmental education research in particular.

¹¹ Examples include Earth Education (van Matre, 1990), critical environmental education (Fien, 1993; Greenall, 1987; Huckle, 1991; Robottom, 1987), ecoliteracy (Goleman, Bennet, & Barlow, 2012; Orr, 1992; Stone & Barlow, 1995), education for sustainability (Sterling, 2001; Tilbury, 1995), ecopedagogy (Kahn, 2010), and sustainability literacy (Stibbe, 2009).

In addition to surveys and content analysis of journals, they interviewed leading environmental education scholars regarding the effects of global trends like the technology revolution, the globalization of environmental issues, and new urbanization might have on the field of environmental education in the coming years. The authors found four recurring trends: a focus on community, connections between the social and the ecological, the urban context, and the rise of the digital age. “The relevance of EE research,” they wrote, “seems to be expanding as EE intertwines with health, justice, resilience, and other frameworks that recognize social-ecological interconnections” (p. 16).

There is one particular framework, EcoJustice education, which speaks to these emerging trends, especially the focus on community, the connections between the social and ecological, and the relationship between race, culture, power, and the environment. EcoJustice education is grounded in eco-feminist philosophy and place- and community-based education and has been theorized by Bowers (2001) and, more recently, Martusewicz et al. (2011). The primary premise is that the ecological crises we face are rooted in culture, and that too many humans have lost sense of themselves as beings in relationship with and dependent upon larger ecological systems. Moreover, Westernized culture has *produced* ecological crises through the pervasive homogenization, monetization and privatization of existence, resulting in the alienation of community, the loss of forms of intergenerational wisdom that sustain healthy communities, and the erasure of cultural diversity into a global monoculture.

One part of the work of EcoJustice education is to *decolonize* (Gruenewald,

2003), or to unpack and critically examine the cultural roots and contemporary manifestations of Western discourses that shape modern culture, including the ways culture shapes people psychologically, practically, epistemologically, linguistically, and emotionally.¹² For example, EcoJustice educators teach about the ways individualism, anthropocentrism, rationalism, scientism, and consumerism permeate Westernized culture. These cultural conceptualizations, what Martusewicz et al. (2011) call *discourses of modernity*, contribute to ways of thinking and being in the world that divide, marginalize, and exploit, and they must be named, critically examined, and resisted. EcoJustice educators also critique modern capitalism, especially as it is manifested in globalized neoliberal economic theory, and the ways in which the cultural and environmental commons¹³ is enclosed and marginalized. Decolonization is an unlearning process, a means of deconstructing and abandoning what dominant culture broadly, and schooling in particular, teaches.¹⁴

¹² Gruenewald (2003) uses the terms *decolonize* and *reinhabit* to describe the work of what he calls a “critical pedagogy of place.” I borrow the terms here as I think they also apply to the work of EcoJustice education.

¹³ The cultural and environmental commons can be defined as “the right of local people to define their own grid, their own forms of community respect for watercourses, meadows, or paths; to resolve conflicts their own way; to translate what enters their ken into the personal terms of their own dialect; to be ‘biased’ against the ‘rights’ of outsiders to local “resources” in ways usually unrecognized by modern laws; to treat their home not simply as a location housing transferrable goods and chunks of population but as irreplaceable and even to be defended at all costs” (The Ecologist, 1994, p. 111). Additionally, the cultural and environmental commons represents “the lived alternatives to money-dependent activities” and “potential sites of resistance to the spread of the consumer-dependent lifestyle” (Bowers & Martusewicz, 2009, p. 273).

¹⁴ This is what Bowers (1974, 1993, 1997, 2001) called *cultural literacy*: uncovering harmful assumptions guiding Westernized culture and the language patterns that

At the same time, EcoJustice education works toward *reinhabitation* (Gruenewald, 2003), or the ways in which humans can live in harmony with each other and their local ecosystems. It involves determining the cultural patterns that are sustainable and those that are not, which requires fostering what Martusewicz and Edmundson (2005) call an *eco-ethical consciousness*: “a way of thinking and acting necessary to creating and protecting just and sustainable communities” (quoted in Martusewicz et al., 2011, p. 9). EcoJustice educators teach ways to recover or revitalize the commons (Bowers, 2006), the public spaces and places that provide sustenance, security, and interdependence, which include but are not limited to trees, minerals, water, animals, language, time, silence, seeds, and streets. Preserving the commons is an effort that values and honors local space, resources, and culture, and actively resists the forces of global monoculture.¹⁵

Finally, EcoJustice educators employ place-based pedagogy in an effort to reintegrate individuals with the landbases and communities in which they are interdependently linked (Gruenewald & Smith, 2008; Smith & Sobel, 2010; Sobel, 2004). It involves using the local community and environment as the context for all learning and is much broader and more inclusive than environmental education. Rather than limiting the focus to natural science—i.e. field ecology and nutrient cycles—place-based education includes the study of local history, folk culture, community infrastructure, and

perpetuate human separation from and exploitation of nature, decoding “the taken-for-granted cultural patterns that otherwise control thought and behavior” (Bowers, 1993, p. 114-115).

¹⁵ The commons is a topic I return to in the fifth chapter.

how they all interact and shape each other.¹⁶ This approach “helps students develop stronger ties to their community, enhances students’ appreciation for the natural world, and creates a heightened commitment to serving as active, contributing citizens” (Sobel, 2004, p. 7).

In sum, EcoJustice education takes a different approach from traditional environmental education, one that delves deeper into the cultural roots of ecological and social crises, into the assumptions and conceptualizations that position humans as separate from and superior to ecosystems and that rationalize the domination, exploitation, and marginalization of people groups, Indigenous knowledge, and the natural world. EcoJustice education is, in many ways, the centerpiece of this study.

The Study

Postman and Weingartner (1969) wrote that they maintained “a belief in the improbability of the human condition through education” (p. xiii). I, too, share that belief, especially regarding the ability of teachers to make a significant difference in the lives of children. I spent eleven years with adolescents in a small K-8 school. For most of that time I taught European history and parts of speech and how to write a five-paragraph essay. In my final two years, though, I built and maintained a garden with my students. We started from scratch the first year. With the help of a local landscaping company, we put together four raised beds beside the parking lot. We cleared gravel, leveled and amended the soil, and planted some vegetables in the spring. A confluence of factors inspired my garden experiment, from my desire to incorporate more hands-on

¹⁶ Place-based education emphasizes “the necessary interpenetration of school, community, and environment” (Sobel, 2004, p. 11).

learning to reading books that critiqued the fast-paced, instant-gratification, and profit-driven food culture in the U.S. (Spurlock, 2005; Schlosser, 2005; Critser; 2003).

Gradually, I became more concerned about what I was doing to promote healthy and sustainable lifestyles for my students and our community than test scores or the Standard Course of Study. I felt an ethical conviction to offer an alternative to the logic of capitalism that so many of us in Westernized cultures consider normal. I did not know the best way to do it, so I grabbed a shovel.

Other teachers have taken similar actions, like taking kids outside and talking about the ways in which everything thrives in complicated interdependencies, like incurring in their students a love of the outdoors, of plants and animals, of healthy ecosystems. Perhaps, as it was for me, that is their means of fighting back, of rewriting culture, of telling kids different stories about the world, stories not framed by the global economy and the pursuit of material wealth. They are working to give children opportunities, options, to think and live differently, to consider other, more sustainable ways of being in the world. In *Blessed Unrest*, Hawken (2007) writes about worldwide efforts “to resist and heal the effects of political corruption, economic disease, and ecological degradation,” a movement rooted in “environmental activism, social justice initiatives, and indigenous cultures’ resistance to globalization” (p. 12). While there is no overriding orthodoxy or organization of the diverse individuals and groups working on behalf of displaced and marginalized people groups and the environment, there are shared values among those involved: primarily a recognition of and respect for the web of life (Capra, 1996). There are no doubt countless numbers of teachers that are part of

the movement described by Hawken. They are contributing to what Thomas Berry (1999) calls “the Great Work”: carrying out “the transition from a period of human devastation of the Earth to a period when humans would be present to the planet in a mutually beneficial manner” (p. 3). For this dissertation study, I set out to learn as much as I could about the “Great Work” in my community. If there were teachers who recognized that infinite economic growth is not only impossible but also abusive, who worked toward fostering ethical values based on the health and well being of humans *and* ecosystems, who advocated—however they could, in a variety of ways—for just, democratic, and sustainable communities, then I wanted to talk with them and learn from them.

I recruited participants for the study via an email that began with the following three questions: Interested in learning about EcoJustice Education? Interested in collaborating with other teachers who are teaching for ecological and social justice? Interested in invigorating your teaching and curriculum with place-based and justice-oriented projects? I specifically targeted teachers that were interested in teaching about the environment and social justice. In order to learn more about the participants—who they are, what they teach, why they teach what they do—I began with the following research questions:

- What are the beliefs, aims, and motivations of the participants?
- What kind of work are they doing already? That is, what strategies, projects, and methods do they use?
- What obstacles have they faced?

I believed their stories, journeys, and experience could help me understand more about the work of teaching for a more just and sustainable future.

Seven educators agreed to participate in a Critical Friends Group (CFG) that met seven times over the course of five months. CFGs are a particular type of professional development community for teachers dedicated to improving their practice through collaborative learning (Bambino, 2002). Curry (2008) noted two premises of CFGs. First, “that classrooms ought to be the center of school reform efforts and that teachers should lead educational change” (p. 735). Second, “that schools cannot be intellectually engaging places for students unless their teachers are likewise actively engaged in learning, thinking, reading, and discussing” (p. 735). The purposes of CFGs include making teaching practices explicit by talking about teaching, critically reflecting on practice, turning theory into practice, and improving teaching and student learning. In addition, CFGs are characterized by, “teacher-driven management, close attention to classroom practice, relaxed and collegial ethos, and reliance on structured conversation guides called protocols” (Curry, 2008, p. 735).¹⁷ CFGs, therefore, are a grassroots effort to bring about educational reform, teacher learning, and student achievement. By design they stand in opposition to top-down and touch-and-go models of teacher professional development.

The springboard for our discussions was the book *EcoJustice Education: Toward Diverse, Democratic, and Sustainable Communities* (Martusewicz et al., 2011). So, in addition to the questions above, I also set out to learn what it means for educators to

¹⁷ In our CFG we did not follow strict protocols. Instead, we opted for a more open and flexible form of conversation.

immerse themselves in the study of EcoJustice education. The additional research questions, then, were these:

- What happens when teachers committed to the preserving and protecting the environment engage in collective conversation about EcoJustice education?
- In what ways does EcoJustice education enrich, extend, challenge, and trouble the work that they do already?

While eco-feminists (Plumwood, 1993, 2001; Warren, 2000), environmental philosophers (Berry, 1999; Merchant, 1980), and social ecologists (Bookchin, 2005) have been writing for years about the complex relationship between culture and ecology, their work is not typically utilized in teacher education programs or professional development workshops. I think it is imperative that teachers, and by extension their students, learn to identify and critique the cultural habits that injure humans and ecosystems and to practice ways of thinking and acting that restore sustainable, just, and democratic communities. Perhaps EcoJustice education could succeed where environmental education had failed and show promise as a powerfully transformative framework that shapes how teachers might integrate ecological and social issues into the classroom. In order to find out, I introduced seven educators to EcoJustice education.

My goals for this study were to gain a deeper insight into the complexities of teaching for just, democratic, and sustainable communities, to note the patterns and themes that emerged from talking with educators that are passionate about inspiring students to care for the planet, to engage the participants in discussions about

EcoJustice education and determine the ways in which it might enrich, extend, challenge, and trouble their work, and to contribute to the literature on environmental education, EcoJustice education, and teacher education. Before describing the details of the study, though, I turn to the larger context in which the study is situated.

CHAPTER 2

Theoretical and Historical Context

Our great modern powers of science, technology, and industry are always offering themselves to us with the suggestion that we know enough to use them well, that we are intelligent enough to act without limit in our own behalf. But the evidence is now rapidly mounting against us. By living as we do, in our ignorance and our pride, we are diminishing our world and the possibility of life.

—Wendell Berry (2005, p. 125)

Globalization and Neoliberalism

In the 21st century, globalization is affecting nearly everyone and everything. According to Scholte (2000), there are five aspects or effects of globalization: *internationalization*, the growth in international exchange and interdependence; *liberalization*, the increased freedom of movement between countries; *universalization*, the sharing of ideas, aspirations, and experiences; *modernization*, the spread of capitalism and industrialism; and *deterritorialization*, the reconfiguration of geography in ways that blur how social space is mapped. Globalization is indeed a complex set of dynamics and paradoxes. The environmental movement is now global, but so is mass consumption. Supranational organizations have been created to reach where national governments cannot, but those organizations are not democratic or held accountable by checks and balances (Scruton, 2012). New technologies have solved old problems, but

new ones have arisen. And while the global economy has lifted some out of poverty, it has also produced globalized externalities and enhanced global inequities (Bauman, 1998; Shiva, 2005).

Saul (2005) referred to globalization as the rise of corporate economic ideology and the erosion of democracy. Numerous scholars have described how this corporate economic ideology, neoliberalism, is driving globalization, shaping and framing globalization in terms of markets and opportunities for growth (Bourdieu, 1998; Chomsky, 1998; Giroux, 2004; Grossberg, 2005; Sassen, 1998; Stiglitz, 2002). Harvey (2004) defined neoliberalism as “a theory of political economic practices that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets, and free trade” (p. 2). But neoliberalism is not simply the transfer of control of the economy from the public to the private sector in the name of freedom and democracy, as proponents often claim. It is also an ideological paradigm, an ethic unto itself that leads to social, cultural, and political practices and policies that use the language of markets, efficiency, consumer choice, transactional thinking and individual autonomy to shift risk from governments and corporations onto individuals and to extend this kind of market logic to all human action (Harvey, 2004; Ong, 2006). Consequently, neoliberalism is redefining citizenship as consumerism; celebrating a ruthless competitive individualism; characterizing human misery as a function of personal choices; subordinating democracy to the rule of the market; disconnecting economics from its social consequences; and telling a very limited story (Giroux, 2004).

Berthoud (1992) wrote that in the era of neoliberalism, “the market is not considered merely as a technical device for the allocation of goods and services, but rather as *the only possible way to regulate society*” (p. 70, italics mine). The ethic of neoliberalism is exemplified in Berry’s (1995) critique of the global economy. For him, the promoters and defenders of the global economy follow these principles:

They believe that a farm or forest is or ought to be the same as a factory; that care is only minimally necessary in the use of the land; that affection is not necessary at all; that for all practical purposes a machine is as good as a human; that the industrial standards of production, efficiency, and profitability are the only standards that are necessary; that the topsoil is lifeless and inert; that soil biology is safely replaceable by soil chemistry; that the nature or ecology of any given place is irrelevant to the use of it; that there is no value in human community or neighborhood; and that technological innovation will produce only benign results. (p. 13)

In a neoliberal, “culture of endless acquisition” (McLaren & Farahmandpur, 2001), the creation and maintenance of wealth is the core value, and concerns for morality, human needs, and ecological health suffer. As Polanyi (1944) contended, the market economy erodes the web of relationships that hold human society together.

Too many assume that political, cultural, and economic exchanges in the global marketplace are symmetrical, a phenomenon comprising equal partners and fair exchanges. Such is not the case. As the boundaries of local and global affairs are blurred, not everyone experiences the effects in the same way (Shiva, 1993). “Under

the discipline of the discourses of globalization,” Grossberg (2005) wrote, “there have been major transformations in the territorial organization of economic activity and political-economic power, resulting in a radical redistribution and reorganization—a new concentration—of economic wealth and power” (p. 148). This new geography of power exacerbates the uneven distribution of wealth on both local and global scales.¹⁸

According to Shiva (2005):

Globalization promised to spread democracy under the assumption that free trade equals open markets, which equals open societies. This equation does not hold. The markets of corporate globalization are not open—the trade rules give control to giant corporations. And the resulting societies are not open either. Corporate globalization is creating a dictatorship over food and water, over the most vital aspects of our lives. It is robbing us of our freedoms at the most fundamental level—that of survival. (p. 73)

Instead of it being the means to alleviate poverty and democratize the world, Shiva declared globalization the opposite.

In a globalized neoliberal context, the complicated, omnipresent, and interrelated social and ecological crises—consequences most often experienced by those on the underside of power—are typically pushed to the periphery or framed as individual problems rather than systemic or culturally-rooted dilemmas. There are numerous examples of the dysfunctional relationship among people and the planet.

¹⁸ While globalization may seem to be a powerful determinant that possesses homogenizing tendencies, it must be seen, as Grossberg (2005) noted, as more of a process of negotiation and hybridization.

Marginalized communities in the U.S. disproportionately occupy unsafe and unhealthy physical environments because of their proximity to chemical-spewing factories and toxic waste sites (Bullard & Waters, 2005; Bullard, 2000; Bullard, 1994; Bullard, 1993). Dams in India—altars of “progress” and “development”—displace millions of Indian citizens and destroy both livelihoods and land (Roy, 1999). Multinational corporations—like Monsanto, for instance, that produce genetically modified seeds and sell them to “Third World” farmers—decimate local knowledge systems and Indigenous communities (Shiva, 1993, 1997). And, perhaps most alarmingly, there are global environmental crises like species extinction, toxic pollution, desertification, acid rain, polar sea ice loss, collapsing fish stocks, human population explosion, water shortages, ozone depletion, climate disruption, deforestation, and ocean acidification (Flannery, 2005; Gore, 1992; McKibben, 1989; Speth, 2004; Wilson, 2003).

As I wrote in the previous chapter, Westernized cultures are destroying life-supporting ecological systems at an unsustainable rate (Bender, 2003; Hossay, 2006; Keith, 2011). Indeed, if current levels of production and consumption are maintained, even without any growth in human population or the world economy, the planet’s climate and biota will be destroyed (Speth, 2008). But biological life and diversity are not the only victims: cultures and languages, thoughts and intuitions, myths and beliefs, ideas and inspirations that represent centuries of human imagination are also being destroyed (Davis, 2009). Indigenous people groups—natives of a particular bioregion for many generations; concrete examples, in many cases, of sustainable societies that historically evolved in diverse ecosystems—face extinction at worst, adaptation and

renewal at best, in the wake of the globalization of Westernized technology, science, and culture.

The impact of globalization is strongest on these [Indigenous] populations perhaps more than any other because these communities have no voice and are therefore easily swept aside by the invisible hand of the market and its proponents. Globalization is not merely a question of marginalization for Indigenous peoples; it is a multi-pronged attack on the very foundation of their existence and livelihoods. (Indigenous Peoples and Globalization Program, n.d., para. 1)

The myriad cultures that comprise the intellectual and spiritual web of life—what Davis (2009) calls the *ethnosphere*—are just as important as the biological web of life and suffering from globalization just as much if not more. Indigenous people are being pushed off of their land because they occupy “resource”-rich territory sought by multinational corporations. Dams, mines, pipelines, roads, wells, and military intrusions all threaten their autonomy. Biopiracy, the theft and privatization of Indigenous knowledge for commercial profit, is legalized and legitimated by new global patenting laws made possible by the World Trade Organization (Shiva, 1997). The loss of languages from monoculturalization—“Of the 7,000 languages spoken today, fully half are not being taught to children” (Davis, 2009, p. 3)—means the wisdom of elders, of sustainable ways of living, of cultural and intellectual legacies are disappearing. “There is a fire burning over the earth,” Davis (2009) wrote, “taking with it plants and animals, ancient skills and visionary wisdom” (p. 34).

Yet, after five decades of activism—from Greenpeace boats in the ocean obstructing whaling vessels to annual Earth Day celebrations to citizens marching in the streets to protest military invasions and the WTO to environmental education programs and curricula—the social, cultural, and environmental effects of neoliberalism have not dramatically diminished (Speth, 2008). Shellenbarger and Nordhaus (2004), in their essay “The Death of Environmentalism,” explained that the mainstream environmental movement is not capable of dealing with the world’s most serious crises: “We will never be able to turn things around as long as we understand our failures as essentially tactical, and make proposals that are essentially technical” (p. 7). According to Plumwood (2002), technical, tactical fixes are futile. They “can stretch ecological limits, but it is not a substitute for the cultural process of recognizing those limits, nor will it necessarily contribute to that process” (p. 7). She elaborated:

Technofix solutions make no attempt to rethink human culture, dominant lifestyles and demands on nature. Our current debacle is the fruit of a human- and reasoned-centered culture that is at least a couple millennia old, whose contrived blindness to ecological relationships is the fundamental condition underlying our destructive and insensitive technology and behavior. To counter these factors, we need a deep and comprehensive restructuring of culture that rethinks and reworks human locations and relations to nature all the way down. (Plumwood, 2002, p. 8).

The point is that the ecological and social problems we face are not due to slight malfunctions of existing economic and social systems but are instead due to the

Westernized cultural assumptions, beliefs, and practices that dislocate humans from the environment, ignore ecology, and worship material accumulation.

The “solutions” that most often circulate, though, are woefully impotent of transformative power. For example, popular rhetoric to “green” the economy in order to reduce pollution, create new jobs and industries, spur the financial sector, raise standards of living and reduce inequality, and shrink dependence of foreign sources of energy are the very technofix solutions that Plumwood criticized as inadequate.

Concepts like sustainable development (including the latest edition of environmental education: education for sustainable development) and natural capitalism (e.g., Friedman, 2009; Hawken, Lovins & Lovins, 2000) do not address the cultural roots of social and ecological crises. In order to seriously tackle the destructive effects of Westernized culture, we need to move beyond technofixes and toward an eco-centric cultural transformation. And to do this, we need a better understanding of the ways of thinking and living that have gotten us here in the first place.

Historical Roots

The roots of ecological and social crises run deep. Neoliberalism is merely the latest incarnation of modernist assumptions and conceptualizations that privilege humans over the environment (anthropocentrism), materialism over conservation (consumerism), individuals over communities (individualism), Western scientific knowledge over Indigenous knowledge (scientism), “advanced” cultural groups over the “primitive” ones (ethnocentrism), men over women (androcentrism), and reason over emotion (rationalism). Although these –isms have existed throughout history, their

ascension to cultural prominence coincided with the rise of modernity. Giddens (1990) defined modernity as “modes of social life or organization which emerged in Europe from about the seventeenth century onwards and which subsequently became more or less worldwide in their influence” (p. 1).¹⁹ Foucault (1984), in contrast, considered modernity an *attitude* more than a period of history, “a mode of relating to contemporary reality,” and “a way of thinking and feeling” (p. 39). Christianity, Greek philosophy, and the Scientific Revolution all played a role in the construction of modernity, of a human- and reason-centered culture that became blind to ecological relationships.

For the better part of two millennia, Westernized cultures have lived largely in the context of Christian influence. Humans are featured centerpieces of the Christian creation story, given naming rights and a unique connection to God. The conquest of nature is integral to the Christian creation narrative, and for centuries scientific quests were couched in this dogma. Scientists pursued an understanding of the mind of God and how creation operates. As White (1967) noted, “From the 13th century onward, up to and including Leibnitz and Newton, every major scientist, in effect, explained his motivations in religious terms” (p. 1206). The interrelationship between science, technology, and a Christian theology espousing the separation of humans from nature is a centuries old tradition that has carried into the present.

¹⁹ Giddens (1990) identified three dominant sources of “the dynamism of modernity”: the separation of time and space (pre-modern cultures linked time *with* space); the development of disembedding mechanisms (symbolic tokens and expert systems separate social activity from localized contexts); and the reflexive appropriation of knowledge (the production of systematic knowledge divides social life from the fixities of tradition).

The domination of nature is also rooted in classical Greek philosophy, specifically Western dualisms. “A dualistically construed dichotomy,” Plumwood (1991) wrote, “typically polarizes difference and minimizes shared characteristics, construes difference along lines of superiority/inferiority, and views the inferior side as a means to the higher ends of the superior side” (p. 17). By design, dualisms are defined in opposition, and the task of the superior side “is to separate from, dominate, and control the lower side” (p. 17). The human/nature dualism is common in Western thought, as are the interrelated dualisms of mind/body, reason/nature, reason/emotion, civilized/primitive and masculine/feminine, among others (p. 10). These dualisms exist in a relation of separation and domination and, importantly, are “inscribed and naturalized in culture” (Plumwood, 1993, p. 47). This is similar to what Warren (2000) referred to as *value-hierarchical thinking*.

Rationalism is another problematic consequence of Greek philosophy. “Dominant forms of reason,” Plumwood (2002) wrote, “are failing us because they are subject to a systematic pattern of distortions and illusions in which they are historically embedded and which they are unable to see or reflect upon” (p. 16). She named the distortions and illusions *blindspots*, which affect the way we understand our relationships to nature and to one another. “Rationalism has given us a deeply anti-ecological narrative of reason that has guided much of the development of Western culture, with the ecological crises as its climax” (Plumwood, 2002, p. 18). Reason is the lead character in a modern rationalist narrative of domination, and the failure of Western culture to see humans as ecologically embedded beings is one of the major

legacies of rationalism. “Dualism and rationalism function together,” Plumwood (2002) argued, “as a system of ideas that justifies and naturalizes domination of people and events by a privileged class identified with reason, who deserve to be in control and to be disproportionately rewarded” (p. 17). Moreover, this rationalist culture fosters what Plumwood (2002) called *human self-enclosure* and *human centeredness*, which, in turn, promotes a damaging form of epistemic remoteness, “for by walling ourselves off from nature in order to exploit it, we also lose certain abilities to situate ourselves as part of it” (p. 98). This cultural phenomenon of ecological denial is what Plumwood (2002) referred to as the *illusion of disembodiedness*: we deny our dependency and disassociate from nature in order to manipulate it and in effect restrict our ability to empathize or relate to it dialogically (p. 120).

Until the 16th century in Europe, the prevailing metaphor that bound the self, society, and the cosmos was that of an organism: nature was perceived as a nurturing, benevolent mother²⁰; and daily interactions were structured by “close-knit, cooperative, organic communities” (Merchant, 2001, p. 274). However, over the course of two centuries the Scientific Revolution and the rise of market-oriented culture undermined this organic cosmology:

The metaphor of the earth as a nurturing mother was gradually to vanish as a dominant image as the Scientific Revolution proceeded to mechanize and to rationalize the world view. The second image, nature as disorder, called forth an important modern idea, that of power over nature. Two new ideas, those of

²⁰ Viewing the earth as Mother Nature is also problematic if viewed through a feminist lens. I am not suggesting this metaphor is ideal.

mechanism and of the domination and mastery of nature, became core concepts of the modern world. (Merchant, 2001, p. 274)

This mechanistic worldview licensed the exploitation of nature, rampant industrialization, and the subordination of women, and replaced a more sustainable, organic worldview.

Merchant further argued that scientist Francis Bacon “fashioned a new ethic sanctioning the exploitation of nature” and “developed the power of language as political instrument in reducing female nature to a resource for economic production” (p. 276-277). Shiva (1992) agreed: “In Bacon’s experimental method, there was a fundamental dichotomizing between male and female, mind and matter, objective and subjective, the rational and emotional” (p. 209). This method “was a peculiarly masculine mode of aggression against nature and domination over women and non-Western cultures” (p. 209). Other 17th century scientists adopted a similar aggressive stance toward nature, including Descartes. With the mechanistic metaphor came norms quite different from those of organicism. “The removal of animistic, organic assumptions about the cosmos,” Merchant (2001) wrote, “constituted the death of nature—the most far-reaching effect of the Scientific Revolution” (p. 281).²¹

²¹ One example of the use of the mechanistic metaphor is the book *The Machinery of Nature*. Ehrlich (1986) wrote: “The very future of our society depends on whether *Homo sapiens* can learn to live without damaging the machinery of nature so seriously that it can no longer support civilization” (p. 12). And later: “To understand nature’s machinery, however, you will need to grasp not only how it operates now, but how it was constructed over billions of years” (p. 13). Berry (1995) critiqued the modern ambition to understand and control nature: “If nature is to be controlled, then it has to be reduced to that which is theoretically controllable. It must be understood as a machine or as the sum of its known, separable, and decipherable parts” (p. 77).

These legacies of modernity are prevalent and circulate repeatedly in Westernized culture: the belief that we are all autonomous rather than interdependent; that the living world is like a machine; that change is inherently good and occurs in a linear direction; that the path to happiness is brought about by the accumulation of material objects; that humans and human interests are superior to the natural world. The logic of human domination (Warren, 2000) is especially evident in Western notions of progress, development, and civilization. Shifting from an anthropocentric, individualist, neoliberal culture to one that situates humans in larger ecological systems and cultivates an ethic of care toward all beings will not be easy. As Morris (2002) noted:

It will be difficult for many people to embrace ecocentric thinking because schooling reproduces ways of thinking that are completely antithetical to it. Anthropocentrism is a product of modernism and Enlightenment, and we as human beings are, in a sense, children of the Enlightenment. It is very difficult, therefore, to move away from thinking that is couched in Enlightenment discourse. It is hard not to think that we are not the center of everything. It is very difficult to move away from thinking that the earth is merely a tool for us to exploit. (p. 581.)

Leopold (1949) stated that there is no ethic guiding human relation to land, animals and plants, save an economic one in which nature gives and does not receive. He argued for

Ehrlich's intent was to make his readers aware of ecological principles and the need for more sustainable ways of living, but he did so using the mechanistic metaphor that Merchant credits with bringing about the death of nature, and that Berry suggests is the means by which we seek to control nature.

an expansion of “the boundaries of community to include soils, waters, plants, and animals, or collectively: the land” (p. 204). The land ethic, as he named it, alters the role of humans—from that of conqueror of the land to a citizen of it—and reflects the existence of an ecological consciousness, a conviction for the health of the land.²² For Leopold, the most serious obstacle to the evolution of a land ethic is that “our educational and economic system is headed away from, rather than toward, an intense consciousness of the land” (p. 223).

Resistance

Both Morris (2002) and Leopold (1949) indicted Western education as an obstacle to social and ecological well being. In order to bring about a more just and sustainable world, there must be a deliberate troubling of the legacies of modernity and the logic of human domination in schools, which is not only a matter of curriculum, but also a matter of resisting the neoliberal assault on public education (Giroux, 2004; Hill & Kumar, 2009; Ross & Gibson, 2007). Jickling and Wal (2008) described neoliberalism as a “powerful wave ... rolling over the planet, with pleas for ‘market solutions’ to educational problems [which] are homogenizing the educational landscape” (p. 2).

Giroux (2012) wrote that neoliberal education reform efforts

focus narrowly on high-stakes testing, traditional texts and memorization drills.

At the heart of this approach is an aggressive attempt to disinvest in public

²² The land ethic is defined as follows: “A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise” (p. 224-225). See also Merchant’s (2005) partnership ethic, which she described as a synthesis between eco-centrism and environmental justice: “A partnership ethic holds that the greatest good for the human and nonhuman communities is in their mutual living interdependence” (p. 83).

schools, replace them with charter schools, and remove state and federal governments completely from public education in order to allow education to be organized and administered by market-driven forces. (para. 1)

One of the more recent and prominent examples is No Child Left Behind (NCLB). According to Hursh (2007), NCLB “exemplifies the transformation in the dominant discourses on education and society, as societal institutions are recast as markets rather than deliberatively democratic systems” (p. 494).²³ Scholars have noted how the effects of neoliberal ideology have altered the purpose of schooling, from equipping students to be thoughtful and engaged democratic citizens to preparing them to be private “consumer-citizens” ready for entry into the global economy²⁴ (Apple, 2006; Giroux, 2004; Labaree, 2010; Spring, 1998; Spring, 2003; Taubman, 2009).

The wave of neoliberal reform makes educating for ecological and social justice quite difficult, no doubt. Narrow curriculum standards, standardized testing, and corporatized curriculum resources suffocate more democratic and holistic approaches to teaching and learning. Despite these very real obstacles, schools are still potential sites of resistance, where students can be taught the values and ethics and skills for

²³ I recognize that the influence of neoliberalism on education goes back much further than the turn of the century.

²⁴ I observed this firsthand at an education conference for K-12 teachers and administrators entitled *21st Century Skills for the Global Economy*. One organization’s pamphlet stated their aim, which could also serve as the mission of most schools in the United States today, like this: “Increasing student knowledge and skills about the world so that young people are prepared to thrive in the global economy.” Turn the page and there is this from the inside cover: “Learning about the world is important because high school graduates will be selling to the world, buying from the world, working for international companies, managing employees from other countries and cultures, and competing with people on the other side of the world for jobs and markets.”

living sustainably, resolving conflict, and respecting nature and each other (e.g., Bowers, 2006; Smith & Williams, 1999; Stone, 2009; Stone & Barlow, 1995). Schools may be “deaf to the sound of a dying planet” (Morris, 2002, p. 581), but there are teachers that believe that the “knowledge that will save the planet from complete destruction is of most worth” (p. 583) and that ecological consciousness will “tear down the walls between schooling and society, teachers and students, texts and world, animals and human beings, human beings and non-human creatures” (p. 584). In the next chapter, I explain how I set out to find a group of teachers who were interested in tearing down those walls, and in what ways EcoJustice education might enrich, extend, or trouble their efforts.

CHAPTER 3

Research Methods

As I wrote in the first chapter, I recruited participants for this study who were interested in learning about EcoJustice Education, collaborating with other teachers who are teaching for ecological and social justice, and invigorating their teaching and curriculum with place-based and justice-oriented projects. I specifically wanted to know: What are the beliefs, aims, and motivations of the participants? What kind of work are they doing already? That is, what strategies, projects, and methods do they use? What obstacles have they faced while doing this work? I invited seven educators to participate in a Critical Friends Group (CFG) that met seven times over the course of five months. The focus of our discussions was the book *EcoJustice Education: Toward Diverse, Democratic, and Sustainable Communities* (Martusewicz et al., 2011). So in addition to learning about what these teachers currently do, I also set out to learn what it means for teachers to immerse themselves in the study of EcoJustice education. Other additional research questions, then, were: What happens when teachers committed to the preserving and protecting the environment engage in collective conversation about EcoJustice education? In what ways does EcoJustice education enrich, extend, challenge, and trouble the work they do already?

Ecological and Postcritical Research

In her doctoral research on the challenges of living out an ecological worldview

in Westernized culture, which included interviewing teachers who lived and conducted their teaching through an ecological lens, Pivnick (2003) believed there needed to be an alignment between *what* she was researching and *how* she was researching. She asked: *What would research look like that is grounded in an ecological worldview? What would it mean not simply to do ecological research but to do research ecologically?* (p. 144, italics mine). She understood the research process to be akin to nature observation: “Let your interests dictate your schedule and be open to what crosses your path. Slow down so that you can pick up subtleties. Don’t analyze. See newness in everything: nothing is commonplace. Immerse yourself in nature. Ignore discomforts. Don’t try so hard. Follow your heart” (p. 147). Doing research ecologically is to enter the field with a sense of wonder, to see the interrelatedness of everything, to be still and attentive. Since Pivnick’s (2001) dissertation project shared some similarities with my own, I, too, wanted to approach the study from an ecological stance. For me, that meant being more open to the needs of the participants than my own plans for the research study, seeing the research study as an opportunity to speak and grow *with* the participants, and forming meaningful relationships that extended beyond their utility for my own ends.

The methods of this study are rooted in my understanding of postcritical ethnography (Noblit, Flores, & Murillo, 2004). This research is not only “critical” in that it focuses upon (potentially) transformative pedagogies and curriculum, but it is also postcritical: dialogic, collaborative, and pedagogical. The purpose was not to extract knowledge from the participants, but for the participants and I to act as co-performers

in meaning making (Conquergood, 1991). One of the goals of this research, methodologically, was to engage in what Conquergood (1982) calls “dialogical performance”: a reciprocal giving and receiving between the participants and myself, where we question, inform, and even challenge one another. “It is through dialogue,” Madison (2005) wrote, “that we resist the arrogant perception that perpetuates monologic encounters, interpretations, and judgments” (p. 167). According to Conquergood (1982), “A commitment to dialogue ... resists closure and totalizing domination of a single viewpoint, unitary system of thought” (p. 11). The research process, then, was a joint venture. In this spirit, it was important to me that the entire research project—both the process and the product(s)—be valuable to the participants and to other audiences as well as to me (Madison, 2005).

Recruitment

In October of 2011, I began recruiting educators who self-identified as having a concern for the environment and their community to participate in an extended professional development experience. My main recruitment tool was email.²⁵ I sent a mass email to the North Carolina environmental educators listserv, which reached over 2,000 teachers in the state. I also emailed specific people in the area that I knew might have an interest in the study or could recommend someone who might be interested, like the director of an independent middle school and teachers that participated in a local university’s graduate program with which I was affiliated.

While it was tempting to narrow the context in which the educators worked (like

²⁵ See Appendix A for the recruitment email.

a team of teachers at one school, for example) in order to limit the complexity of the analysis, I consciously invited participants from a range of subject matter and teaching contexts. Since EcoJustice education is interdisciplinary, I wanted to bring teachers together from different subject areas to have cross-disciplinary conversations. And I was open to participants from different teaching contexts, whether a public school, independent school, or something alternative. For one, I did not imagine being able to recruit participants from one site. But secondly, I figured that the participants might be able to form networks across schools that might be profitable in the future. I did, however, require that the participants teach middle grade students (between 5th and 9th grades) so that the conversations regarding curriculum and pedagogy would be applicable to all.

Data Collection

There were two primary means for data collection: two in depth, semi-structured, 60-minute interviews that bookended the study and seven 90-minute Critical Friends Group (CFG) meetings. As I wrote in the first chapter, CFGs are a particular type of professional development community for teachers dedicated to improving their practice through collaborative learning (Bambino, 2002). The purposes of CFGs include making teaching practices explicit by talking about teaching, critically reflecting on practice, turning theory into practice, and improving teaching and student learning.

The first interview helped me to begin to understand the beliefs, background, and experiences of the participants. I asked them about their educational training,

philosophies of teaching, curriculum and pedagogy, and obstacles they face as teachers.²⁶ All interviews were conducted face-to-face in local cafés suggested by the participants and were audio-recorded and transcribed.

After all of the initial interviews were completed, the participants and I began our CFG meetings. We met seven times over the course of five months. The first two meetings were held at a centrally located café agreed upon by the participants. The other five meetings were held at a different café that more easily accommodated larger groups and offered some degree of privacy. The first meeting was on January 26, 2012, and the last meeting was on May 31, 2012. Each lasted approximately 90 minutes. The meetings were audio-recorded and transcribed. I took field notes during each meeting and afterwards wrote reflections about our conversation.

The participants were asked to read the book *EcoJustice Education: Toward Diverse, Democratic, and Sustainable Communities* (Martusewicz et al., 2011). This text had just been published and was written for both pre-service and practicing teachers. I considered the writing clear, accessible, and engaging. Other work on EcoJustice education, like *Educating for Eco-Justice and Community* (Bowers, 2001), was too theoretical and dense, in my opinion. I knew this from experience. I had used the Bowers (2001) text in a graduate class and the students did not find it very useful or helpful. I wanted a text that I thought presented EcoJustice education effectively and lucidly, that made clear the links, for example, between racism, sexism and anthropocentrism, and that would provide fodder for conversation. All participants

²⁶ See Appendix B for the interview questions.

were given a copy of the book at no charge. Since the book contains nine chapters, they were asked to read one chapter in preparation for each meeting.²⁷ The titles of the chapters and when they were read are listed in Table 1.

Table 1. Book chapters read for each meeting

Meeting	Chapter
1	Introduction: The Purposes of Education in an Age of Ecological Crises and Worldwide Insecurities
2	Rethinking Diversity and Democracy for Sustainable Communities
3	Cultural Foundations of the Crisis: A Cultural/Ecological Analysis
4	Learning Androcentrism: An EcoJustice Approach to Gender and Education Learning our place in the Social Hierarchy: An EcoJustice Approach to Class Inequality Learning Racism: An EcoJustice Approach to Racial Inequality
5	Learning about Globalization: Education, Enclosures, and Resistance
6	Learning from Indigenous Communities
7	Teaching for the Commons: Educating for Diverse, Democratic, and Sustainable Communities

The protocols for the meeting were informal and flexible. We sat around a circular or rectangular table so that we could all see one another. Some purchased snacks and coffee at the café. The participants and I engaged in small talk before and after meetings on topics both related and unrelated to the CFG. Most often I began each meeting by welcoming everyone and then asked a question based on the reading

²⁷ For the fourth meeting, the participants were asked to read at least one of the chapters on gender, class, or race.

to get the conversation started.

After all of the CFG sessions, I again interviewed each participant. The goal for the second interview was for the participants to talk about what they learned over the course of the research study, to reflect on the process of learning about EcoJustice education, and share other relevant information about the experience. The interviews were conducted at local cafés chosen by the participants. The interviews were audio-recorded and transcribed.

At the conclusion of the study all participants were given a \$100 stipend.²⁸

Participants

Seven educators—all of whom taught students between 5th and 9th grade—contacted me via email with an interest in the study. In my responses to them I answered any questions they had about the study, explained the expectations and time commitment, and offered to meet in person in order to answer any more questions. All seven educators agreed to be participants in the study. What follows is a brief description of each of the participants based on what I learned about them from their interviews and participation in the CFG. All names are pseudonyms. All participants are of European descent.

Jane. Jane has been a science educator for 12 years. She currently works for a large, suburban public university in an environmental institute dedicated to community outreach. Her responsibilities include working with K-12 teachers, students, and informal educators on topics such as water quality, hazardous waste, climate change,

²⁸ The money for the stipend and the books came from a dissertation grant that I received from the university.

and sustainability. Although she is not trained as an environmental educator, Jane considers herself in that field. Her degrees in biology prepared her to work with science educators, she said. Before her current position, she was a biotechnology educator for a mobile science program and taught biology and botany courses at a community college. During the summer, Jane runs a weeklong program for 9th grade students focused on climate science and community leadership in which students “learn all about climate change, energy, sustainability, and sustainable energy solutions.” They investigate how we are “going to get out of this mess we’ve put ourselves in by burning too many fossil fuels.” Sustainability is the overarching theme. After the weeklong summer institute, the students meet four consecutive Saturdays to “see sustainability in action” by going on tours of various sustainable businesses in the area.

Jane said she was interested in participating in the CFG in order to connect with other teachers and learn from them, as well as learn what EcoJustice education is and how it may enhance her work as a sustainability and science educator. I had met Jane at a conference three years prior to the study, but had only exchanged a couple of emails before I asked if she was interested in participating.

Madge. Madge is a 5th grade science teacher at a suburban, independent K-8 school. She previously worked as a science teacher at a public middle school and has over 15 years of teaching experience. She began her career as a scientist in a molecular lab “doing research, writing grants, and publishing papers.” She became “very cognizant” of the environmental factors that would affect the lives of her young children, so she joined the boards of two environmental groups where she lived and “became

environmentally and politically active.” Part of this activity included volunteering in local elementary schools, and she was eventually offered a position as a science teacher. She discovered a “passion for sharing with the kids” and wanted to help them “recognize the value of our environment” and how their choices affect the planet and each other. She is also passionate about “empowering them” so they make a difference in the world.

Madge said she was interested in participating in the Critical Friends Group in order to learn about EcoJustice education and see what kind of new directions she can take her teaching. I had met Madge four years prior to the study, even meeting once to talk about the work she was doing with her students around sustainability. She had also been a student of mine in a graduate class two years before the study began.

Brent. Brent is a community garden co-manager and nutrition and cooking teacher for an urban non-profit organization, a position he had for about a year at the time of the study. “The purpose of the garden,” he said, “is to make nutritious healthy food more accessible. It’s to educate people about growing and cooking healthy food, and it’s about building community.” The non-profit organization is dedicated to ending hunger in the community and has three areas of focus. Brent explained:

One of those being food recovery and redistribution, which is how they started in the late 80s. So they have a warehouse and a distribution center. So they're just taking food that otherwise would be thrown away and then bringing it to churches and kitchens and community centers and stuff like that. That's one side. The other side is the culinary job-training program. They teach individuals

that are having difficulty finding employment. They teach them culinary skills and sort of ease their transition into a job as a chef or caterer or whatever. And then the third side is what I'm involved with, which is nutrition, farms, and gardens.

His work primarily involves helping teens maintain the garden, prepare food once it has been harvested, and develop leadership skills. Brent does not have formal training as a teacher, though he has participated in “five to eight” workshops on environmental education and several training sessions at other area organizations dedicated to giving children meaningful experiences outdoors.

Brent wanted to participate in the CFG in order to further explore “the notions of ecological justice and social justice and environmental justice.” In addition, because of “an external and an internal tension” between the largely African American and Latino community and the European American staff, Brent was eager to learn more about why that tension existed and how it might be overcome:

There's cultural barriers and there's social barriers, and I feel like I don't know enough about that. And I have had this discomfort about what we're doing sometimes because I feel like we're sort of operating out of a place of ignorance to a lot of that. So I'm really intent on gaining more understanding about that and having discussions about it, meeting others who care about that because I think the success of the garden kind of hinges on our ability to understand and be sensitive, essentially, to the environment we're working in and to the neighbors who are ultimately, you know, supposed to... the intention is for the

neighbors to inherit the garden, basically.

Brent also wanted to meet new people that have similar interests and to network with other educators. I did not know Brent before the study took place. He responded to the mass email I sent to the environmental educators listserv.

Eric. Eric has been a social studies teacher at a suburban, public middle school for three years, but before that he was a science teacher at a different suburban school for seven years. His undergraduate degree was in science, but aside from one course on the environment he has had no training in environmental education. He described the themes he covers in his social studies classes as reflective of that environmental stance: “Humans interacting with each other and interacting with the environment and interacting with their ideas. I constantly try to push that. That’s why we’re here. We’re here to learn about human beings and how we interact with what’s around us, the nonliving and the living things, and the ideas we have and what we do with them.”

Eric was interested in joining the CFG because it was an “opportunity for collaboration, for getting ideas and feedback, and for personal gain.” He said, “I hope this is just another step in my evolution of trying to each year do a little bit better. I feel like this year I’m doing it better than last year. I hope that next year with this experience I’ll have a lot more ideas. And the cool part is you know you’re doing better because you see the kids responding better or getting more into it.” I had known Eric for a few years before the study began. He had joined a critical reading and discussion group that Clint and I started for social studies teachers in the area, and during our monthly meetings I got to know Eric fairly well.

Clint. Clint has been teaching for eight years, mostly as an 8th grade social studies teacher at a suburban, public middle school. During the study he was in the middle of his first year as an English teacher at a different suburban, public middle school. He had no formal training in environmental education and, moreover, confessed that up until recently he had not considered the environment much at all in his personal and professional life:

I can honestly say that when I was teaching social studies and pretty much up until the last few years, the idea of environmental education or ecological education was so foreign to me. The whole idea of thinking about, I mean, even just considering it other than on a very personal and basic level, I think in most cases, the idea of the environment is so removed from history and so removed from kind of modern life that in most cases, you know, I was able to live a good portion of my life without having ever considered the environment one way or another.

Clint was introduced to EcoJustice education while a student of mine in a graduate class four years before the study. He was the only participant that was explicitly familiar with EcoJustice education.

Clint was interested in joining the CFG in order learn more about EcoJustice education. "I think this probably comes along at a good point for me," he said, "because [the environment] is more important to me now, and therefore I'm looking for more ways and better ways to make it a part of what I'm doing. So you know, before this, [the CFG] might not have been appealing, but certainly today, I feel like I'm trying to

make [the environment] more of a priority in my classroom and what I'm teaching. It's definitely more of a priority in my life, too."

Abby. Abby is a 9th grade earth science teacher at a rural, public high school. At the time of the study, she was in the middle of her first year of teaching. Her undergraduate degree was in biology, and she became a teacher via a national program that places qualified college graduates in low-income schools. The school where she was teaching was located in a rural area, and she spoke of having a hard time adjusting to the differences in where she teaches and a more urban area where she grew up, like a bit of culture shock. She has a passion for science, biology in particular, and she enjoys sharing that passion with her students.

Abby was interested in joining the CFG in order to learn how to bring a more critical perspective to her teaching. She tried to teach about environmental racism at one point in her earth science class, but the students did not respond well. She was eager to learn how to be a better, more effective teacher.

Justin. Justin has been teaching middle grades science for over 15 years. For the past seven years he has been teaching at a suburban, independent K-12 school, but before that he taught at an urban charter high school and at a science museum. He has had no formal training in environmental education.

Justin said he used to focus his teaching on preparing students for high school, but that in the last couple of years he has tied the biology and chemistry and physics content to an environmental theme throughout the year:

So each time, the biology turned into ecology and how everything interrelates,

and some of the social issues that connect with that, like our role and our impact on the environment. And we're doing chemistry and we always keep looping back to environmental-type issues like pollution, water use, natural resources, stuff like that, and then with physics we look at our energy consumption and the impact of that and the choices that we make and energy sources that are available and pros and cons of those things.

Justin said this environmental theme resonates with his students because they are not only learning science but also about social, political, and environmental issues that affect their lives and community.

Justin wanted to join the CFG in order to “get exposed to some new ideas and maybe connect with some other teachers who are doing some interesting things.” He hoped to hear about other projects and opportunities that he could bring to his classroom or form partnerships and connect classrooms. He said he was also interested in reading about EcoJustice education.

In sum, there were seven educators who agreed to participate in the study. Four were male and three were female. All were of European descent. Two participants were in their first year of teaching and the other five had at least 8 years of teaching experience. Three taught in a public school context, one in a public community center and garden, one in a summer enrichment program, and two at independent schools. They all taught students in the middle grade range, from 5th through 9th grade. Their information is displayed in Table 2.

Table 2. Participant information

Name	Years Experience	Grade Level	School Context	Subject Area
Abby	1	9	Rural Public High School	Science
Brent	1	8 – 9	Urban Public Community Center	Gardening, Cooking
Clint	8	6 – 8	Suburban Middle Public School	English
Eric	10	6	Suburban Public Middle School	Social Studies
Jane	15+	9	Suburban Summer Enrichment	Science
Justin	15+	8	Suburban Independent K-12 School	Science
Madge	15+	5	Suburban Independent K-8 School	Science

Context

Six of the seven participants lived and worked in what is considered a politically liberal or progressive area of the state. That is, a majority of the citizens tended to support Democratic candidates for political office and initiatives related to protecting and preserving the environment. At the time of the study, for example, the issue of hydraulic fracturing—the process of using water, sand, and chemicals to extract natural gas trapped in the earth—was prevalent in the local news. On the one hand, hydraulic fracturing was hailed as a means to access a massive source of energy that would provide jobs and bolster the economy. On the other hand, it was regarded as terrible for the environment and local communities. The area in which I conducted the study generally opposed the practice of hydraulic fracturing.

One participant taught about 45 miles away from the others, and in a more rural

setting. In that area of the state, there was ongoing conflict over large-scale agricultural industries, specifically regarding hog farming and slaughterhouses. Here again there were different opinions on such practices, with some prioritizing the economic benefits and others more concerned about human health risks and environmental contamination. To some degree, the participants were aware of these and other local environmental issues, and on several occasions spoke of their attempts to bring those topics into the classroom.

Data Analysis

Aligned with an ecological framework, my interpretation and analysis of the central phenomena in this study was “grounded” in the data I collected. Creswell (2008) defined grounded theory design as “a systematic, qualitative procedure used to generate a theory that explains, at a broad conceptual level, a process, an action, or an interaction about a substantive topic” (p. 432). The purpose of grounded theory “is not to make truth statements about reality but, rather, to elicit fresh understandings about patterned relationships between social actors and how these relationships and interactions actively construct reality” (Suddaby, 2006, p. 636). For Charmaz (2006), “Grounded theory serves as a way to learn about the worlds we study and a method for developing theories to understand them” (p. 10). In this study I adopted the constructivist approach put forth by Charmaz (2006), where the researcher is considered part of the world that is studied and the data that is collected, and it is assumed “that any theoretical rendering offers an *interpretive* portrayal of the studied world, not an exact picture of it” (p. 10).

When all interviews and CFG meetings were completed and transcribed, I read and took notes on the data line by line. Following Miles and Huberman (1994), I broke the data analysis process down into three parts: data reduction, data display, and conclusion drawing and verification. Data reduction involved “selecting, focusing, simplifying, abstracting and transforming the data that appear in written-up field notes or transcriptions” (p. 11). I specifically noted terms, phrases, and concepts unique to each participant, what Patton (2001) calls “indigenous categories,” and analyzed how such words and ideas were utilized. After the reduction process, I organized and assembled the information into patterns and themes in order to begin drawing and verifying conclusions across participants. At this point I wrote memos (comments on transcript excerpts, emails to my advisor) in which I explored hunches, ideas, and thoughts in my search for a broader explanation of the data. This process of critical reflection and theory construction continued even as I was writing drafts of the findings.

Positionality

Throughout this research study I was especially cognizant of my interdependent relationships with the participants. I was not merely the researcher observing the participants and trying to figure them out. Rather, I was also a participant engaged in meaning making, shaping and being shaped by the discussions and interactions. The distinction between myself and the other participants was very blurry and fluid, artificial even. I brought particular values, beliefs, experiences, and priorities to each stage of the project. My “fingerprints” were inextricable and ever present.

This dissertation study emerged from my own political and spiritual convictions, convictions formed from my experiences as a teacher, graduate student, teacher educator, father, husband, North Carolinian, and U.S. citizen, among others. My views on, say, the social construction of knowledge, the role of government in public life, and human nature shaped the kinds of questions I asked and colored my interpretations of the data I collected. There are no illusions of objectivity here.

Just as I provided brief portraits of the other seven participants, I will do the same for myself. I taught 6th and 7th grade social studies and English for 11 years. I have no formal training as an environmental educator, although I started the process of becoming certified approximately one year ago. Aside from the garden I built with my students and the recycling program I coordinated for the school, I did not teach from a particularly critical or ecological stance. There were no role models at my school that illuminated the path, and I was not aware of professional development opportunities that would have provided me with guidance and resources. I possessed a conviction to be a good steward of the natural world and to convey it to others, but I struggled to infuse those personal convictions in my professional life.

While in graduate school I was introduced to the writing of Chet Bowers. There was a particular passage that resonated so deeply with me that it shifted my focus of study and, ultimately, the course of my career. He wrote:

advocates of educational reform fail to recognize that any definition of social justice that does not take account of how human demands on the natural

environment are affecting the lives of future generations is fundamentally flawed. (Bowers, 2001, p. 3)

Up until that point my reading and research focused on issues of race, class, and gender and how those constructs played out historically and currently in U.S. society broadly and in U.S. schools in particular. Bowers, however, disrupted my thinking and forced me to confront an inherent paradox in the social justice education movement. The voice of the earth was notably silenced. The sources of life and sustenance were marginalized. The machinery of the economy exploited not just people but the land and the animals as well. The EcoJustice framework brought my personal and professional convictions together.

I was, therefore, an advocate for EcoJustice in this study, just like an anti-racist researcher would advocate for anti-racist pedagogy. I offered my perspective often. I asked questions that I hoped would lead to a greater understanding. I facilitated conversations in ways that probably positioned me as teacher and authority even though I was consciously trying to let the participants lead. In so many ways I am still learning what it means to be an EcoJustice educator, to live more sustainably and in community, to advocate for justice in an unjust world. The participants were reading and discussing in order to learn about what Ecojustice is and how it might reshape who they are and how and what they teach. So was I.

Limitations

There were several limitations to this study. The first was time. While we met seven times over a five-month period, that was not enough time to process all that I was

asking the participants to read and discuss. If we had more time together, we would have been able to mine the text further, brainstorm and collaborate on projects and lessons, add other readings, let the theories and ideas marinate longer, and reflect more deeply. Future studies need to be longitudinal.

The second limitation was the self-reporting nature of the study. I did not observe the participants in their classrooms or see them interacting with their students. By not watching the lessons they talked about in person, I was unable to confirm what they were sharing in our meetings. Also, there was also no document analysis in this study. Student work or lesson plans would have provided another opportunity to triangulate data and add another layer to the analysis. In future studies I will observe the participants at work and ask that they bring artifacts to meetings.

The third limitation was a lack of diversity. While there was a range of ages and teaching experience as well as a balanced number of males and females, there was no diversity with regard to culture, language, or ethnicity. All participants were of European descent. Brent even stated in his final interview that he would have been interested to hear from more diverse voices, especially since he works in a largely African American and Latino community. Historically, the environmental movement has struggled with issues of diversity (Bonta & Jordan, 2007; Jordan & Snow, 1992). In future studies I will recruit participants from more diverse backgrounds.

In addition, it should be noted that the participants came to the study not needing to be convinced that consumerism and development, for example, were problematic. That is, they did not need to be persuaded that caring for the environment

should be an urgent priority. This study would have turned out vastly different had I selected participants at random or worked with a team of, say, social studies teachers at a local school. While the predispositions of the participants enabled me to understand more about what it means to be an ecologically minded teacher, they were also more able and ready to jump into the theory of EcoJustice than a random selection of teachers. In future research, it would be interesting to focus on how, say, a team of teachers without such predispositions understood and discussed EcoJustice.

Those limitations aside, the participants in the study were very instrumental in helping me understand more about what it means to teach for a more just and sustainable future. In the next chapter I provide glimpses into what I learned from our time together. My interpretations are partial and evolving. There is more work to be done. What follows are the seeds of my understanding.

CHAPTER 4

Ecologically Minded Teaching

Prelude

During the first interview I asked the participants to tell me about their backgrounds—more or less the factors that shaped who they were as teachers, including childhood experiences and formal training as adults. Over thirty years ago, Tanner (1980) asked environmental conservationists a similar question, to describe formative influences in their lives. They overwhelmingly mentioned activities like hunting, fishing, and bird watching. He concluded that the time they spent outdoors proved to be a dominant influence in who they became as adults. Other studies have corroborated his findings (e.g., Chawla, 1999; Corcoran, 1999; Palmer, 1993; Peterson & Hungerford, 1981; Sward 1999). In those studies, the many hours spent outdoors in natural habitats during childhood or adolescence—alone or with others—as well as the examples of parents, teachers, or other adults who possessed an interest in nature, had considerable influence on the development of environmental values in the participants.

While not the explicit focus of the question, out of the seven participants in this study, six of them talked about childhood experiences in nature when answering my first interview question. Jane, for example, said, “I was always into nature, doing stuff outside, collecting caterpillars and all that kind of stuff... I was the girl that always had goldfish and turtles and all that. I probably killed about a hundred goldfish.” Madge

had a routine after school as a child. She would come home and take her dog for a walk before doing her homework beside a creek. She developed a love for backpacking, hiking, and kayaking while in college because of her affinity for being outdoors. When I asked Eric why he was into environmentalism, he said

I think just growing up on the ocean for some reason. And always being in the ocean and surfing and having my family there on the ocean being on sailboats, growing up in the Caribbean. I think I was just a product of nature. I didn't watch TV. I played on the rocks and the jungle, wherever I lived. Maybe that's what had to do with it.

Clint grew up near the Great lakes and during the summers he stayed in a family cabin located on over a hundred acres of land. "That was sort of where I learned the wild, so to speak, and being in nature," he said.

Justin spoke at length about his early experiences outdoors. When he was eight years old, his family moved from a large urban city to a rural region of the southeast. "It was just rhododendrons, mountains," he said. He became, in his words, "a free-range child. My parents would just open the door in the morning, let me in at night, and we'd just play in the woods all the time." At a summer camp he met a guy who was very into nature:

He had this little nature hut and catch snakes and collect things, and he'd take us out and I remember it was that first summer I was eight, he took us to a bog up in the mountain... and he said, "I'm going to take you to this spot... and I want you to explore and share all your discoveries with each other." I remember just

being kind of like, what? Then he just talked about ancestors and people and evolution and that kind of thing and then just let us loose. For an hour, we crawled around this bog... and we found all kinds of stuff. I remember that was the key moment for me, like wow, this is possible, and from then on, I've just been hooked. I've always gravitated toward people who were outdoorsy and stuff. There's this guy, Buggy Elliot, who's a storyteller herbalist, and I would just latch onto him when I was ten or eleven and follow him in the woods and he'd teach me all the wild, edible plants and we'd make stuff out of bark. So that kind of hooked me. I don't know, I guess somewhere along the way, I started just beginning sharing all this stuff with people, tell them stories, show my friends how to do things, go camping. We'd collect as much food as we could in the wild and just do all that kind of back-to-the-woods, back-to-nature kind of things.

The combination of time spent outdoors with people who loved nature and books about living in nature, like *My Side of the Mountain* (George, 1959) and *The Tracker* (Brown, 1978), spurred Justin on to a lifetime love of the outdoors: "So all those things kind of hooked me in and got me really interested in the natural world and being outside."

For Brent, his experience in nature came later in life, when he was in college. He spent time in France and while he was not in class he volunteered on an organic farm. When I asked what made that experience so meaningful, he said, "I found it to be a totally healing experience, farm work. So that was sort of my, like, conduit into my interest in agriculture and nature." He also called that time on the farm "an awakening"

and has been doing agricultural work ever since. That is what led him to his role as a community garden co-manager.

Like the participants in Tanner's study, six of the seven participants in my study came to value the environment—and to making the environment central in their teaching—through their own experiences in and with nature. The only participant not to talk about experiences outside was Abby. Instead, she spoke broadly of her love of science, especially biology, and her desire to share that passion with others. She also mentioned that she wanted her students to understand that injustices like environmental racism were present in their community, and she hoped to teach her students about local environmental issues. Each of the participants, then, possessed an ecological identity (Thomashow, 1995). If indeed teachers teach who they are (Palmer, 1998), that finding was not a surprising one in and of itself. I expected that to be the case given that the participants self-selected to be part of a study on EcoJustice education. What was particularly interesting, however, was how their environmental values emerged in their teaching in very similar ways.

Five Practices

My first two research questions were geared toward helping me understand what kind of work the teachers did in their classrooms. The specific questions were:

- What are the beliefs, aims, motivations, and methods of the participants?
- What kind of work are they doing already? That is, what strategies, projects, and methods do they use?
- What obstacles have they faced?

During the data analysis process I chunked every instance of dialogue about teaching into two categories: curriculum and pedagogy. As I examined those excerpts more closely I noticed overlaps and patterns. Despite the varied subject matter and contexts in which the participants were working, they were all bringing their beliefs and values regarding the environment into the classroom in analogous and notable ways. A common thread for all of the participants was a commitment they shared to cultivate in their students an ecological intelligence (Goleman, 2009), an astute awareness of the relationship between humans and the natural world. What became apparent from the data was that the participants were, to use Moroye's (2009) term, ecologically minded teachers.

In her dissertation study, Moroye (2009) examined the practices of what she called ecologically minded teachers, or "teachers who are not explicitly engaged in teaching about the environment or in environmental education programmes" (p. 789). In other words, she focused on teachers who happen to teach about the environment but whose curriculum did not specifically require that they do so. In her research she was "seeking to understand how ecological concepts and themes emerged in non-ecological contexts" (p. 792). After interviewing and observing two secondary English teachers and a secondary social studies teacher, she concluded, simply, that the teachers employed a *complementary curriculum*, which is "the embedded and often unconscious expression of a teacher's beliefs" (p. 792). In this case, the complementary curriculum involved the environment and sustainability. This was true for all of the participants in my study. However, while Moroye (2009) was instrumental in

introducing this term to the literature, she failed to theorize about the commonalities among the teachers she studied or to examine how their collective practices might contribute to a better understanding of what it means to be an ecologically minded teacher. What emerged from my data was a more developed sense of what ecologically minded teachers do.

In this chapter, I paint a picture of what ecologically minded teaching looks like. As I wrote in the first chapter, one of the greatest challenges of the 21st century, if not *the* greatest challenge, is to figure out (or recover) how to live in balance with the planet, how to restrain the human conquest of nature. Like Goleman, Bennett, and Barlow (2012), I believe that “school communities are the ideal places—and educators the ideal leaders—to guide a breakthrough to a new, enlivening, and much needed ecological sensibility” (p. 8).²⁹ To be sure, teachers should not bear this responsibility alone. There must be a concerted effort among all political leaders, community organizers, and clergy as well as everyday citizens to bring about more just and sustainable relationships between humans and nature. The work in schools and classroom, though, may take on a unique form. In order to cultivate the attitudes, values, and behaviors that will contribute to this transformative cultural renewal, we need to know more about what it is that teachers can do. Based on the data I collected, I identified the following five interrelated practices that comprise ecologically minded teaching:

- Making visible the externalities of the materials economy

²⁹ I recognize that ecological sensibility is not new. Some traditional, Indigenous cultures have lived in embedded and harmonious relationships with the larger living world for centuries.

- Creating engaging learning experiences
- Providing multiple perspectives
- Asking critical questions
- Partnering with community members and parents

These five practices were not evident all of the time in all of the participants, to be sure.

What was common across all participants, even across the different contexts in which they worked, was the commitment to helping students become more cognizant of the ways in which humans are affecting the environment and vice versa. In what follows, I describe, using the words of the participants as much as possible, the practices of ecologically minded teachers.

Externalities. First, ecologically minded teachers make visible the negative externalities of the materials economy. Externalities are side effects or unintended consequences associated with the production, consumption, and investment decisions of individuals and corporations. Pollution is an example of a negative externality. A corporation bears the costs associated with production but not the effects, or social costs, of the pollution generated from that production. In Leonard's (2010) words, "while companies are busy producing and selling widgets, they're not paying for, or even tracking, the side effects they cause, like contaminating groundwater, exposing communities to carcinogens, or polluting the air" (p. xx). The materials economy is a phrase utilized by Leonard (2010) to describe the life cycle of everyday products, a life cycle that includes extraction, production, transportation, consumption, and disposal.

Jane, who conducts workshops for science teachers and coordinates a summer program on climate science for 9th grade students, asks her students to track “the whole life cycle” of a product “from raw materials all the way through” to its disposal, “and they have to think about how much energy it takes and where that energy comes from.” Examples of products range from iPods to footballs to t-shirts. She elaborated on a t-shirt activity, telling us that her students had to evaluate the sustainability of “an organic cotton t-shirt, a locally produced cotton t-shirt that was not organic, and a t-shirt made out of recycled plastic bottles.” After her students mapped the environmental, social, and economic impacts of those three different kinds of t-shirts, she asked them to “decide which one they would purchase.” Jane also mentioned that she discussed with her students that the best option might be to not buy a t-shirt at all, and that “what’s right might be making an informed decision.” As part of this exercise, Jane stressed to her students the need to know about the social, environmental, and cultural costs, or externalities, associated with the production of t-shirts, which must become part of the decision-making process.

Justin, an 8th grade science teacher, also used t-shirts to teach about externalities. He shared how he merged the topics of ecology and chemistry into a unit on consumerism. “We mostly looked at case studies,” he said, starting with “the story of the t-shirt.” Similar to Jane, Justin asked his students to “follow a t-shirt from its origins” to “when you get it and then when it goes into a secondhand store.” His students researched where the materials in the t-shirt came from and mapped the journey those materials took before arriving in their hands. Students also had to

account for “the pollution and the hidden costs” associated with the entire process. After they finished exploring the journey of a t-shirt with his students, they were asked to do the same for another product. His students selected items like mascara, a baseball glove, tennis shoes, a Hershey’s chocolate bar, and electrical tape.

Teachers like Jane and Justin teach their students that there are social, cultural, and environmental costs associated with the materials economy. In these cases, by having their students investigate the life span of an everyday product, they make the invisible costs more visible, they make the links between consumption and its consequences more obvious so that students are better equipped to make choices.

Engaging Experiences. Second, ecologically minded teachers create relevant and engaging learning experiences for their students. None of the participants spoke of lecturing or transmitting large amounts of information to their students, which Clint referred to as “that banking model of education,” harkening back to Freire (2000). Clint described this philosophy well, explaining, “It’s not about the teacher having knowledge and giving that knowledge to students.” He continued:

I want kids to want to learn and to value learning and so I think, philosophically, if you create a classroom where ... you can make learning fun for them, then they’ll want to keep doing it and if you make learning not fun for them, then they’re less likely to enjoy the experience and if they’re not able to enjoy the experience of learning, they’re not going to want to keep reading, they’re not going to want to keep questioning, they’re not going to want to keep thinking

about things and they're much more likely to allow their lives and their ideas to be dominated by other people.

Clint was not the only participant to adhere to this belief. They all shared, to some degree, lessons, units, and projects that required authentic and meaningful application of information, active participation, critical thinking, and communication skills.

Eric described a social studies lesson in which his 6th grade students "were role playing different human beings that would be affected" by a particular resource like coffee, gold, trees, or coal. He explained:

They were having like a little town meeting playing out that role. You know, like, one was a monoculture coffee farmer, [another was] a shade grown coffee farmer, then we had a middle man, the buyer, and then we had the coffee shop owner. They just had to talk about sustainability.

Similarly, Madge, who teaches 5th grade science, spoke of using project-based learning and teaching "from the standpoint of sustainability." She liked to start the year off by asking her students to define "what they thought sustainability was" and throughout the year facilitated various projects "based on what the kids chose, what direction they were interested in." Madge required her students to submit proposals of projects they wanted to pursue, and she worked with them to set goals, access resources, and meet deadlines. The proposal also required an educational outreach component, so students had to figure out how to use their project to teach others in the school or community about what they were learning. One group of students, for example, was interested in building a nature trail on school grounds. "They actually went and identified, you know,

native plants, and [researched] how the trail should be [built] so [it] had the least impact on the environment. We built it.” Another group of students was “interested in composting [so] we built a compost bin.” When it was completed, they showed their bin to other students in the school and explained what it is used for and why composting is beneficial to the environment.

Similarly, during the summer, Jane runs a weeklong program for 9th grade students focused on climate science and community leadership in which students “learn all about climate change, energy, sustainability, and sustainable energy solutions.” They investigate how we are “going to get out of this mess we’ve put ourselves in by burning too many fossil fuels.” A part of the summer program includes a community outreach project. The students are asked to create an action plan in which they outline how they could educate others about living more sustainably. After the weeklong summer institute, the students meet four consecutive Saturdays to “see sustainability in action” by going on tours of various sustainable businesses in the area, thus allowing them to consider real solutions.

Because he works in a community garden, Brent utilizes “agriculture as a teaching tool.” Along with his colleagues, he has been “coming up with gardening education curriculum,” which is an ongoing creative process. The non-profit organization offers “a young farmer in training program” as well as nutrition and cooking classes. Brent shared his involvement with a cooking class: “My role in that cooking class is to, like, connect the food to the garden, whether that means harvesting with them and then bringing it to the cooking classes and cooking it, or just, like, making

them realize that you can eat stuff that grows and, you know, a vegetable is part of a plant.” Brent’s context allows for the students to play an active role in the gardening process and in the preparation of food.

Clint shared with the group his plans for a unit on food for the upcoming year. Since his 7th grade English students would be in his 8th grade English class the following year, he decided to include them in the planning and preparation. He wanted to write a grant in order to obtain funds to buy a class set of the book *The Omnivore's Dilemma: The Secrets Behind What You Eat, Young Readers Edition* (Pollan, 2009) and to take his students on a field trip to a local organic farm.

So I showed them the grant questions. I showed them the introduction of this book. We watched the trailer for the movie *Food, Inc.* Then we talked a little bit about what we’d be studying over the course of the unit and I had them work in groups on the questions for the grant. I went around helping them and I took it all home and typed it up. In the end we ended up with something I think is, you know, really cool and something to be proud of even if they don’t end up getting [the grant].

His students were writing for an authentic audience, which served a real-life purpose.

The lessons, units, and projects that the participants shared involved more than presenting trivial bits of information to passive recipients. Instead, they created learning experiences that focused on real-world, complex problems and their solutions. Eric, Madge, Jane, Brent, and Clint used role-playing exercises, school-enhancement projects, and hands-on activities to engage student interest. They also provided

opportunities for students to interact with and present information to real audiences. These types of engaging experiences required students to learn and utilize skills beyond accessing information. These experiences also required teachers to act as facilitators. In these cases, the teacher was not “the sole possessor of the information” (Brent) rather “there’s that interplay, more like the sharing of the knowledge” (Brent) between student and teacher.

Multiple Perspectives. Third, ecologically minded teachers help students see multiple perspectives. That is, they encourage students to consider viewpoints that differ from their own, evaluate the similarities and differences, and understand that negotiating diverse beliefs and values is inherent in democratic life (Gutmann, 1999; Hess, 2009). As Clint explained, it is important “to create some kind of democratic process and structure, a way to share ideas, a way to understand conflict and understand perspectives and appreciate other people and other perspectives, cultures, in the classroom.”

For example, Clint covered the Industrial Revolution as part of a course on U.S. history. At first he would teach about the benefits of industrialization. He would be “the cheerleader” and “spend the whole day talking about how awesome the Industrial Revolution was, and all the great things it brought us.” But then he would switch gears and present “the opposite ... the drawbacks and the problems.” The next step for Clint was to help his students to process all that he presented. He asked his students to “write a paragraph that brings in both benefits and drawbacks,” to acknowledge that the Industrial Revolution delivered both notable advances and efficiencies as well as

environmental and social problems. His goal was not for the students to come to a definitive conclusion about whether the Industrial Revolution was good or bad but for them to see that time period as a mixture of both: “In the end, if they think [the Industrial Revolution is] the worst thing, they do have to acknowledge that there might have been a few things that made life easier. At the same time, if they had never considered a drawback before, now they have to acknowledge that.”

Like Clint, Justin teaches students that there is no single story or perspective but multiple and conflicting ones. He sometimes splits his students into two groups and requires them to present two different sides of an issue, or, in his words, “have a debate where one side has to take one side of an issue, whether they agree with it or not.” He said, “This is good practice just in general, learning how to form an argument, gather your facts, support your statement. Whether you agree with it or not it’s a good exercise.” An example he gave was when his students debated fast food versus local food. Some of his students were not too keen on taking a particular side, but he insisted that doing so was good for them: “It [was] better for [the students] to take that side because it’s a way of thinking they don’t normally think.” By requiring his students to defend or take seriously perspectives that are foreign he created the possibility for them to think outside their own sense of normal.

Several of the participants use what we called “take a stand” activities. In short, the teacher reads a statement, one that could be perceived as controversial, and the students move to different spaces around the room that represent whether they strongly agree, agree, disagree, or strongly disagree with the statement. There is also

space for students that are unsure or undecided. By moving to one part of the room, the students are asked to “take a stand” and declare what they think. Justin shared a document with the group that contained a list of prompts he used with his 8th grade students for this activity. Some examples were:

- We barely have enough food to feed everyone in the world. Everyone should eat vegetarian and stop feeding grain to cattle and pigs.
- We should spend more money on the space program so that we can colonize the moon, Mars, and other planets so that we will have somewhere to live when Earth is all used up.
- It is important for individuals to make their own choices about how they want to live their lives and to be able to do what they want with the land that they own. The government has no business telling people what they can and cannot do.
- Survival of the fittest means that only the best, most genetically fit individuals will survive, creating the healthiest populations of species. Modern medicine prevents this from happening and as a result humans have become weaker and more unfit. This is ultimately not good for humans.

For Justin, these prompts enabled him to delve into the different perspectives of his students and help them process and evaluate why they think the way they do about particular issues, especially issues related to the environment.

The participants are training their students to understand that there are multiple ways of viewing reality. This is an important step in teaching for a more just and sustainable world. Building the capacity to see from multiple perspectives allows

students to enter into the complexity of ecology, to understand that life and culture and economies are complicated, and that there is not usually one right way to think or live.

Critical Questions. Fourth, ecologically minded teachers ask critical questions. Eric wants his students “questioning the world.” Critical questions are similar to essential questions in that they address big ideas and are not answerable with finality in a brief sentence (Wiggins & McTighe, 2005). They stimulate thought, provoke inquiry, and spur more questions. As Madge explained, her students are “always asking questions, making observations” and then from those questions and observations formulating different, new questions. It is a continuous process.

Lattimer (2008) offered the following examples of critical questions for use in a social studies context: “Should there be limits on personal freedom? When is violence justified? Do we have a responsibility to help others? Can we have both liberty and security? Is it better to work together or alone?” (p. 326). Questions like these challenge students to examine their own beliefs and prepare them to deliberate in a democratic society. For ecologically minded teachers the critical questions direct students toward thinking about ecology, sustainability, relationships, and culture.

Jane shared how she used critical questions with her students. She spoke of writing “signs of environmental degradation” on the board and asking her students to brainstorm any evidence that they know about or see or experience connected to environmental degradation. Once a list was generated she asked, “Why are we having these problems?” She also followed up with other open-ended questions, like, “What is causing air pollution?” And then, “Why are we burning coal?” or, “Why do we

have cars?" These kinds of questions helped her students think more deeply about why the environment is being degraded and then, ultimately, to consider if there are alternatives to burning coal and driving cars, and the benefits and drawbacks of those alternatives.

Clint has also used critical questions in his 7th and 8th grade English classes. At the beginning of the school year, for example, he asked his students to write "a paper about what home means to them." Since it was his first year at that school and with these students, he saw such a prompt as a means of "getting to know them a little bit," their personalities as well as their strengths and weaknesses as writers. In addition, it was "something that's really abstract that they can attack in their own way." Clint noticed a pattern when students were sharing what they wrote: "What [I] started to realize is how many people were writing about man-made things, not anything that was outside of a man-made structure. Some of them said, like, school is my home. Another kid was like Taco Bell is my home." This prompted Clint to probe further: "I had them raise their hand if there was anything in their paper that was of the environment. Did anybody mention trees? Did anybody mention landscape? Did anybody mention animals? Anything like that?" This "led into a discussion" about why so few, if any, wrote about the natural world and, later, to how those in the U.S. today view homes versus how Native Americans might have in the past. Clint said, "It was one way that I could just kind of question something that was really basic for them, that seemed really simple but, you know, complicated a little bit." By probing further, Clint was implicitly

asking his student to consider another critical question: Are humans disconnected from nature?

At a subsequent meeting Clint shared how he works with his students to analyze texts and stories for deeper meaning, which also included the use of critical questions.³⁰ He used “the woods” as an example of a cultural symbol:

Even without saying something, if a character goes into the woods that would very often mean danger. And if you think about that as a cultural trope, if going to the woods, a child going to the woods by themselves means danger, there’s a whole lot of things within that that are represented in our culture, and those aren’t true in other people’s stories.

This representation of the woods as a place of danger is not obvious to students, he said. So he explored that with them: “Why are the woods dangerous? Why do they often represent the unknown? What’s unknown about the woods and why does that scare us?” Clint used these questions as a means to get his students thinking about the ways in which representations of the woods in literature may affect how they view or experience nature.

By focusing on the process of inquiry rather than just answers, critical questions allow students to wrestle with contested ideas and develop a deeper understanding of subject matter. Clint, Jane, and Justin used critical questions as a means to help

³⁰ Though he did not use the term, Clint was doing ecocriticism with his students. Ecocriticism is the study of the relationship between literature and nature. According to Glotfelty (1996), “Ecocriticism takes as its subject the interconnections between nature and culture, specifically the cultural artifacts of language and literature. As a critical stance, it has one foot in literature and the other on land; as a theoretical discourse, it negotiates between the human and the nonhuman” (p. xix).

students think about the causes of environmental degradation, if humans are disconnected from nature, and if there should be limits on what science makes available. In their examples, there are no single correct answers even though the teachers were directing the students to particular conclusions. The participants opened up space for students to think critically and collectively, reflect on their own relationship to the environment, and consider the consequences of degradation and disembodiedness. What they did not often discuss during our CFG meetings, however, was how they handled student beliefs that were at odds with their own. In other words, if a student claimed that global warming was a hoax, how would they respond? Did they validate that student's opinion? Would they have probed further to find out more? What did they feel was the right way to handle student perspectives that undermined their goals as ecologically minded teachers? This warrants further attention in future studies.

Through these critical questions, the participants often address potentially controversial topics like global warming or vegetarianism, and they believe that for students to fully participate and maximize learning opportunities they need to feel a sense of belonging and safety in their classrooms. If a classroom is a safe space students are able to grow, participate fully in the community, and find their voices (Greene, 1995). Madge reflected, "It's important that daily you're creating that safe environment, that all the kids feel comfortable talking." Eric provided a concrete example of that practice. One day, he asked his students to "take a stand" on the topic of gay marriage, since it was featured heavily in the news and students were talking about it repeatedly. In one of his classes, only one student held a particular belief: "The entire class in one of my

periods agreed people should be able to marry whoever they want except one kid. He was all alone, he disagreed.” Eric stated that this was “a great opportunity to look at the other perspective” but also noted that such a situation constitutes “dangerous waters.” Eric affirmed the student, noted his bravery for being willing to stand alone, and then asked to hear his point of view. After the student shared what he believed to be true, based on his understanding of the Bible, Eric asked someone else to respond. In the end, Eric said, “They were having this mature, respectful, courageous conversation.” No one changed his or her mind, but that was not the point. The students practiced voicing an opinion, listening to opposing viewpoints, and deliberating in a constructive fashion. The participants recognized the need “to make a common ground for people where there’s trust because that’s when people actually start opening up” (Brent).

Partnerships. Fifth, ecologically minded teachers seek out partnerships with community members and parents. Madge told the group that when her students are working on projects she likes “to bring in community members” to assist her and her students. For example, she contacted a sustainability group at the local university, and college students came “with a passion for the different projects I had.” One of the college students had tracked animals in Costa Rica and another had conducted research at the Jane Goodall Research Institute. Madge said, “They shared their passion. The kids were really excited.”

Not only does Madge invite community partners to assist her and her students, but she also invites parents into the classroom: “I always have parents to come into the classroom so that they know what I’m doing and they’re a part of it.” This transparency

is vital, Madge said, especially if some of the parents or community members are reticent about her focus on sustainability. At her previous school, there were community members that “would burn plastics in their backyard” and that “their religious belief was that global warming wasn’t happening because God wouldn’t let it.” Instead of letting the religious and political differences paralyze her efforts to teach about sustainability, Madge invited them in to talk and observe. “I always accept different kinds of substantiated viewpoints,” she said. “They were happy to sit down and talk and they came in and watched and they left with a positive perspective.” Madge models a very open and democratic approach to teaching. Not only is she not “going it alone” by inviting others to partner with her in her work, but she also seeks to build allies in the school and the community by being honest and transparent and willing to listen to opposing viewpoints.

There were other examples of partnerships the participants mentioned, too. Eric shared with the group a unit on human migration based on the work of geneticist and anthropologist Spencer Wells. Inspired by a colleague at another school “who just calls and writes interesting people and tries to get them to talk to his kids,” Eric contacted Spencer Wells:

I thought, well, let’s just call Spencer Wells and tell him to come to our class. We did that and like a day later they emailed back and said Spencer’s not going to be [nearby] anytime soon but he’ll be happy to Skype with you.

And he did. Eric and his students gathered in the school library one morning for a half-hour question and answer time with a renowned scholar. Eric also stated in his

interview that he partnered with a university professor to develop a unit on the Landless Workers Movement in Brazil. The professor had conducted research on the movement and had spent years living in South America and shared her work with Eric's students during their unit of study.

Partnering at the school level was evident as well. Clint, for example, spoke of working with the social studies teacher when writing the grant proposal. He wanted to see if there were ways she could support his effort to teach their students collaboratively about food, perhaps with some study of the history of agriculture. Justin, too, partnered with a team of teachers. At one of the meetings he and I spoke for a few minutes before everyone else arrived, and he shared that the middle school teachers at his school organized a field trip to the local science museum. There was an exhibit on the social construction of race, and the teachers felt that the exhibit would mesh with the literature their students were reading on civil rights, race, and identity. He explained:

It seemed like a cool thing to try and incorporate into get all of the middle school to go to... kind of a shared experience, and then see how sparked stuff into classes, you know, kind of discussions and things like that. The 8th graders are studying civil rights and *To Kill a Mockingbird*. There were some connections there, and the 6th graders are reading *Roll of Thunder, Hear My Cry*. I think the 5th graders are reading a book called *Bud Not Buddy*. So there were some connections there and they thought, "Oh, this is cool. It could be a theme." And then there were things that kind of came up so far throughout the year that

we're able to kind of loop back into it. Like the 8th graders went on a field trip and saw the "The Loving Story," you know, the documentary about... this couple in Virginia who were the Lovings. He was white. She was black. The state of Virginia said no you can't do that. So it was a documentary about that... they went and saw that. So it was all these connections that kind of looped in and kind of informally became a little bit of a theme this year.

Instead of viewing their work on identity and race as isolated within their classrooms, the teachers at Justin's school collaborated and provided the students a shared experience at the museum.

These examples of partnership are in contrast to the historically isolated nature of teaching in the U.S. (Little, 1990; Lortie, 1975; Rothberg, 1986). The participants revealed the ways in which they have reached out and collaborated with others—parents, community members, scholars, and colleagues—to provide rich and meaningful learning experiences for their students.

Challenges

The degree to which the participants were able to be ecologically minded teachers varied. They spoke of real obstacles that limited what they wanted to accomplish with their students. In many ways they are "teaching against the grain" (Cochran-Smith, 1991) and not succumbing to an "audit culture" (Taubman, 2009) bent on reducing teaching to scripted recitation and measuring learning via standardized tests. Doing so brings inherent risks and challenges. The participants provided many

examples of the challenges they face. In what follows, I share, based on the data I collected, the most salient.

Resistance. One particular challenge the teachers faced was dealing with the resistance from parents and colleagues. Abby, who teaches 9th grade science, commented in our first meeting, “There’s so much pushback from my students and other teachers and the administration.” She explained that she “rewrote the pacing guide for earth science” but that “they asked me to take out a lot of the parts” that dealt with evolution and climate science. At a later meeting she shared that she “tried to do a little bit of environmental racism reading and kind of facilitate that discussion” with her students. “Parents called me about it,” she said. “There was just like, so much pushback.” There was also pushback when Abby introduced evolution: “My students were like, you don’t believe in God? What’re you doing?” Abby felt like her efforts to teach about environmental issues were being thwarted by multiple people.

Eric also talked about the resistance he experienced. During the first meeting he pointed to a passage in the text that mentioned Earth Democracy, peace, care, and compassion, then said, “I had a parent furious with me because I had the word compassion on my syllabus.” The parent accused him of political indoctrination. Because of this opposition, Eric struggled to figure out how to get parents and colleagues to “buy in” and not oppose teaching about environmental responsibility, social justice, and global citizenship. He referenced a teacher he works with who “lightheartedly makes fun” of him. She has said that his class is “all local” but that she is all about Wal-Mart and is not ashamed. To her, cheaper prices are what matter most.

While this teacher did not prevent Eric from teaching what he wanted to teach, she contributed to his feeling of isolation in the school. Eric's examples resonated with the other teachers in the group.

The Dominance of the Banking Model. Freire (2000) critiqued traditional schooling for following the banking model of education, which is when teachers "makes deposits" that "the students patiently receive, memorize, and repeat... the scope of action allowed to students extends only as far as receiving, filing, and storing the deposits" (p. 56). When students are subjected to this kind of schooling, they become conditioned to accept whatever information they are given and relay it back again (Giroux, 1981). There is little, if any, reflection required on the part of the student. Thinking deeply is not required.

Clint mentioned the difficulty of getting his students to think deeply, in part because they are not accustomed to doing so. "You have to really present some really tough questions, some really problematic questions," he said, speaking about the nature of critical approaches to education. "And kids are going to default to a lot of things they've learned before," like what their parents have told them, for example. "In normal interpersonal conversations people don't ask you your values," he continued, so students are not usually comfortable sharing what they really think about something. That keeps conversations "usually pretty surface kind of stuff." It takes a lot of practice, he said, to get his students to where they feel capable and confident enough to think and talk about ideas and issues that are often abstract and, furthermore, may cause them to question what their parents or other loved ones believe.

Abby experienced the same sort of challenge. She said repeatedly that her students seemed unprepared to have meaningful and respectful discussions: “My students have never been given the opportunity to actually talk about things. They don’t really understand how to navigate through those conversations.” Later Abby reflected, “I just keep thinking about the skills that my kids need in order to even have these conversations.”

Student Hardships. Clint pointed out that some of his students have experienced tremendous hardships in life, which affects how they think about others and the environment:

I’ve had students from, I guess, less advantages that are often saying, “I don’t give a shit about an animal.” Or, “I don’t give a shit about a woman.” Or something else because they’ve been abused, right? They’ve grown up in abuse so they’re finding a way to abuse someone else in order to assert their dominance so they’re not at the bottom anymore. And I feel like for a lot of kids, for them there’s only a few things that they can control but that might be one of them. If I’m a boy and I’ve grown up in this kind of, this violent culture, then yeah, the first thing I’m going to do is try to make sure that I’m not the one at the bottom. And so for some of my kids I haven’t seen that kind of empathy from them because that’s a sign of weakness. And that’s a sign they are being dominated or oppressed or something else. The lashing out I feel like is such a psychological byproduct of oppression itself. But they don’t see it that way, and I don’t know if you can help them see it that way.

Eric concurred: “So, if you’re a kid who already has a lot of problems, why would you need another bucket of guilt?” While Clint recognized that life situations that may hinder students from engaging in conversations that require empathy and critical reflection, he did not suggest this was reason to abandon the effort or simply blame the students. But he acknowledged that those factors make it quite difficult to “create a classroom where you can have a real conversation, where your students feel comfortable writing their feelings and emotions and opinions.”

Tension. When Madge talks to her students about the ways in which humans have degraded the planet, she said there is a definite tension between informing and alarming students and informing and empowering them. She said it takes work to help kids understand that they have the power to act in positive and helpful ways. Her aim is to foster a sense of responsibility toward nature and others as well as a sense of empowerment: “We need to help them gain an appreciation for the natural world around them and how their choices and decisions and impact them. They can make a difference. It’s a sense of empowerment, that what you do makes a difference.”

Clint agreed with Madge about the tension. He reflected that when we ask kids to start questioning that which they assume to be true or real or safe, they might not be ready to handle the anxiety that may follow. If we are not careful, Clint continued, students “may go home and cry because, you know, of what Europeans have done, and they go home and cry because of climate change, and, you know, all the adults screwed the world for them and now they have to inherit a mess. It’s heavy stuff for kids.” It is important, he said, to communicate to students that action is both necessary and

possible: “We have to do things differently, but not because we’re so freaked out about all the problems. We have to do things differently because there’s a better way.”

The First Year. It is important to note that more than any other participant, Abby, the only first-year classroom teacher in the group, talked the least about the successful practices she may have engaged in and the most about the obstacles she faced and the factors she felt limited what she wanted to accomplish with her students. Those obstacles reflected, among other things, a mismatch between Abby’s own beliefs and those of her students. She commented, for example, “My students and other teachers seem like they have this understanding that these resources that we’re using [like fossil fuels, trees, etc.] are here for us to use so why shouldn’t we use them.” Abby discovered that many of her students believed “global climate change is not really true.”

She also mentioned her students’ lack of background knowledge, which she suggested limited her ability to engage her students in conversation: “A lot of my students are so far removed from nature that I don’t even know that they have an understanding of other animals in general. Like, even with our conversations on symbiosis and, like, different animals that have symbiotic relationships, or what a symbiotic relationship is, they lack the prior information about animals” that would enable them to quickly grasp the concept and contribute to the discussion.³¹

The challenges Abby faced are in some ways similar to those of her ecologically minded peers. However, her deep sense of frustration about these challenges and their

³¹ It was hard to determine if Abby was communicating a deficit perspective of her students, that the problem lied with them only. Since she shared that at the first meeting, I did not follow up with her at the time.

centrality throughout her contributions during our discussions suggest that these are also challenges common to first year teachers, particularly in high-needs schools.³² The first years of teaching have been described as a “lost at sea” or “sink or swim” experience (Ingersoll & Strong, 2011). Beginning teachers often struggle with subject matter, student cultural differences, planning, instruction, and assessment (Feiman-Nemser, 2003). Hammerness et al. (2005) highlighted three problems in learning to teach: the “apprenticeship of observation” (Lortie, 1975), the “problem of enactment” (Kennedy, 1999), and “the problem of complexity” (Jackson, 1974). In sum, new teachers are faced with a host of complex challenges regardless of content and context. Abby was not immune from these challenges.

Personal Cost. On a couple of occasions the participants identified that it can be a struggle handling the heaviness of the topics they are reading and teaching about. Clint, for example, mentioned that the deeper into an issue he gets, like the local food movement, the more complicated his life and his work becomes. While he wants his students “talking about why local food is good,” the next step is to “talk about why local everything is good in a way.” He said, “The more I look into issues of sustainability, the more I have to carry with me a lot of problems that I see all around me. And not just what I do but also, like, what people I love do and people I respect do. And so it becomes one of those things that’s really hard to turn off.” Eric agreed. The more he “gets into it” the more he questions his every decisions, from the food he eats to what he buys at the store. And this constant critical analysis of every decision adds layers of

³² Abby was purposefully placed in a high-needs school as part of her non-traditional route to teaching

guilt and even shame. In an email exchange, Clint shared a little more about how it feels to “get into” the issue of sustainability more deeply. He wrote that he encounters mixed emotions:

I am getting serious about changing my personal behavior to match a new understanding of sustainability, which is empowering and exciting. But at the same time, I still feel that I lack a serious connection with the nonhuman world, something that I have only recently recognized and have been working slowly to overcome. With that lack of connection also comes an incredibly high level of ignorance, of which I am ashamed.

In addition to feeling ignorant and ashamed, Clint also wrote about fear: “Fear also sets in when one begins to look seriously at the fate of our culture.” He admitted that it is a struggle to balance his “fear of collapse” with “a hope for a more sustainable existence.”

The challenges ecologically minded teachers face were not uniform across all of the participants. Despite the varied contexts in which the participants worked, they all experienced challenges of some kind.

Flashback

Four years ago I was conducting research for a graduate class. My participant was a sixth grade social studies teacher. I knew him well since I served as the teaching assistant and instructor in his Master’s program. He cared about living simply and sustainably in his own life, and he tried to bring that to into his classroom. For example, he made a poster that listed, in bold black lettering, four guiding questions for the school year. One of them asked students to think about how they might reduce their

ecological footprint as part of their responsibility as global citizens. I spent hours in his classroom observing him teach, listening to his students, and even interacting in some of the lessons.³³ After analyzing the data, I wrote that he was a big picture thinker, that he helped his students see connections across disciplines and across time, that he was an ecologically minded teacher. He did not do much else related to the environment, really. He covered some historical events that were fairly standard even if his take on them was unique.³⁴ Yet I still saw him as an ecologically minded teacher, a phrase I used repeatedly in my class paper. At the time Moroye (2009) had not yet published her article on ecologically minded teaching, yet my sense of it was very similar to hers.

A year later, at a state social studies conference, I led a session on what ecologically minded teachers do. It was not based on what I observed in any teacher's classroom. It was based on what I had been reading on EcoJustice education, place-based education, and environmental education. Some of the actions I theorized about included cultivating an ecological identity in students (Thomashow, 1995), identifying ways of thinking that injure and exploit other people and places (Gruenewald, 2003), expanding experiences beyond the classroom (Knapp, 1996), and studying local culture, community issues, and nature (Smith, 2002). I think the attendees thought these points sounded good. Many were taking notes and nodding their heads. But I am not sure

³³ One lesson in particular stands out. He led a Socratic seminar on the dominant values of U.S. citizens. At one point he asked the students if the values they were discussing contributed to environmental problems.

³⁴ He used a study of the Holocaust to address bullying and activism.

what they could do with anything I told them. I offered no examples, no challenges to think about, and no resources. Again, that was as far as I could go at the time.

Honestly, I did not think much about ecologically minded teaching again until I was analyzing the data for this dissertation study. My focus was on the third research question, which I thought was most important—how the participants made sense of EcoJustice education. At one point, while I was heavily into the data and trying to make sense of it, I remembered the conference presentation and pulled up the document on my computer. I scratched my head and laughed to myself. My participants provided more of what I was looking for years ago. They were telling me what it is that ecologically minded teachers do.

Reflection

A national organization devoted to supporting and advancing education for sustainable living posted the following questions in an advertisement for an upcoming conference: *How can educators help students respond creatively to the environmental crises they see around them? How can teaching and learning advance academic achievement, address today's important ecological challenges, and help develop strength, hope, and resiliency in young people?* Answers to these questions can be found by talking with teachers, like the participants in this study, that are figuring it out, that are daily working with students to cultivate the habits of heart and mind that will lead to a more sustainable and just future. As ecologically minded teachers, they offered some important insight into what the work looks like.

And yet, at the same time, the participants only offered a partial vision of what is possible or necessary. Further study of ecologically minded teachers may reveal other practices that enhance or even contradict what I have found in this study. For example, other ecologically minded teachers may prod students to be future-oriented thinkers, asking questions and creating lessons geared toward envisioning a world without, say, gas-powered engines, massive militaries, or poverty. They may teach thematically about empathy or compassion. They may illuminate community decision-making processes so students know how to advocate for change using the political avenues that already exist. They may focus more on local issues than global ones, or examine the ways the global and local are intertwined. Instead of teaching solely about global warming, for example, they may place more emphasis on local sources of pollution. There are countless possibilities of the ways in which an ecologically minded teacher can bring to the forefront the relationship between humans and nature, how we can restore the ecological systems we depend upon for survival. Thus, more research is needed to acquire a more vigorous sense of ecologically minded teaching. The five practices I named and described in this study are the tip of the iceberg, and as I continue to talk with and observe teachers that care about preserving and protecting the environment, a more developed understanding of ecologically minded teaching will be illuminated.

In addition, there are conceivable tensions between the five practices of ecologically minded teachers I have described. For example, is teaching multiple perspectives at odds with teachers' making visible the externalities of the materials economy? Can these two practices co-exist? Are all views, even those that challenge

the teacher's commitment to a sustainable future, equal? The participants' practice of teaching multiple perspectives may need to be complicated more to make clear their intentions for doing so. The participants in this study that use "take a stand" activities, for example, were not explicit about their aims beyond creating a space for student voices to be heard. There is room in that kind of space, though, for counter narratives to emerge, perspectives that push back against everyday, taken-for-granted assumptions about what is "good" or "right" based on a Western stance. Teaching about multiple perspectives is a "safe" practice if the point is solely to listen to differences and leave out any interrogation or evaluation of views. This practice becomes much more political and potentially transformative when students are required to do more than just listen to different opinions, to critique their own beliefs and assess why they think the way they do. It is possible in this kind of space to participate in the decolonization (Gruenewald, 2003) process, but only when students are directed in that way. Is that, then, necessarily a sharing of multiple perspectives, if the teacher's perspective about the environment, about the need for decolonization, is privileged? That question needs to be explored further in future study.

The challenges the participants mentioned also warrant further investigation. In some ways, the challenges were specific to participants' individual contexts. For example, the resistance Abby faced from students and colleagues may be attributable to some combination of her inexperience and the political climate of the rural community in which she taught. But there are systemic obstacles, too, that reach beyond local circumstances. Taubman (2009) described an "audit culture" of schooling that affects

how teachers view curriculum, instruction, and even themselves. So while Abby could specifically name how her students and colleagues stifled her attempts to teach about environmental racism, there is room here to interrogate how her experiences reflect the dominance of particular ideologies that leave little room for teachers and curriculum to challenge the status quo.

There are even further questions to be asked of ecologically minded teachers. For example, are ecologically minded teachers disrupting anthropocentrism? Are they helping their students recognize the shared roots of social and ecological violence? What cultural assumptions might ecologically minded teachers unknowingly perpetuate in their classrooms? From an EcoJustice perspective, these are critical questions. As I explain in the next chapter, ecologically minded teaching is, at best, just the first step in becoming an EcoJustice educator.

CHAPTER 5

EcoJustice Education

Once you change your philosophy, you change your thought pattern. Once you change your thought pattern, you change your — your attitude. Once you change your attitude, it changes your behavior pattern and then you go on into some action.

—Malcolm X

As I wrote in the previous chapter, the participants in this study were ecologically minded teachers. That is, they possessed beliefs and values about preserving and protecting the environment that emerged in their teaching, from building nature trails and compost bins to discussing the consequences of consumerism to fostering a safe classroom environment where critical questions could be asked and answered. But being an ecologically minded teacher is not the same as being an EcoJustice educator. In a very basic sense, there are three aspects of EcoJustice education:

1. Understanding that local and global ecosystems are essential to all life
2. Challenging the deep cultural assumptions that undermine both human and more-than-human³⁵ communities
3. Restoring the cultural and environmental commons

³⁵ The more-than-human world means the natural world, in which human beings are situated, but which exceeds them and meets them as other (Abram, 1996).

As I have described it, ecologically minded teaching primarily addresses the first, less often the second and third. Ecologically minded teachers help students understand, for example, that there are consequences to mass industrialization, that economic growth might temporarily increase material wealth but will decrease the long-term availability of resources, and that there are more sustainable ways of living that prioritize the health and welfare of humans and ecosystems. For an EcoJustice educator, though, the first aspect is just the beginning. The next steps are to examine the historical and contemporary cultural roots of ecological and social crises and, even at the same time, to revitalize the relationships and exchanges that are economically, environmentally, and culturally sustainable.³⁶

Take the t-shirt lessons of Justin and Jane, for example. They had students investigate the ecological footprint of the entire life cycle, from the resources required to grow cotton for a regular t-shirt to the distance the t-shirt travels around the world to arrive in a store to be purchased. By doing this, Justin and Jane are getting their students to think about the environmental externalities, the consequences of the materials economy. An EcoJustice educator would extend these lessons further. Are the workers on cotton farms paid a living wage? In the communities where cotton is grown, do the people have access to safe drinking water or have pesticides contaminated it? The large corporations that manufacture t-shirts are known to use sweatshop labor. What are the cultural consequences of setting up large factories in

³⁶ An EcoJustice pedagogy, according to Bowers (2004), “is based on the need to conserve cultural traditions that enable people to reduce their dependence on a money economy as well as the size of their ecological footprint” (p. 56).

rural villages? What happens to local knowledge and traditions in the wake of industrialism? What are the consequences of using the metaphor “resources” to describe the natural world? An EcoJustice educator might also help students consider how clothing is made and exchanged in the commons. Does anyone know someone that makes clothing locally? How does that process compare to the globalized one? In what ways might making our own clothing contribute to the economic, environmental, and cultural sustainability of our community? So, while there were glimpses of the EcoJustice framework in the work of the participants, they primarily focused on the first aspect.

Again, in this study I set out to learn what it would mean for the participants to immerse themselves in the study of EcoJustice education. I wanted to know if reading about it and discussing it would shift their beliefs, their work as teachers, or who they are as individuals. Over the past few years I have witnessed evidence of transformation in the attitudes and beliefs in my students around issues of race, class, gender, sexuality, and ability by reading and discussing literature on culturally relevant pedagogy and critical pedagogy. EcoJustice seemed to have the potential to do the same regarding those issues as well as the environment. I also wondered if EcoJustice would be as transformative for the participants as it had been for me. By the time the study began, I had been reading about EcoJustice for a few years and was still grappling with what it meant for me as a teacher educator, a U.S. citizen, a father, and a neighbor. My desire to engage teachers in conversation around EcoJustice education was, to be honest, quite selfish. In some ways, I suppose, I offered the participants a challenging

professional development experience that I wish I had as a classroom teacher. In other ways this was an opportunity for me to grow in my own understanding of what EcoJustice education is and assess its transformative potential.

My research questions, then, were quite simple: What happens when teachers committed to the preserving and protecting the environment engage in collective conversation about EcoJustice education? In what ways might EcoJustice education enrich, extend, challenge, and trouble the work they do already? In order to answer the questions, I asked the participants to read *EcoJustice Education: Toward Diverse, Democratic, and Sustainable Communities* (Martusewicz et al., 2011), which served as the curriculum around which we based our CFG discussions. This text had just been published and was written for both pre-service and practicing teachers. As I mentioned in the third chapter, I considered the writing clear, accessible, and engaging. I wanted a text that I thought presented EcoJustice education effectively and lucidly, and that made explicit the links, for example, between racism, sexism, and anthropocentrism.

The participants responded in various ways to what they were reading, learning, and discussing in the CFG. Most often, they shared successful lessons and projects they had done before, as illustrated in part in the previous chapter. This is a common phenomenon when teachers come together in discussions of this sort (Clandinin & Connelly, 1987; Clark & Florio-Ruane, 2001). In addition to talking about lessons they taught, they also brainstormed new ones. Though less often, they also engaged the theories that underpin EcoJustice education, which included defining terms in their own words, quoting from the text, asking questions, and making personal connections to the

ideas presented in the text. In what follows, I unpack what happened during the CFG meetings as the participants explored EcoJustice. First, I delve into the format of our discussions, the CFG, revealing the ways it served, in essence, as our commons. Then I recount how the participants struggled to define EcoJustice education. Finally, I examine how the study of EcoJustice unsettled some of the participants' sense of identity, prompting in them an eco-ethical consciousness (Martusewicz & Edmundson, 2005).

The Commons

The idea of the commons has been around for hundreds of years. It refers to that which is shared freely, the assets that belong to everyone in a community, the public spaces and places that provide sustenance, security, and interdependence. There is both an environmental commons, like air and water and land, as well as a cultural commons, like religious traditions and medicinal remedies and art. It represents a site “of resistance to the expansion of industrial culture... a refuge for people... who want to base their lives on meaningful social relationships and community-enhancing activities” (Bowers, 2004, p. 52). The commons exists in opposition to privatization, and is thus continually under assault by the forces of neoliberalism (Walljasper, 2010).

The participants read a chapter on the commons, which was the topic of discussion during our seventh CFG meeting. During that time the participants shared their understanding of the commons, how they were making sense of it and how that knowledge might shape the work they do. They also talked about other relevant issues, like how computer technology is reshaping our sense of community, the prevalence of

big box stores and the movement to support local businesses, skills that kids might have that can contribute to a non-moneyed economy, and the role food plays in the commons. What we did not discuss at the time, however, was the way in which our CFG was, in a very real sense, our commons. In and through the CFG, we were, to use Linebaugh's (2008) term, *commoning*. Commoning, the verb form of the commons, emphasizes the social element of the commons, the relationships based on the expectations that we take care of one another and that some things belong to all of us. The practice of commoning demonstrates a shift in thinking away from individualism. It is a means for everyday citizens to resist the profit-driven mechanics of the market (Ristau, 2011). In our case, our commoning stood in stark contrast to typical top-down, "drive by" workshop models of teacher professional development (Hill, 2009; Stein, Smith, & Silver, 1999).

Our commons was a shared space for conversation. The participants joined this CFG—yes, a research study—voluntarily, and when they could not make it for a meeting there was no consequence. Although I was probably viewed as the hub, so to speak, as the organizer and researcher, the participants were able to direct the conversations and ask questions and tell stories, which they did. Aside from the text we were reading, there were no other requirements. There was no assessment. There were no credits given or received. They came to the meetings to learn with and from one another, to engage in conversations that they found meaningful and potentially powerful. While we were not tending a physical space, we occupied a social and political space. Our commons, then, was also a space of resistance—resistance to the isolation of teachers

in schools (Little, 1990; Lortie, 1975; Rothberg, 1986), resistance to the traditional nature of didactic teaching (Freire, 2000). In this space, the participants could talk about ways they were challenging the system. Jane, for example, could share her beliefs freely with us, whereas in her job as a state employee she could not. In her initial interview, she acknowledged that she is constrained in what she says about her environmental values: “Just like the thing where we couldn’t tell people who to vote for, but we could encourage them to vote... It’s that type of thing as a state employee.” By contrast, the teachers in the CFG were *encouraged* to share instances of resistance and ideas for transformation that could influence others.

Below is an excerpt of a transcript from our last CFG meeting when we discussed the concept of the commons. As I discuss following the transcript segment, the excerpt reveals the ways the CFG itself reflected elements of what we were talking about.

- 1 Brent: I wrote down something that said the commons is the basic requirement
2 for peace and happiness. I mean, I guess a lot of it is relationships and
3 connecting with people.
- 4 Clint: It seems to me today, kind of the opposite of the Western view of private
5 property. The commons is something that kind of goes against that, the
6 commodification or individualism. But it’s something that has coexisted
7 in some ways with that. The west for a long time had private property but
8 then also this idea of public space. I think we have that today too, but it’s
9 definitely eroded and looked down upon. I don’t know if that’s developed
10 as a coping mechanism since the cold wars, this idea of public or things

11 that are communal and ... are negative in some way. But definitely
12 anyone who speaks like this about the commons would be labeled as
13 being liberal or of the left or communist. But it comes from the idea that
14 the community shares in this space that is open to anybody regardless of
15 money, regardless of background. I liked how in the first part they kind of
16 set it up as this really big thing. The naturalist systems and the cultural
17 patterns and traditions but then they kind of write their stories. It's like
18 "Oh, the commons," but then they write their stories and it's like, "Oh,
19 it's something more than just a place, a place on a map," which is kind of
20 what I think. I think back to the kind of enclosure movement back in
21 England. The spaces that was once open for sheep grazing and cows to
22 graze. You didn't have to own property in order to raise animals. Then
23 once that became enclosed and people took it away, then you were no
24 longer able to raise animals without having land. You either had to pay
25 somebody to rent land from them or you had to sell your animals and go
26 work in a factory. It all goes hand in hand. Once people weren't able to
27 feed themselves by their own animals and hunting on the commons then
28 you had to enter the money economy. You had to become a worker or a
29 cog in the wheel and so I think in a lot of ways the movement toward
30 capitalism is a movement away from the kind of nurturing any idea of a
31 commons.

32 Jane: Yeah I have a friend you know, who's kind of a free market
33 fundamentalist, we've always conflicted because I understand the free
34 market and that it does work in certain situations. But it doesn't mean
35 that you could sell common shared resources like our air and our water
36 and our land... So I agree with you in our society that if you want to
37 protect the commons you are seen as anti-capitalist.

38 Justin: Anti-progress.

39 Jane: Yeah. The way we define growth is really.... We can't keep growing when
40 we're based on finite natural resources and ultimately wrapped up in that.
41 It's frustrating. The free market is not going to help us clean up our air
42 unless we try to regulate some of that... which we're trying to do anyway.

43 Scott: You're right, you're right. In the political discourse, in order to combat
44 pollution there has to be a regulation to stop it, which places a limit on
45 freedom... individual or even corporate freedom, which is being pitted
46 against that of the community's well being. And in our culture, because
47 of individualism, that typically wins out.

48 Jane: Yeah, and even when people want to do that right thing they can't afford
49 it, or they don't understand, they don't know, like the mercury in light
50 bulbs, for example. People think because of the mercury in CFLs that they
51 shouldn't use them, yet there is more mercury in an incandescent bulb, in
52 a power plant that's hurting our air quality. But really CFLs are better for
53 the public good, even though they may be harmful to the individual.

54 Justin: You know that woman in here they mentioned, Elinor Ostrum, the one
55 that got the Noble Memorial Prize in Economic Science, she was talking
56 about rules for the commons. Well, it seems like they're all basically rules
57 about how you set up rules and how you enforce rules. I mean out of the
58 eight things, I think six of them...

59 Jane: What page is that?

60 Justin: It's page 285. That's kind of like what you were saying as opposed to the
61 free market. Like, we have to set some boundaries and guidelines here
62 and then... it's all about regulating it in the commons. If somebody takes
63 more than their share or pushes somebody out how are you going to
64 control that? It definitely seems like a lot of control issues in terms of...

65 Brent: That makes me think of an aboriginal context, in sort of like wisdom.
66 There is like a traditional wisdom about how long you have this crop in a
67 field. It's sort of like that is almost analogous order but in a traditional
68 sort of context, than a list of rules per say.

69 Clint: You can also see how if we think of other cultures, like non-Western
70 cultures—we talked about it before—if we considered non-Western
71 cultures to be centered in the commons then any idea of development,
72 or Westernized development is going to destroy that... You can see why
73 people are opposed to trade regulations or the liberalization of trade.
74 Because they know that once that happens, once that door opens up,

75 once everything becomes privatized, if it isn't already it's going to be.
76 Because we live with kind of the capitalism constructs...
77 I think it's hard for us to recognize the idea of the commons because
78 we've been brought up in a lot of ways—or at least I have—without
79 recognizing them or at least not valuing them as such in a way. It's almost
80 hard to articulate why and how—from my cultural upbringing—like why
81 and how those common areas are even worthwhile. I think for me, I
82 remember my dad being in public education and talking about it as a
83 common good that we can't allow for public education to become
84 privatized. He remembers, kind of the backlash of integration, where a
85 lot of kind of "white flight" to private schools, and he challenged the
86 charter school movement, that it was a replaying of that. Any private
87 school is going to be more culturally segregated than any public school
88 will be. No matter how problematic public schools can be they have to be
89 integrated and in probably most cases will always be integrated. It's
90 better than the alternative. The idea of a public space where we can all
91 kind of come together and where you can't be kicked out of it kind of
92 thing, you can't really be denied. His articulation of that is one of the few
93 places where I remember this idea of a commons being positive. Other
94 than that, it's usually just kind of people complaining about other people
95 sort of leaving trash everywhere. It's like, "Oh well, nobody takes care of
96 this," and, "Nobody respects this." So in a lot of ways there is a lot of

97 shunning that goes on, a lot of mistrust between people, in terms of our
98 public spaces. Well actually in public anything, even in terms of like air
99 quality. Like you said. That gets into at least in like North Carolina—you
100 could probably speak more to it—but the air traveling from Tennessee. I
101 don't know if this is like TVA stuff, but I know there have been lawsuits...

102 Jane: Yeah, the geography of our state, it captures some of that pollution from
103 other states and then we have a lot of dying trees. I mean, we like having
104 trees but... that's a problem, too. I think too, you kind of mentioned this,
105 but when we invest in our commons, when we send our children to
106 public school or drink tap water instead of bottled water it's better for
107 the community. I wish more people see that. Like, if you drink tap water
108 and pay your water bill you're helping to keep that infrastructure
109 available. If we start buying bottled water that's going to hurt the local
110 water utility. I hope more people think of it as a system that we want to
111 invest in. And people who are older, that don't have kids think that they
112 shouldn't pay taxes for school... but by having an educated youth that
113 contributes to our whole community. Another quote that came up for me
114 from William McDonough and I don't have the exact quote but I heard it
115 two years ago, he's the man that does the "Cradle to Cradle" work. The
116 quote was like "Regulation is a sign of something that doesn't function
117 well. If something isn't designed properly to begin with you're going to
118 need regulation." I always thought that as a parent, like if your kid is out

119 of control what are you doing as a parent to create the situation. But
120 here it's like if we have to regulate pollution then we're probably not
121 getting our energy from the right place. If you think of the world in that
122 way, maybe we do have a place where maybe we don't need regulation if
123 we're doing things more sustainably maybe. That kind of ties in here too I
124 think.

125 Clint: Regulation assumes that we're already doing something wrong but don't
126 really fix the wrong thing. It just slows it or...

127 Jane: Weakens it.

128 Clint: Yeah.

In many ways, in their discussion of the commons, the participants themselves were simultaneously and collaboratively defining the CFG. Brent said, "I mean, I guess a lot of it is relationships and connecting with people" (2-3). Clint extended the definition: "it comes from the idea that the community shares in this space that is open to anybody regardless of money, regardless of background" (14). He later described the commons as "the idea of a public space where we can all kind of come together and where you can't be kicked out of it kind of thing, you can't really be denied" (86). Jane called the commons "a place where maybe we don't need regulation" (114-115). Their combined descriptions reflect the CFG, a place where relationships and connections mattered, where regulation was not deemed as necessary, where no one would be kicked out.

Furthermore, this discussion illustrates what "connecting with people" (2-3) sounds like. First, all participants actively engaged in the discussion. Second, in the

transcript excerpt, they extended one another's ideas and finished each other's phrases and thoughts. One brief example occurred at the end of the excerpt when Clint said "it just slows it or..." (118), and Jane followed with "weakens it" (119). Third, there are many verbal agreements in this excerpt, evidenced in participants' use of "yeah" (29, 36, 45, 96, 120) and "you're right" (40). Finally, the participants' repeated one another's phrases, a concrete example of shared uptake of ideas (Tannen, 1989). This includes terms like "individualism" (6, 43) and "capitalism" (27, 72), which suggests the participants are "on the same wavelength" (Edelsky, 1981). For example, Jane mentioned conversations she had with someone about the free market (29), and later Justin connected a part of the text to Jane's comment, saying, "That's kind of like what you were saying, as opposed to the free market" (57-58).

Important to note is that my role as the facilitator of this group was different in this excerpt than at other times across our CFG discussions. In many of the previous discussions, I acted more like a default instructor or expert, despite my efforts to share the conversational floor (Edelsky, 1981). My only contribution during this 15-minute segment, however, was this:

You're right, you're right. In the political discourse, in order to combat pollution there has to be a regulation to stop it, which places a limit on freedom... individual or even corporate freedom, which is being pitted against that of the community's well being. And in our culture, because of individualism, that typically wins out. (40-44)

Here, I merely built on Jane's previous point. I did not clarify, counter, or extend, as I had been wont to do in earlier conversations. I was a participant in this conversation, as much as the others.

This conversation also revealed some of the shared assumptions and beliefs of the participants. Perhaps this should be expected from a group of ecologically minded teachers, but there was a mutual skepticism of the capitalist and industrial system that leads to social and ecological exploitation. What was also evident in the conversation was some reflection on schooling that appeared in the cracks and crevices. The teachers—Clint and Jane in this example—challenged the move to more school privatization, which they suggested leads to further school segregation. This critique of the neoliberal effects on schooling occurred in other conversations we had, too, like when Abby spoke during the first meeting about how standardized testing affected her curriculum decisions.

It was in this supportive commons that we shared potentially controversial ideas and teaching stories, that we experienced and practiced commoning. There existed an understanding that we were journeying on similar paths, and that we were partners along the way. This was most evident in our final CFG discussion, after we had spent five months together. Over time our commoning became much easier, but that ease often fluctuated depending on the topic at hand. The teachers readily talked about their teaching. More difficult, however, were conversations about their understanding of the theory of Ecojustice and the ways the CFG readings and conversations were challenging their personal beliefs.

Defining Moments

At three different meetings, in three different ways, I asked the participants to explain EcoJustice education using their own words. I wanted to know what they emphasized in their answers, what was sticking with them, what made the most sense to them. If this CFG were a university class I would have assigned an essay or some journal writing to find out what they thought. Given the nature of the study, I just had to ask.

Responses to my question varied and revealed that, for the most part, the teachers struggled to articulate a consistent and coherent definition. At the third meeting Justin declared, “I can’t really explain it. I still feel like I’m trying to figure it out. But what I’ve been saying is I see it as where politics, philosophy, ethics, and environmentalism all kind of overlap.” Abby also confessed she was not sure how to define EcoJustice: “I’ve been having a really hard time articulating it. Something Jane said stuck with me. She was talking about, kind of, how the earth, instead of a place that is here for us for resources... trying to shift that mindset and that thought process of this place is here for us.” Later she concluded, “I’m having a hard time articulating this. I think it’s definitely something that I’m still struggling with in terms of defining.” Clint said, “I’ve explained it to people by using the words *sustainability* and *an ecological focus*, but then also bringing them into a wider spectrum than just a science class at school.” He also said he would define it as “the bringing together of radical democracy and community activism with, like, radical environmental activism, too.” Eric said he had circled the word “impact” in one of the chapters and shared, “EcoJustice is

examining what kind of impact humans and our ideas have on ourselves, on each other, and our environment and how to move in a much more positive direction with that impact.”

At the first meeting, Brent said, “The EcoJustice focus point was looking at the cultural underpinnings and ways that we sort of, like, logically create and understand things.” Two meetings later he attempted a more robust explanation, and I probed further:

Brent: I think that the central thread of the explanation in the book is that all sorts of environmental, societal, cultural problems come from or have a basis in the way our... Well, they have a basis in history and they put them sort of like the way our culture explains reality. So, I mean, “root metaphor” is the word [the authors] use, so I think if I try to, like, touch the heart of this book, I should say it’s just about those root metaphors and the recognition of our cultural history and how that influences all of our perceptions and languages and behavior, societal structure and everything.

Scott: What if someone says I don’t understand that. What does that mean?

Brent: What I just said?

Scott: Yeah. Someone’s like, “You just lost me there.”

Brent: I guess I would say... I would probably start asking them how they know certain things, like “How do you...” or maybe how they identify themselves or understand them. I’d probably ask them a specific

question like, “What do you think about science?” or something. And then they might say something, and I think from there I would start analyzing it. Maybe that will be helpful to them, to be like, “Oh, I didn’t realize I thought that about science,” or “I didn’t realize that other people might not think that about science.”

Scott: What point would you want to make about science?

Brent: I guess I would assume that they would have certain values associated with science, and I would try to highlight that some cultures don’t have such a value about science. Or just, like, the recognition that it is a value and it’s not ultimately true necessarily. Like if you say, “The scientific method proves something is real,” or something, I don’t know. It’s hard to have a hypothetical one-sided...

Scott: It is hard.

While Brent was able to articulate more in this second attempt, he, too, was still struggling.

That challenge of defining EcoJustice education continued to be apparent in final interviews. During the interview I asked each participant, “If you were to explain to a colleague what you have been reading about and learning over the past several months, what would you say?” Their responses were again a mosaic, pieces of understanding that, if assembled together, might reveal a larger, coherent picture. For Jane, EcoJustice education is “an approach to looking at environmental degradation... looking at the assumptions and the values we have that are contributing to that.” Brent simply called

it “a combination of environmentalism and social justice.” When I asked Madge how she explained EcoJustice to others, she paused several seconds then said, “It’s looking at the cultural and socioeconomic differences of the different people in the community, and how our choices, maybe, as the dominant culture, impact on... I don’t know... kind of impacts on how we perceive things.” She also said, “Sometimes we diminish other people’s cultures... that might make more sense ecologically,” referring to the chapter we read on learning from Indigenous wisdom. She concluded by saying “we need to be more open to perspectives of other cultures.”

Eric was the only participant to talk about the commons in the final interview. He said that EcoJustice is about “this commons that we all share,” and that “EcoJustice kind of looks at the idea that we have this responsibility within this commons to not only the environment but social issues that result from human interactions.” Abby’s definition highlighted the environmental and the social. She called EcoJustice “a different model of thinking about the resources that we have on earth and why they are here,” and followed with, “It’s challenging Western thought and Western culture and the hierarchies that Western culture sets up, the gender norms and racial inequities that come from that.” Clint provided the longest response. He spoke about how EcoJustice is “not just studying the environment in terms of classifying animals and thinking about rocks and minerals” but about taking hierarchies away and understanding that history has not brought us inevitably to where we are, that we need to ask how things got to be the way they are. He hinted here at the need for a historical and philosophical analysis of how Western culture evolved and contributes to the social and ecological crises that

exist. He concluded that it is difficult to provide a concise explanation of EcoJustice: “When people ask me questions about it, it’s a long discussion. It’s not something that you can kind of summarize real quickly, or it’s not something that you can comfortably or easily describe.”

While there are elements of understanding in their responses—modernist values contribute to environmental degradation, social and ecological crises are intertwined, the dominance of Western culture is socially and ecologically problematic—none of these definitions displayed a depth of understanding or entered into the detailed complexities of value-hierarchized thinking, dualisms, or the discourses of modernity, all central to the theory of EcoJustice. When I asked Eric if he ever talked to others about, say, individualism, mechanism, or anthropocentrism when explaining EcoJustice, he replied, “I will after I’ve read the book a couple more times. I’ve only read the chapters once. I think it takes continued exposure for it to really stick.” With this comment, Eric summed up what was evident across the participants’ attempts at definition—although they were beginning to understand the complexity of EcoJustice education, they needed more time to develop a firm grasp.

Their struggle to articulate the basics of EcoJustice education is not particularly surprising. As Eric pointed out, it takes time, and seven meetings over the course of five months were not quite enough. Given the limited time frame in which the study occurred, I am not certain how much more could be expected. And yet, while they were not able to thoroughly spell out specifics when I asked, they certainly were working with EcoJustice language and employing the ideas in the commons. In the lengthy excerpt

quoted earlier in this chapter, for example, there was evidence that they were examining the cultural roots and assumptions of Westernized culture. Clint said, “if we considered non-Western cultures to be centered in the commons then any idea of development, or Westernized development is going to destroy that.” Jane mentioned the ecologically problematic assumption of infinite economic growth: “The way we define growth is really.... We can’t keep growing when we’re based on finite natural resources and ultimately wrapped up in that. It’s frustrating.” And Brent reminded us of our previous discussion on Indigenous wisdom and built on what Justin said about the commons: “That makes me think of an aboriginal context, in sort of like wisdom. There is like a traditional wisdom about how long you have this crop in a field.” In these instances, the participants were interrogating the dominant and destructive discourses of modernity, which is evidence of the decolonization (Gruenewald, 2003) that occurred during the CFG conversations. In addition, there were also signs that they were developing an eco-ethical consciousness with regard to their own identities.

Unsettling Identity

At different times, the participants in this study shared how the reading and discussions were causing them to reconsider their understanding of Western culture and their complicity in it. This reconsideration was not merely a cognitive exercise, however. It was an affective experience, too, as they also reconsidered how their own identities were shaped and, in many ways, dominated by these modern discourses. In other words, the critique of culture became a critique of self. While I knew this from my own experience of reading about and engaging in conversations about EcoJustice, it was

not until analyzing the data that I noticed how the participants were talking about the ways in which their sense of self was being challenged through their participation in the CFG.

For our fourth meeting, I asked the participants to read one of three chapters. The topics covered in those chapters were gender, class, and race, or, more specifically, how modern discourses, structured by centric thinking and a logic of domination, construct our assumptions about differences.³⁷ The CFG conversation that day started around the idea of culture, how cultural differences emerge in students in the classroom, and how teachers need to understand and appreciate and utilize those differences. The participants kept the focus on students and culture for the first hour before Abby spoke about how the chapter on gender had unsettled her identity as a feminist. “I definitely identify as a feminist,” Abby began. “I feel like feminism is something that I live out day-to-day. I have conversations with my roommates constantly about it, even about the gendered language that we use and how that can reinforce the hierarchy that we have.” She confessed further: “I realize that in my classroom I kind of have become a little bit resigned that there’s a lot of sexism in school and kind of absorb that and [have] not been very conscious of how I’m proliferating that in my classroom.”

Abby had shared with a few of us after our previous meeting that she had been dealing with sexual harassment at school. Those experiences, combined with the reading on gender norms in school, provoked some critical self-reflection:

³⁷ In hindsight I wish we had taken the time to read and discuss each chapter individually. Since I was already asking a lot of the participants, I did not want to extend the experience longer than the five months we had planned.

So after reading this chapter I had this ah-ha moment of how I've been not been living out my belief of feminism in my classroom, which was really hard to challenge myself with. There's this realization that even though this is a very strong belief I have in my life, it's kind of a separate piece in the classroom. I just realized... I constantly need to enact that in the classroom. It's really interesting... and kind of sad.

Abby confessed that while she had strong feminist values outside of school, she was not bringing them into the classroom. This was not just an intellectual realization, either. There was an emotive response, too, as she described this recognition as sad.

Clint also spoke about how participating in the CFG prompted some deep, personal introspection. "What's first in my mind," he began during the final interview, "is that I feel like I have a different consciousness... a different consciousness of environmental issues with regard to my own life and, sort of, my own habits and practices. I don't think necessarily that all of that was there before." The reading and discussions around EcoJustice education, along with some other reading he had been doing, had him reflecting on both his own identity and the larger culture:

What specifically stays with me... I think of what I have been brought up with and, sort of, what my lifestyle pertains to... Everything that we do, and I do, is really kind of based on making a pet out of nature, you know what I mean? Like, making nature and the natural environment, the non-human world, the more-than-human world, making that like, you know, tame, and making it something that looks pretty but essentially is tamed by humans. So dominated by people.

Our lives are surrounded by this idea of taming nature and minimizing nature and living in a way that, you know, frankly has little to do with nature.

Clint was not just engaging in cultural critique, specifically problematizing anthropocentrism. He saw himself as part of that culture and was unsettled by that: “Our civilization is made up in this way, of separating ourselves from nature and from the seasons and from any kind of lifestyle that is really responsive to the natural world. And that’s really unsettling to me.” Just like Abby was bothered by her realization that she was not living up to her feminist ideals, Clint was disturbed by his separation from nature, even challenging his internalized human supremacy.

Clint continued talking about the personal and affective dimensions of what he had learned and been thinking about:

When I’m reading about EcoJustice, the first thing on my mind is, like, how does that relate to me? Like, how am I not doing that, or how have I done some of these things? There’s so much of my cultural background [that] is devoid of a lot of stuff, and it is kind of a shame. What sticks with me is a sort of... there’s a sadness in terms of how complicit I am, and we all are in terms of civilization in general.

Clint personalized the cultural critique, recognizing his own complicity. Again like Abby, he acknowledged a feeling of sadness that accompanied critical reflection.

Another example where it became evident that definitions of self were being examined and challenged occurred during the third meeting. The reading for that discussion centered on how language, thought, and culture are intertwined, how

dualisms and hierarchical thinking shape how we view ourselves and each other, and how the discourses of modernity—anthropocentrism, mechanism, and individualism, for example—are fundamental and problematic in Western culture. Both Abby and Justin struggled with the notion of scientism, or how rationalism and the science dismiss other ways of perceiving and knowing the world. I had asked if anyone wanted to share thoughts about the chapter, and Abby responded first:

[Science is] one of the assumptions I've always operated on, like I studied biology in school. I've always been interested in science. And now I'm teaching science to my students, so that was kind of like very jarring in terms of making me reconsider my mindset about that. But it's definitely challenging.

Abby began by acknowledging that she identifies in a personal way with science. She studied biology in school, has an affinity for science, and is currently a science teacher. For her, to read a critique of science in the text was both “jarring” and “challenging”. Based on her reading, the authors were not merely making abstract points about scientism, the ubiquity and dominance of science as a way of knowing the world, but also a criticism of who she is and what she believes.

Justin agreed with Abby, saying he was “irritated” by what the authors wrote about science. He turned to the text, read a few lines, and offered a counterpoint and example:

I was a little irritated with parts of [the chapter], because I thought [the authors were] making [science] very black and white. I think I wrote some comments here, page 69, I think right towards the bottom they're saying, “For example,

when a farm is seen through the machine metaphor, the farmers focus is on what inputs and techniques will produce the most food, rather than on understanding and caring for the land—the soil, plants, and animals as well as the humans—as living interdependent relationships.” So I was thinking of the factory farm. But then there’s also farmers taking the long view, you know, like Joel Salatin in *The Omnivore’s Dilemma*, who’s got this whole system in which he rotates his crops and his animals, and it’s very sustainable. But it’s a farm and it’s all about the bottom line... he’s not going to do this and lose money. This is his livelihood, but he’s also going to produce food. So don’t just say all farms necessarily.

Justin understood the problem of factory farms, but he was bothered by the blanket generalization of science that he saw in the text. And for him, the example of farming lacked nuance that accounted for small farmers that are motivated by the long view even if they are in it to make money.

Two weeks later, I received an email from Justin. He wrote that he was not going to be able to make the meeting that day. But he also included the following:

I also wanted to amend my position on the blanket generalizations about scientific thinking. I think that I reacted to the negative connotations that I felt were being placed on the values of the scientific approach to thinking because *I am so attached to teaching the value of that way of thinking. I spend most days trying to get my students to think like scientists without questioning that way of thinking or even attempting to place it in a context of different ways of thinking.*

So I am supporting one of the dominant views and value systems of the western approach to thinking. I guess maybe I was subconsciously feeling a little guilty or singled out by the authors and had my own knee jerk reaction to it. And I guess that was one of the points that they were trying to make. That these ways of thinking are so ingrained that it feels odd to question them. Because, really, how else would you think about it? (emphasis mine)

In this email Justin revealed that he had been thinking about the conversation on science long past our session had wrapped up. He characterized his comments at the CFG meeting as reactive, even using words like “guilty” and “singled out” to explain why he said what he did. Justin identified as scientist, and the critique of scientific thinking in the text was, initially, an affront to who he is and the work he does. Over time, though—like Abby and Clint in the earlier examples—he realized how he was complicit in perpetuating a dominant, Western view of science that does not allow much room for other ways of interpreting and explaining the world. “Questioning what is so deeply ingrained is strange,” he concluded.

Abby, Clint, and Justin illustrate the deeply personal aspects of coming to understand EcoJustice. The reading and discussions prompted them to question the culture in which they live but also, and perhaps more importantly, who they are within that culture. That kind of reflection, as they pointed out, can be quite unsettling. That these revelatory moments happened is significant. Worth noting, however, is that they often happened on the outskirts of our commons. Abby was the only one of the three who expressed her sense of complicity to the group as a whole. Clint and Justin did

their self-reflection during an interview and an email, respectively. What the commons allowed and did not allow warrants further consideration.

Transformative Learning

EcoJustice education is not just an intellectual enterprise. It is not just about history and culture and ecology as abstractions from everyday life. For those born and raised in Westernized culture, it also involves a critique of self. Developing an eco-ethical consciousness is an emotional, psychological, and spiritual endeavor. By asking my participants to read about and discuss EcoJustice education, I essentially asked them to rethink the culture in which they live as well as who they are within that culture. And this personal interrogation came before they really considered the implications for their teaching. There is evidence in the data that they began to do this difficult work.

Rethinking is probably not a strong enough word, though. Reframing is perhaps more apt. Goffman (1974) was one of the first to theorize “frames” and how they guided the perception and representation of reality. According to Gitlin (1980), “Frames are principles of selection, emphasis, and presentation composed of little tacit theories about what exists, what happens, and what matters” (p. 6). Lakoff (2006) described frames as

the mental structures that allow human beings to understand reality—and sometimes to create what we take to be reality. ... Frames illustrate our most basic interactions with the world—they structure our ideas and concepts, they shape the way we reason, and they even impact how we perceive and how we

act. For the most part, our use of frames is unconscious and automatic—we use them without realizing it. (p. 25)

Lakoff (2006) distinguished surface frames from deep frames. Surface frames are lexical. They are associated with words in a very ordinary sense, like what we understand a word like “war” to mean. Deep frames, however, “constitute a moral worldview or a political philosophy” (p. 28). They define a person’s common sense. If something “resonates” or “makes sense” it engages a deep frame. People with different deep frames may reach completely different conclusions given the same facts.

Altering frames, or *reframing*, is difficult. Frames are profoundly embedded and do not change easily or quickly. They exist neurologically and are maintained and reinforced culturally. The process of reframing has been called transformative learning (Mezirow 1991, 1996; Cranton 1994, 1996). According to Mezirow (1997), “Frames of reference are the structures of assumptions through which we understand our experiences. They selectively shape and delimit expectations, perceptions, cognition, and feelings” (p. 5). The means to transform those frames of reference, or to reframe, is “through *critical reflection on the assumptions* upon which our interpretations, beliefs, and habits of mind or points of view are based” (p. 7). If educators are to facilitate transformative learning, they “must help learners become aware and critical of their own and others’ assumptions. Learners need practice in recognizing frames of reference and using their imaginations to redefine problems from a different perspective” (p. 10). The participants in this study began to do this through their interactions in the commons. Transformative learning is a social process, requiring group deliberation and

group problem solving, followed by action and further critical reflection. The role of the educator is to construct an environment and facilitate conversations in ways that allow this process to happen.

This dissertation study was in part about seven teachers participating in a transformative learning experience. Reading about and discussing EcoJustice education provided them the opportunity to begin to critically reflect on the assumptions that shape their understanding of the culture in which they live as well as their own identities. What I have come to understand is that EcoJustice education is, essentially, about reframing. More specifically, it is an attempt to reframe how we understand human relationships and ecological systems. From an EcoJustice perspective, Westernized culture has shaped our frames, which affects our understanding of how humans relate to the earth, how men relate to women, and how we treat “outsiders” as well as how we define progress and civilization and how we discern knowledge and truth. Since these frames often lead to oppression, exploitation, exclusion, and degradation, they need to be modified or, in some cases, eliminated to lead to more just, caring, democratic, and ecologically sustainable communities.

Community and Collaboration

As I wrote in the previous chapter, teaching in the U.S. has long been characterized as a lonely profession, as teachers are isolated from colleagues and the community (Little, 1990; Lortie, 1975; Rothberg, 1986). In order to combat this privation, researchers have called for more community-based and cooperative professional development models (e.g., Darling-Hammond, 1997; Fullan & Hargreaves,

1991; Meier, 1995). Studies have confirmed that this move toward collaboration and away from isolation improves teaching and learning in schools (Ritchie, 2012; Vescio, Ross, & Adams, 2008). Darling-Hammond and Richardson (2009), for example, in their survey of research on professional learning opportunities, found that “providing intensive, content-rich, and collegial learning opportunities for teachers can improve both teaching and student learning” (p. 52). Key (2006) reported the same to be true in her review of the research on CFGs, concluding that CFGs foster a culture of community and collaboration and enhance teacher professionalism.

CFGs are a particular kind of professional community, with a structure and protocols that are unique but flexible. For example, CFGs often feature lessons and student work, and group members offer critical feedback with the goal of improving practice (Bambino, 2002). In this study, however, the participants and I gathered together around a text to discuss EcoJustice education. While we indeed talked about practice, we did not scrutinize lessons or student work. Had we continued meeting that most likely would have been the next logical step. Still, our CFG was a strategic site for transformational learning like other communities of practice (Wenger, 1998).

During the final interview with the participants I asked them about their experience in the CFG. They all reported benefitting. Jane was “encouraged to see some teachers that seem to be doing really good things, really motivated. I’ve often met a lot of teachers who aren’t that way, so that was really inspiring.” What resonated with Madge was the opportunity to meet with other people that had similar interests. “It was nice to hear what people were doing in their classes,” she said. Brent felt that

participating in the CFG was “good practice in a way of just, like, working through these ideas and talking about them... because these are really big issues, so I feel like just the conversation itself is, in a way, like, good practice.” In addition, Brent liked to hear what other teachers were doing. “It gave me ideas,” he said.

Abby went into more depth about her experience in the CFG: “Being around well educated, thoughtful people and teachers who really enjoy their teaching career was inspiring and also made me realize that I could teach for the rest of my life, not just my two-year commitment.” She came back to this point later in the interview: “I cannot explain to you how transformational it was to see teachers who, like, absolutely love what they’re doing and are critically thinking about it even ten years into their career or three years into their career. And who are intelligent, competent, nice people.” Clint said he enjoyed reading and talking with other teachers. Listening to other interpretations reinforced a lot of the concepts for him, and he found it helpful to hear about what others were doing with their students. He also identified how different this CFG experience was from other professional development:

A lot of professional development is done in kind of... just a lot of teaching in that, like, deficit model, which is sort of like, here’s something you should be doing that you’re not doing. Here’s how to do it, now go do it. To a certain extent EcoJustice could be looked at in that way... but I also think there’s a lot of stuff that the people in the group already do and it was just a matter of identifying those things and really then honing in on them and saying, “Okay, how can we do more of that?” or “How can I do that even though I’ve never

done something like that before?” or if it’s stuff I’ve already done, “How can I do it better or extend it or go to that next step with it?”

Clint reiterated that there were a lot of deep concepts to wrestle with from the text. “It’s really helpful to talk it out with other people,” he said. “You start to see things that you missed or overlooked.”

During the first interview I asked the participants why they were choosing to participate in the study. The most common answer was an interest in connecting with other teachers, to network and collaborate around similar interests. They mentioned being challenged and improving practice. From what they shared at the end of the study, and based on our exchanges during the meetings, it appears they received what they wanted. Several participants suggested that we continue meeting, even if it were only once per month, in order to keep the conversations going. For me, this was particularly refreshing to hear. Teachers today are under immense pressure to adhere to narrow curriculum standards, raise student test scores, and follow scripted lessons (Hursch, 2005; Nichols & Berliner, 2007). The teachers in this study represent a countermovement. Their intellectual curiosity and commitment to critical, creative, and ethical teaching not only inspired each other, but me as well.

Reflection

The participants in this study immersed themselves in the study of EcoJustice education over a five-month period. They journeyed with each other and with me into new territory, new thinking about the way language and culture shapes identity, how the commons supports interdependent and sustainable relations, the wisdom we can

glean from Indigenous communities, and the connections between social and ecological crises. In a short amount of time we created a commons of our own—a space where we told stories and wrestled with theory explicitly and implicitly, where we exchanged ideas and built relationships. This is not to say that our CFG was perfect or without limitations. Learning EcoJustice takes time, it takes dialogue, and it takes critical reflection. As some of the participants showed, it can be a difficult journey as cultural norms and identities are troubled.

As I consider how to best move forward as an EcoJustice educator and scholar, there are multiple tensions that I need to keep in mind. One is the tension between global phenomena and local realities. In the first two chapters I presented a comprehensive critique of Westernized culture, painting with a broad brush that may not have allowed for enough nuance or focus on the local. Literature on global warming, for example, while based on science collected on the ground, is often abstracted from everyday life. What contributes to environmental degradation and social injustice, however, is embedded in lived experiences on a daily basis—from consumer and technological habits to raced and gendered stereotypes that circulate in the everyday stories we tell. It is important, therefore, to keep both global and local in mind as an EcoJustice educator. Global trends are instructive, to be sure, but decolonizing and reinhabiting (Gruenewald, 2003) processes occur in local communities, in local ecosystems. Clint provided an example of this in a conversation we had outside of this study. In short, his 8th grade English students researched hydraulic fracturing, the questionable process in which water, sand, and chemicals are shot into the ground in

order to release natural gas. He asked his students to read multiple perspectives on the process and summarize, in writing, the debate. He chose this topic since hydraulic fracturing occurs in the state in which he and his students live, and the possible side effects—soil and water contamination among them—may disturb their community. The students were also encouraged to submit opinion pieces to the local newspaper, several of which were published. By grounding the researching and writing assignment in an immediate context, Clint helped his students catch a glimpse the relationship between local, state, national, and global environmental and political issues. The potential local impact of this work is immediate in a way that the impact of discussions and activities related to larger global realities seem so remote. The participants' discussions in the CFG centered often on work that they did in their immediate communities, reminding me of the need to highlight the local context in my work in EcoJustice.

While the above is true, I recognize that there are tensions that emerge when bringing big, broad issues home. I have found that my students in university classes, for example, are more likely to accept the existence of systemic and institutionalized racism when they sense that the perpetrators of racist acts are “out there” in the world. When the conversation turns to how we can unknowingly participate in perpetuating racism, there is often more resistance. The trouble becomes personal, and the feeling is uncomfortable. This came across to some extent in this study when Abby, Justin, and Clint shared feelings of discontent and frustration. There must be a balance between teaching about what is “out there” culturally, socially, and politically, and what is “right here” at work in our own lives. This work must be done with great care.

Finally, there is tension between what EcoJustice education looks like and what the current “audit culture” (Taubman, 2009) permits. EcoJustice educators must be creative thinkers and lesson planners, able to deftly maneuver around pacing guides, prepackaged curriculum materials, and state-defined learning objectives. In this study, Abby, for instance, talked about feeling limited by the standardized tests her students were required to take at the end of her course. Part of the work of an EcoJustice educator involves strategic navigation, alliance building, and compromise. These skills become especially vital in contested political spaces like public schools. As teacher educator, then, I must prepare future teachers for the controversies and challenges that may arise if they teach toward a more just and sustainable world. I must help them learn how to resolve conflicts peacefully, how to partner with other teachers and community members, how to use language and framing tactically, and how to persevere in the midst of uncertainty. And my work must not be limited to lectures and anecdotes. There must be a modeling in my own practice. The work of EcoJustice education begins with me, and as a teacher educator I must invite my students to come along side and join me in the work that is ongoing.

CHAPTER 6

Seeds

Wide Awake

In Christopher Paolini's (2008) fantasy novel, *Brisingsr*, one of the characters, Roran, fights against men that are under a spell that renders them impervious to pain. While not immortal, the men are immune to the sensations that accompany the wounds they acquire. Consequently, they laugh hysterically in masochistic delight as they sling blades and butcher bodies. After the battle, Roran is summoned by Nasuada to be congratulated for emerging victorious in battle: "Now that you have fought these men who feel no pain," she begins, "do you believe that having similar protection from the agonies of the flesh would make it easier to defeat them?" Roran shook his head. "Their strength is their weakness," he replies. He explains that their numb confidence makes them careless with their lives, and that they have no thoughts of self-preservation.

Roran's response reminds me of what Maxine Greene (1977) called "wide-awakeness," the presence of mind and body that allows us to think deeply about and to feel the world we live in. To not be wide-awake is to be adrift, "to act on impulses of expediency" (p. 193); or, like in Paolini's story, to be oblivious to the pain and destruction we cause and suffer. The character Roran recognizes the dangers of being anesthetized and rightly resists the temptation to be exempt from the physical and

emotional consequences of his actions. In other words, he pledges to remain wide-awake.

In so many ways participation in modern life is like battle—the competition, the sacrifices required to succeed, the collateral damage, the power bestowed to the victors. Like the enemy fighting Roran, I often feel sedated and unable to feel the wounds inflicted upon me. At other times I am fully wide awake, sorely aware of the ways in which I am complicit in cycles of violence and exploitation. This dissertation study and my interest in EcoJustice education are outgrowths of my desire to find peace, to forge a different path, to inject more justice and healing in the world. It was my hope to learn more about what it means for teachers—including myself—to counter the cultural hegemony of modern life. Although the sustainability movement is growing in the U.S. and around the world, there is still much work to be done as Westernized culture transitions away from hyper-consumption and human-centeredness to more just and sustainable ways of living and being. Classroom teachers and community educators will play a particular role in this process. To varying degrees, the participants in this study were “wide awake” to what is going on in the world and in their communities, and I wanted to learn from and with them. More specifically, I wanted to learn about what they do in their classrooms with students, and, further, the ways in which EcoJustice education could enhance, enrich, or trouble the work that they are already doing.

Review

I began this dissertation by writing about the nearly ubiquitous fixation on economic growth, in the U.S. and globally, and the associated environmental

consequences. Since writing that chapter, Greece, in an effort to revive its stagnant economy, has restarted mining operations previously determined to be too environmentally destructive (Daley, 2013). New reality television shows feature independent and renegade gold miners tearing up the earth in search of treasure, ignoring the environmental and cultural disruptions of their pursuit (Lujan, Bloom, & Watson, 2013). These are two among hundreds of examples of the ways in which humans are literally plowing ahead despite the warning signs that the earth is stressed.

In the first chapter I cited research on climate change as evidence that humans are altering the ecological systems on which we depend for survival, knowing full well that climate science is highly politicized. While some continue to debate the causes of global warming and the validity of projected effects, the U.S. military seems to be taking the science seriously. A top-level military official stated that climate change is the biggest long-term security threat in the Pacific region, an area that includes North Korea, China, and Japan (Bender, 2013). Warming temperatures and damaging storms are not the only evidence that humans need to rethink their relationship to the planet. Just a few weeks ago Beijing was so encased in brown and gray soot that people were told to not go outside (Wong, 2013). Urbina (2013) reported that massive amounts of old televisions and computers are accumulating in landfills and old warehouses in the U.S. Plastic is swirling in the oceans—literal floating garbage dumps (Sullivan, 2009). Climate science may be controversial, but the larger issue—confronting a host of environmental challenges and rethinking our relationship to the environment—is a reality we all face despite our political and religious beliefs.

Since the 1970s environmental education has been positioned as the panacea, the means by which new attitudes, skills, knowledge, and values about the environment would be nurtured and developed. Ample research suggests, however, that environmental education has failed to meet its goals. In the span of four decades since the birth of the environmental education movement, the state of the environment has worsened. With continued concern that humans are overshooting the planet's carrying capacity at an alarming rate, other movements have emerged to address the environmental problems we face—from ecoliteracy to education for sustainability to ecopedagogy. The Environmental Education 2.0 movement, as I described in the first chapter, comprises the varied frameworks, organizations, and practices that are geared toward building a more just and sustainable future but in ways that are different from the first wave of environmental education. Those differences include addressing environmental issues outside of science classes, examining the cultural and social causes of environmental degradation, and empowering students to act within their schools and communities in ways that contribute to a more sustainable culture.

But perhaps what I have defined is not so much a breaking of new ground as it is a returning to old roots. The goals of the Environmental Education 2.0 movement are arguably no different from the goals of environmental education defined by the Tbilisi Declaration (UNESCO-UNEP, 1978):

- to foster clear awareness of, and concern about, economic, social, and ecological interdependence in urban and rural areas;

- to provide every person with opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment;
- to create new patterns of behavior of individuals, groups and society as a whole toward the environment (p. 3)

Perhaps even more interesting, the authors of the Tbilisi Declaration wrote that environmental education should take a “holistic approach, rooted in a broad interdisciplinary base,” that it “must look outward to the community,” and that “it should encourage initiative, a sense of responsibility and commitment to build a better tomorrow” (p. 2). The case could be made, then, that the Environmental Education 2.0 movement is a return to the beginning, a second attempt to achieve what the environmental education movement failed to do in the first iteration. Even if the goals might be the same, the Environmental Education 2.0 movement represents new means, new methods of meeting those goals. In the 21st century, the stakes are arguably higher, as environmental conditions have worsened since the 1970s, neoliberalism has become more entrenched worldwide, and the world population has exploded.

I consider EcoJustice education part of the Environmental Education 2.0 movement. An EcoJustice educator understands that environmental education only touches the surface of the problems we face, that social and environmental violence are grounded in the same cultural history, and that the only way to bring about fundamental change is cultural transformation (Martusewicz et al., 2011). In the second chapter I wrote about the theoretical underpinnings of EcoJustice education—the

interrelated environmental and social consequences of globalization, eco-feminist analysis of Westernized culture, and the effects of neoliberalism on communities, livelihoods and schooling. Presenting this theory—as well as the importance of revitalizing the commons and learning from Indigenous wisdom—to a group of seven educators was the primary component of the study. From those conversations, I learned more about what the participants were already doing with their students, building on and extending what Moroye (2009) called ecologically minded teaching.

These ecologically minded teachers are:

- Making visible the externalities of the materials economy
- Creating engaging learning experiences
- Providing multiple perspectives
- Asking critical questions
- Partnering with community members and parents

With these practices, ecologically minded teachers represent part of the Environmental Education 2.0 movement. They are moving beyond the paradigm of traditional environmental education, doing what Strife (2010) and Saylan and Blumstein (2011) proposed is needed. They are teaching students about interrelated environmental and social issues, and they are doing it in science, social studies, and English classes. The five practices are by no means exhaustive. My hope is that these are the first few sentences in a long conversation. There are certain absences, to be sure. The participants shared pieces of their work and not the whole, and my interview questions and CFG facilitation did not specifically target ecologically minded teaching. I imagine studies of other

ecologically minded teachers will not only flesh out the five common practices of the teachers in this study, but also add more practices. Still, for now, these five practices are the building blocks on which to further develop a theory of ecologically minded teaching.

Yet ecologically minded teaching is not quite the same being an EcoJustice educator. As ecologically minded teachers, the participants showed evidence of teaching students about the social and environmental consequences of globalization and hyper-consumption, for example, but when it came to addressing the cultural assumptions that lead to social and environmental violence, or nurturing in their students a sense of the commons, as described by Bowers (2006) in particular, they only scratched the surface.

Together in our commons, though, we explored what it means to critically and ethically analyze the culture in which we live, a conversation that became deeply personal at times. The participants told stories about their teaching. They grappled with the theories that comprise EcoJustice education, even struggling at times. They shared ideas and passions and wrestled with new ones. They unpacked their assumptions about Westernized culture and examined how their own identities have been shaped by that culture. The creation of our commons allowed for some critical reflection, both in the center and on the outskirts. For the participants, the study represented the beginning of a journey toward understanding what it means to be an EcoJustice educator. This self-reflective journey is the critical jumping off point from which teachers can transform their teaching.

So What

I set out to do a research study with teachers interested in making the world a better place—more just and more sustainable. I introduced them to EcoJustice education in hopes that the reading and discussions might spark some kind of movement, some kind of transformation. I wanted the theory to work some magic. Alas, there was no magic, but there was some important and intense reflecting—about culture, about identity, and about teaching. There was a developing recognition of what educating for justice and sustainability is and could be. I must confess that it took me a long time to grasp the value of what took place. I came to recognize that whether the teachers had an explicit understanding of the theory of EcoJustice was really not most essential to the study. I am not narrating how EcoJustice theory transformed the participants' lives. Instead, I am writing about how a particular theory—rife with issues that matter, including race, class, gender, etc.—prompted the participants to reflect deeply together. I simply provided a space for the conversation to happen and the text and ideas around which to talk, and the conversation happened.

Our commons did what it was supposed to do, in part. Not fully. Not magically. But something did happen. We came together into a welcoming space for development and transformation, where our frames of reference could be altered. The centerpiece around which the conversation happened needed to be significant and powerful, and EcoJustice served that purpose. But the context mattered, too—perhaps more. The commons we created was a place where the participants got to try on some new ideas, to reflect on some old ones, and do some self-critique. It was place where they brought

uncomfortable issues to the center, like Abby did when she confessed that she was not living up to her feminist values at school. It was a place where they grappled with the ideas about their relationship to the environment, considered alternatives, and thought about how that might affect what they teach. It became a space that mimicked the sort of things they might be able to do with their own students, though they were not explicit about that connection. No, it was not perfect. There were no grand moments, no mighty conclusions. There was nothing earth shattering about what they were doing. What matters is that they were doing it. They were creating and living in a particular commons. They were not working in isolation but were willing to collaborate and support one another. They did not become EcoJustice experts, as much as I may have wanted that. We did not have enough time. But with the time we had, we talked about issues and ideas that mattered—to us, to our students, and to the communities in which we live. And that is significant.

Over the years, researchers have investigated what makes for successful professional development experiences. Little (1988), for example, suggested that professional development should be collaborative in nature, focus on problems related to curriculum and instruction, and occur over an extended period of time to ensure progressive gains in knowledge, skills, and confidence. For Abdal-Haqq (1995), professional development should be accessible and inclusive, ongoing and collaborative, and focused on student learning. Putnam and Borko (1997) posited that teachers should be treated as active learners who construct their own understanding, and that

professional development should be situated in classroom practice.³⁸ These characteristics of professional development mirror what Mezirow (1997) suggested is needed for transformative learning to occur, for reframing to happen. That is, there must be opportunities for adult learners to reflect critically on the source, nature, and consequences of assumptions, and dialogue with others freely and fully about the implications. And that is what we were trying to do in our CFG—and *did* to a large degree.

Ecologically minded teaching and EcoJustice education exist in tension with traditional forms of schooling, so teaching for social justice and environmental sustainability is an uphill climb. Stevenson (1987) made a similar point almost thirty years ago, specifically highlighting how the goals of environmental education were at odds with the typical structure of schools. Mass public education emerged in an industrial era, and schooling became a means of establishing social order, processing and credentialing, and reproducing dominant social values (Willis, 1977). Environmental education and EcoJustice education are about social and cultural *transformation*. When schools are set up as institutions of transmission, the work of transformation is extremely difficult. In our CFG, the participants were allowed—encouraged, even—to collaborate and brainstorm how to teach for transformative ends. Our commons was a shelter. It was an alternative political space in which there was opportunity to figure out how to continue teaching against the grain.

³⁸ For more research on professional development, see Borko (2004), Ingersoll & Strong (2011), and Wilson & Berne (1999).

In the first two chapters of this dissertation, I wrote about large, complicated issues—basically the problematic aspects of Westernized culture that have become ubiquitous around the world. In many ways the participants in this study are teaching against globalization. By exploring the externalities of consumer products, for instance, they are helping students understand that an item may cost a certain amount of money in a store but that there are hidden costs not accounted for on a price tag. Yet the work of these participants in their classrooms is very local, very grounded in the communities in which they live and teach. There must be, then, a constant recognition of the tension between teaching what is “out there” in a global sense, and what is “right here” at home. Teachers and students are not equipped to solve massive, global problems. They are, however, situated in communities where the work of healing and repairing what is harmful and broken happens.

Limitations

There are a few more limitations to this study that I did not address in earlier chapters. First, I do not think I sufficiently addressed—with the participants especially—what is really a key component of EcoJustice education: the interrelatedness of social and ecological violence. The focus of our conversations was mostly environmental issues, not racism or sexism or the relationship among them, which is the unique contribution of EcoJustice education. It is also what makes EcoJustice education so interesting and complex. Perhaps I could have pressed more or steered the conversations more directly to the ways the discourses of modernity undermine *both* environmental destruction and social injustices. The structure of the study, which I

arranged, also limited our opportunities to dig deeper in this direction. I chose to cover the three chapters on race, class, and gender during one meeting, for example. When analyzing the transcript of that conversation, I noticed that we did not even talk about race. I brought it up several times but there was simply no traction. More evidence that we needed more time together, perhaps. Or proof that, as others have found, race is a difficult topic for teachers of European descent to engage (Frankenberg, 1993; Glazier, 2003).

Second, it bears repeating that I did not observe the participants teach, which is a vital next step. The participants are not perfect teachers, and I did not intend to portray them that way. They chose to share specific aspects of their teaching with me and the other participants. There is much more I do not know about them and their teaching. I was able to utilize what they shared to theorize a bit. More information—including information gathered from direct classroom observations—from more participants will be necessary to make the theory of ecologically minded teaching more robust.

Third, I recognize that there is so much more work that needs to be done. I am not yet certain of the relationship between ecologically minded teaching and EcoJustice education. Can one subsume the other? Are they mutually exclusive? I still need to tease out the overlaps and the possibilities, relative to one another and to Environmental Education 2.0 more generally.

Going Forward

Ladson-Billings (2006) wrote that teachers often ask her how to be culturally relevant. She does not tell them. She does not want them to merely follow orders as if there is a recipe that can be followed. Instead, she wants the teachers to engage in deep thought and critical analysis. For Ladson-Billings (2006), culturally relevant pedagogy is rooted “in how we think—about the social contexts, about the students, about the curriculum, and about instruction” (p. 30). In other words, pedagogical practices and rationales emerge from a mindset and not from a checklist. I have found the same to be true for EcoJustice education. The practices of an EcoJustice educator—analyzing culture, revitalizing the commons—emerge from an ethical and philosophical stance. The work is thus deeply personal and political. Some of the participants in the study revealed how difficult it can be to rethink who they are in Westernized culture. If we indeed teach who we are (P. Palmer, 1998), then learning to teach from an EcoJustice perspective is as much about identity transformation as it is theoretical understanding and pedagogical choices. In the future, I will continue working with teachers on how to bring issues of justice and sustainability into the classroom. Based on what I learned from the present study, there are two lessons I will take with me.

First, format matters. The format of this study was a Critical Friends Group (CFG), which suited our purpose fairly well. Our meetings became our commons, a mutually shared space where we told stories and grappled with critical theories, where we formed relationships and bonds of trust. It was in that commons that the seeds of critical reflection and transformation were planted, where reframing began. Learning to

teach from an EcoJustice perspective is a deeply personal and political venture, and a supportive, nurturing community is a necessary part of that process.

Second, time matters. The participants and I met over the course of five months, approximately every other week, for a total of seven meetings. Still, they struggled to articulate clearly and consistently a deep understanding of EcoJustice education. But that is not to suggest that the study somehow failed. Instead, it means that the participants needed more time—more reading, more reflection, and more conversation. Again, EcoJustice education is about altering frames of reference, disrupting habits of heart and mind, and challenging the norms and assumptions of Westernized culture—a process that is a profoundly emotional, psychological, and spiritual endeavor. That kind of deep, personal transformation does not occur quickly.

From this study I gleaned some of the practical—as opposed to theoretical—components to being an ecologically minded teacher. Ecologically minded teachers bring their values and beliefs about the preserving and protecting the environment into the classroom. They teach about the ways that humans are harming the planet and each other even though they are not environmental educators. They raise awareness that modern life is not sustainable and that changes in lifestyle and culture are necessary. To me, this is a notable undertaking. Ecologically minded teachers are pushing back against mainstream culture, against fast food and shopping malls, against human-centeredness and hyper-consumption. They are troubling normal, disrupting the status quo, throwing sand in the gears of capitalist machinery. That is bold teaching. For the sake of justice and sustainability, I think we need more teachers like that. While

introducing these teachers to EcoJustice education sparked some initial reframing for these teachers, they were already doing the work of the Environmental Education 2.0 movement. This study prompts me to consider further what Environmental Education 2.0 looks like, and ways we might move teachers even further along its path, perhaps creating a movement that finally makes a difference.

So what does this mean for teacher educators who prepare teachers to work for justice, democracy, and sustainability? I keep coming back to the first interview with all of the participants. Six of the seven talked about time they spent in nature, and that love of the outdoors shaped who they are as teachers. Researchers have found a correlation between childhood experiences in nature and adult environmentalist values and behavior. This correlation, for Sobel (2012), is absolutely crucial. I cited his essay in the first chapter, specifically mentioning his critiques of environmental education—that it had adopted a museum mentality, that the joy had been sucked out of it because of standards and objectives. In the same essay, he asked the following questions:

What's the most effective way to parent and educate children so that they will grow up to behave in environmentally responsible ways? Or, more specifically, what kinds of learning, or what kinds of experience, will most likely shape young adults who want to protect the environment, serve on conservation commissions, think about the implications of their consumer decisions, and minimize the environmental footprints of their personal lives and the organizations where they work? (para. 36)

His answer? Go outside. Get dirty. Fall in love with nature. This worked for environmentalists like John Muir, Rachel Carson, and Aldo Leopold. Children should be invited to “make mud pies, climb trees, catch frogs, paint their faces with charcoal, get their hands dirty and their feet wet. They should be allowed to go off the trail and have fun” (para. 29). Sobel advised environmental educators “to focus way more on hands-on experience with children and way less on systematic knowledge. Or at least understand that systematic knowledge can emerge organically from lots of hands-on experience” (para. 29). Learning about nature, he wrote, is less important than just getting kids out into nature.

I read Sobel’s essay after my study was completed, right as I began to analyze the data, and his words have been echoing in my mind ever since. *Get kids outside. Let nature entice them. They will protect that which they love.* Perhaps taking kids outside is most important. What if the work of the ecologically minded teachers in this study is largely superficial and inconsequential? Are students moved to action from classroom conversations? Does knowledge about externalities alter behavior? When it comes to my own children and the values about the environment I want to pass on to them, I take them outside. We play in the river. We climb trees. We plant vegetables. We watch the birds.

As a teacher educator, I may need to begin by taking students outside to experience nature, letting them develop an ethic of care for the more-than-human world and talking with them about how what we teach and how we live can contribute to a more just and sustainable world. It might mean creating commons instead of

courses, or making courses our commons. It might mean partnering with community organizations that are committed to protecting and preserving the environment, and with community educators that are social and environmental justice advocates and engaging pre-service and in-service teachers in meaningful, transformative work with them in our local community. As I learned from this study, the content—the ideas—are just part of the process. There needs to be a supportive and nurturing space in which teachers and future teachers can examine who they are, the world they live in, and what they can do to make the world a better place.

I often think about the multicultural education movement, how it emerged as a counter cultural effort to challenge mainstream practices and status quo power structures. Banks (1993) delineated five dimensions of multicultural education, the first being content integration. It was the first step, and an important one. For Banks, though, there are four more dimensions, each building on the previous. I think there are parallels to the work I have begun with ecologically minded teaching, EcoJustice education, and Environmental Education 2.0. The first step might just need to be content integration. From there we can build the movement further, name the other dimensions, and go deeper. Change will not happen in one semester or from one book. We need to have a longer-term view, and to be content with letting the transformation unfold in its own time.

I titled this chapter purposefully. This work is just beginning for me. I like to think that a lot of important seeds have been planted, both in my mind and life and in those of the participants. Looking back, I am not sure I began with the right questions. I

wanted to know about the participants, who they were and what they did in their classrooms with students, and I wanted to know what about the potential of EcoJustice education, if it might “do something” for them, not really sure of what that something might be. I placed a lot of faith in the theory, and what I found is that the commons we created mattered just as much if not more. I do not have the right figurative language yet to explain it, but I keep thinking about grooves. The ideas that we read about were important, but they needed grooves in which to flow. Those grooves were developed in the commons. I also think about economies and transactions, but not in the neoliberal sense. There is an economy of the commons, exchanges of ideas and support and service for the sake of the community, for the well being of everyone and everything. In our professional development experience, the participants and I made transactions in the commons. When I think about how to continue and extend the work that I have begun around EcoJustice education, I am not planning on teaching a university course. Based on what I have learned from this study, I do not think that is the most effective format. I will offer a space for a commons to develop and invite those that are interested to come and join. That is where our work will grow.

Appendix A

Recruitment Email

Interested in learning about EcoJustice Education?

Interested in collaborating with other teachers who are teaching for ecological and social justice?

Interested in invigorating your teaching and curriculum with place-based and justice-oriented projects?

I am doctoral student at UNC Chapel Hill conducting my dissertation research on EcoJustice Education, and I am looking for approximately 8 teachers (teaching grades 5 - 9) to participate. The study is designed to be an extended professional development experience that is mutually beneficial to everyone. Participants will read and discuss EcoJustice Education, sustainability education, and more; share ideas and experiences; and learn how to do the work of making the world a more sustainable and just place as best we can.

We will start meeting in February and meet about every two weeks through May. My hope is that the data I collect (individual interviews with each participant, group conversations, etc.) will shed light on how teachers and teacher educators can take up the causes of ecological and social justice in new and effective ways using EcoJustice Education as a framework.

If you are located in the Durham and Chapel Hill area (or want to use Skype), and are interested in learning more, please contact me via email at scmo@live.unc.edu. I will send you a copy of the consent form with more details.

When you respond, please tell me where you live/teach, the grade and subject area you teach (e.g., science, social studies, language arts, or math) and if you are teaching in a traditional school context or in a non-traditional context (e.g., in a nonprofit, community, or enrichment program).

Please note that it is possible that everyone who is interested may not be able to be included.

For the future,

Scott Morrison
Ph.D. Candidate, School of Education
University of North Carolina at Chapel Hill scmo@live.unc.edu

Appendix B

First Interview Questions

The following questions were adapted from Ladson-Billings (1994):

1. Tell me about your background. What experiences shaped who you are as a teacher? When and where were you educated? When and where did you begin teaching?
2. Describe your philosophy of teaching. What are your aims and expectations as a teacher?
3. What kinds of things have you done with students in order to facilitate their knowledge of the environment, social and ecological justice, or sustainable living?
4. In what ways, or to what degree, did your teacher training prepare you for the work you are doing now?
5. If you could revamp teacher education so that future teachers would be more prepared to teach students to live more sustainably, what changes would you make?
6. What obstacles do you face as a teacher?
7. How do you think the educational experiences you offer differ from those considered “traditional”?

Appendix C

Final Interview Questions

1. In the time we have spent together reading and talking about EcoJustice education, what has resonated with you the most?
2. In what ways do you (not) envision EcoJustice theory/education transforming your curricular and pedagogical choices in the future?
3. If you were to explain to a colleague what you have been reading about and learning over the past several months, what would you say?
4. During our first interview I asked you about your aims as a teacher. Are your aims the same, or have they changed at all?

References

- Abdal-Haqq, I. (1995). *Making time for teacher professional development* (Digest 95-4). Washington, DC: ERIC Clearinghouse on Teaching and Teacher Education.
- Abram, D. (1996). *The spell of the sensuous: Perception and language in a more-than-human world*. New York: Pantheon Books.
- Apple, M. (2006). *Education the "right" way: Markets, standards, God, and inequality*. New York: Routledge.
- Archer, D., & Rahmstorf, S. (2010). *The climate crisis: An introductory guide to climate change*. Cambridge: University of Cambridge Press.
- Ardoin, N. M., Clark, C., & Kelsey, E. (2012). An exploration of future trends in environmental education research. *Environmental Education Research*, 1-22, iFirst article.
- Bambino, D. (2002). Critical friends. *Educational Leadership*, 59(6), 25-27.
- Banks, J. (2009). Approaches to multicultural curriculum reform. In J. Banks and C. Banks (Eds.), *Multicultural education: Issues and perspectives*, 7th edition (pp. 233 – 253). Boston: Allyn & Bacon.
- Bauerlein, M., & Jeffery, C. (2013). The heat is on: Public opinion has moved on climate change. *Mother Jones*, 38(1), 5-7.
- Bauman, Z. (1998). *Globalization: The human consequences*. Cambridge: Polity Press.
- Begley, S. (2004). Wealth and happiness don't necessarily go hand in hand. *The Wall Street Journal*. Retrieved from <http://online.wsj.com/article/SB109234085670790101.html>
- Bender, F. (2003). *The culture of extinction: Toward a philosophy of deep ecology*. Amherst, NY: Humanity Books.
- Bender, B. (2013, March 9). Chief of U.S. Pacific forces calls climate biggest worry. *The Boston Globe*. Retrieved from <http://bostonglobe.com/news/nation/2013/03/09/admiral-samuel-locklear-commander-pacific-forces-warns-that-climate-change-top-threat/BHdPVCLrWEMxRe9IXJZcHL/story.html>
- Berry, T. (1999). *The great work: Our way into the future*. New York: Bell Tower.

- Berry, W. (1977). *The unsettling of America: Culture and agriculture*. San Francisco: Sierra Club Books.
- Berry, W. (1995). *Another turn of the crank*. Washington, DC: Counterpoint.
- Berry, W. (2005). *The way of ignorance: And other essays*. Washington, DC: Shoemaker & Hoard.
- Berry, W. (2010). *What matters? Economics for a new commonwealth*. Washington, DC: Counterpoint.
- Berthoud, G. (1992). Market. In W. Sachs (Ed.), *The development dictionary: A guide to knowledge as power* (pp. 74-94). New Jersey: Zed Books.
- Bigelow, B. (2011, Spring). Got coal? Teaching about the most dangerous rock in America. *Rethinking Schools*. Retrieved from http://www.rethinkingschools.org/archive/25_03/25_03_bigelow.shtml
- Blenkinsop, S., & Egan, K. (2009). Three “big ideas” and environmental education. In M. Mckenzie, P. Hart, H. Bai, & B. Jickling, *Fields of green: Restorying culture, environment, and education*. Cresskill, NJ: Hampton Press.
- Bonta, M., & Jordan, C. (2007). Diversifying the American environmental movement. In E. Enderle (Ed.), *Diversity and the future of the U.S. environmental movement*, (pp. 13-33). Retrieved from <http://www.environmentaldiversity.org/documents/05-Bonta-and-Jordan.pdf>
- Bookchin, M. (2005). *The ecology of freedom: The emergence and dissolution of hierarchy*. Oakland: AK Press.
- Bourdieu, P. (1998). *Acts of resistance: Against the new myths of our time*. Cambridge: Polity Press.
- Borko, H. (2004). Professional development and teacher learning: Mapping the terrain. *Educational Researcher*, 33(8), 3-15.
- Bowers, C. A. (1974). *Critical literacy for freedom: An existential perspective on teaching, curriculum, and school policy*. Eugene, OR: Elan Publishers, Inc.
- Bowers, C. A. (1993). *Critical essays on education, modernity, and the recovery of the ecological imperative*. New York: Teachers College Press.
- Bowers, C. A. (1997). *The culture of denial: Why the environmental movement needs a strategy for reforming universities and public schools*. Albany, NY: State

University of New York Press.

Bowers, C. A. (2001). *Educating for eco-justice and community*. Athens, GA: University of Georgia Press.

Bowers, C. A. (2004). Revitalizing the commons or an individualized approach to planetary citizenship: The choice before us. *Educational Studies*, 36(1), 45-58.

Bowers, C. A. (2006). *Revitalizing the commons: Cultural and educational sites of resistance and affirmation*. Lanham, MD: Lexington Books.

Bowers, C. A. (2011). *Educational reforms for the 21st century: How to introduce ecologically sustainable reforms in teacher education and curriculum studies*. Eugene, OR: Eco-Justice Press, L.L.C.

Bowers, C. A., & Martusewicz, R. (2009). Ecojustice and social justice. In E. Provenzo (Ed.), *Encyclopedia of the social and cultural foundations of education* (pp. 272-279). Los Angeles: Sage Publications.

Brown, T. (1978). *The tracker*. New York: Berkley Books.

Bullard, R. D. (Ed.). (1993). *Confronting environmental racism: Voices from the grassroots*. Boston, MA: South End Press.

Bullard, R. D. (Ed.). (1994). *Unequal protection: Environmental justice and communities of color*. San Francisco: Sierra Club Books.

Bullard, R. D. (2000). *Dumping in Dixie: Race, class, and environmental quality*. Boulder, CO: Westview Press.

Bullard, R. D., & Waters, M. (2005). *The quest for environmental justice: Human rights and the politics of pollution*. San Francisco: Sierra Club Books.

Capra, F. (1996). *The web of life*. New York: Anchor Books.

Capra, F. (1999). Ecoliteracy: The challenge for education in the next century. Liverpool Schumacher Lectures. Center for Ecoliteracy. Retrieved from <http://www.umass.edu/umext/jgerber/ecolit.pdf>

Carson, R. (1962). *Silent spring*. Boston: Houghton Mifflin Company.

Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Thousand Oaks, CA: Sage Publications.

- Chawla, L. (1999). Life paths into effective environmental action. *The Journal of Environmental Education*, 31(1), 15-26.
- Chomsky, N. (1998). *Profit over people: Neoliberalism and global order*. New York: Seven Stories Press.
- Clandinin, D. J., & Connelly, F. M. (1987). Teachers' personal practical knowledge: What counts as "personal" in studies of the personal. *Journal of Curriculum Studies*, 19(6), 487-500.
- Clark, C. M., & Florio-Ruane, S. (2001). Conversation as support for teaching in new ways. In C. M. Clark (Ed.), *Talking shop: Authentic conversation and teacher learning* (pp. 1-15). New York: Teachers College Press.
- Cochran-Smith, M. (1991). Learning to teach against the grain. *Harvard Educational Review*, 51(3), 279-310.
- Collins, R. M. (2000). *More: The politics of economic growth in postwar America*. New York: Oxford University Press.
- Conquergood, D. (1982). Performing as a moral act: Ethical dimensions of the ethnography of performance. *Literature in Performance*, 5(2), 1-13.
- Conquergood, D. (1991). Rethinking ethnography: Cultural politics and rhetorical strategies. *Communication Monographs*, 58, 179-194.
- Corcoran, P. B. (1999). Formative influences in the lives of environmental educators in the United States. *Environmental Education Research*, 5(2), 207-220.
- Coyle, K. (2005). *Environmental literacy in America: What ten years of NEETF/Roper research and related studies say about environmental literacy in the U.S.* Washington, DC: The National Environmental Education & Training Foundation.
- Cranton, P. (1994). *Understanding and promoting transformative learning: A guide for educators of adults*. San Francisco: Jossey-Bass.
- Cranton, P. (1996). *Professional development as transformative learning: New perspectives for teachers of adults*. San Francisco: Jossey-Bass.
- Creswell, J. (2008). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. Upper Saddle River, NJ: Pearson/Merrill Prentice Hall.
- Critser, G. (2003). *Fat land: How Americans became the fattest people in the world*.

Boston, MA: Houghton Mifflin Co.

- Curry, M. W. (2008). Critical friends groups: The possibilities and limitations embedded in teacher professional communities aimed at instructional improvement and school reform. *Teachers College Record*, 114(4), 733–774.
- Daley, S. (2013, January 13). Greece sees gold boom, but at a price. *The New York Times*. Retrieved from <http://www.nytimes.com/2013/01/14/world/europe/seeking-revenue-greece-approves-new-mines-but-environmentalists-balk.html>
- Darling-Hammond, L. (1997). *The right to learn: A blueprint for creating schools that work*. San Francisco: Jossey-Bass Publishers.
- Darling-Hammond, L., & Richardson, N. (2009). Teacher learning: What matters? *Educational Leadership*, 66(5), 46-53.
- Davis, W. (2009). *The wayfinders: Why ancient wisdom matters in the modern world*. Toronto: House of Anansi Press.
- Dietz, R., & O'Neill, D. (2013). *Enough is enough: Building a sustainable economy in a world of finite resources*. San Francisco: Berrett-Koehler Publishers.
- Ecologist, The. (1972). *Blueprint for survival*. New York: Houghton Mifflin Company.
- Ecologist, The (1994). Whose common future: Reclaiming the commons. *Environment and Urbanization*, 6(106), 106-130.
- Editors of Rethinking Schools. (2011, Spring). Our climate crisis is an education crisis. *Rethinking Schools*. Retrieved from http://www.rethinkingschools.org/archive/25_03/edit253.shtml
- Ehrlich, P. (1986). *The machinery of nature*. New York: Simon and Schuster.
- Eisler, R. (2008). *The real wealth of nations: Creating a caring economics*. San Francisco: Berrett-Koehler Publishers.
- Esteva, G. (1992). Development. In W. Sachs (Ed.), *The development dictionary: A guide to knowledge as power* (pp. 1-23). New Jersey: Zed Books.
- Ewing B., Moore D., Goldfinger, S., Oursler, A., Reed, A., & Wackernagel, M. (2010). The Ecological Footprint Atlas 2010. Global Footprint Network. Retrieved from http://www.footprintnetwork.org/images/uploads/Ecological_Footprint_Atlas_2010.pdf

- Feiman-Nemser, S. (2003). What new teachers need to learn. *Educational Leadership*, 60(8), 25-29.
- Fien, J. (1993). *Education for the environment: Critical curriculum theorizing and environmental education*. Geelong: Deakin University.
- Fien, J. (1995). Teaching for a sustainable world: The environmental and development education project for teacher education. *Environmental Education Research*, 1(1), 21-33.
- Flannery, T. F. (2005). *The weather makers: How man is changing the climate and what it means for life on Earth*. New York: Atlantic Monthly Press.
- Foucault, M. (1984). What is Enlightenment? In P. Rainbow (Ed.), *The Foucault reader*. New York: Pantheon Books.
- Frankenberg, R. (1993). *White women, race matters: The social construction of whiteness*. Minneapolis, MN: University of Minnesota Press.
- Freire, P. (2000). *Pedagogy of the oppressed*. New York: Continuum.
- Friedman, T. (2009). *Hot, flat, and crowded: Why we need a green revolution—and how it can renew America*. New York: Picador/Farrar, Straus and Giroux.
- Friedman, T. (2012). We need a second party. *The New York Times*. Retrieved from <http://www.nytimes.com/2012/02/12/opinion/sunday/friedman-we-need-a-second-party.html>
- Fullan, M., & Hargreaves, A. (1991). *What's worth fighting for in your school?* Toronto: Ontario Public School Teachers' Federation.
- Gallup. (2012, March 29). Americans still prioritize economic growth over environment. Retrieved from <http://www.gallup.com/poll/153515/americans-prioritize-economic-growth-environment.aspx>
- George, J. C. (1959). *My side of the mountain*. New York: Dutton.
- Giddens, A. (1990). *The consequences of modernity*. Stanford, CA: Stanford University Press.
- Gillis, J. (2013, January). Not even close: 2012 was hottest ever in U.S. *The New York Times*. Retrieved from <http://www.nytimes.com/2013/01/09/science/earth/2012-was-hottest-year-ever-in-us.html>

- Giroux, H. (1981). *Ideology, culture, and the process of schooling*. Philadelphia, PA: Temple University Press.
- Giroux, H. (2004). *The terror of neoliberalism: Authoritarianism and the eclipse of democracy*. Boulder, CO: Paradigm Publishers.
- Giroux, H. (2012). Can democratic education survive in a neoliberal society? *Truthout*. Retrieved from <http://truth-out.org/opinion/item/12126-can-democratic-education-survive-in-a-neoliberal-society>
- Glazier, J. (2003). Moving closer to speaking the unspeakable: White teachers talking about race. *Teacher Education Quarterly*, 30(1), 73-94.
- Glotfelty, C. (1996). Introduction: Literary studies in an age of environmental crisis. In C. Glotfelty & H. Fromm (Eds.), *The ecocriticism reader: Landmarks in literary ecology* (pp. xv-xxxvii). Athens, GA: The University of Georgia Press.
- Goleman, D. (2009). *Ecological intelligence: How knowing the hidden impacts of what we buy can change everything*. New York: Broadway Books.
- Goleman, D., Bennet, L. & Barlow, Z. (2012). *Ecoliterate: How educators are cultivating emotional, social, and ecological intelligence*. San Francisco: Jossey-Bass.
- Goodell, J. (2008). Change everything now: One of the nation's most mainstream environmentalists says it's time to get a lot more radical. *Orion Magazine*. Retrieved from <http://www.orionmagazine.org/index.php/articles/article/3222/>
- Gore, A. (1992). *Earth in the balance: Ecology and the human spirit*. Boston: Houghton Mifflin.
- Gough, A. (1997). *Education and the environment: Policy, trends, and the problems of marginalization*. Camberwell, Victoria, Australia: Australian Council for Education Research (ACER).
- Greene, M. (1977). Toward wide-awakeness: An argument for the arts and humanities in education. *Teachers College Record*, 79(1), 119-125.
- Greene, M. (1995). *Releasing the imagination*. New York: Teachers College Press.
- Greenall, A. (1987). A political history of environmental education in Australia: Snakes and ladders. In I. Robottom (Ed.), *Environmental education: Practice and possibility*. Geelong, Australia: Deakin University Press.

- Grossberg, L. (2005). Globalization. In T. Bennett, L. Grossberg, & M. Morris (Eds.), *New keywords: A revised vocabulary of culture and society* (pp. 146-150). Malden, MA: Blackwell Publishing.
- Gruenewald, D. A. (2003). The best of both worlds: A critical pedagogy of place. *Educational Researcher*, 32(4), 3-12.
- Gruenewald, D. A. (2004). A Foucauldian analysis of Environmental Education: Toward the socioecological challenge of the Earth Charter. *Curriculum Inquiry*, 34(1), 71-107.
- Gruenewald, D., & Smith, G. (2008). *Place-based education in the global age: Local diversity*. New York: Lawrence Erlbaum Associates.
- Gutmann, A. (1999). *Democratic education*. Princeton, NJ: Princeton University Press.
- Hall, S. (1996). The West and the rest: Discourse and power. In S. Hall, D. Held, D. Hubert, & K. Thompson (Eds.), *Modernity: An introduction to modern societies* (pp. 184-228). Malden, MA: Blackwell.
- Hamilton, L. C. (2010). Education, politics and opinions about climate change evidence for interaction effects. *Climatic Change*, 104, 231-242.
- Hammerness, K., Darling-Hammond, L., Bransford, J., Berliner, D., Cochran-Smith, M., McDonald, M., & Zeichner, K. (2005). How teachers learn and develop. In L. Darling-Hammond & J. Bransford (Eds.), *Preparing teachers for a changing world: What teachers should learn and be able to do* (pp. 358-389). San Francisco, CA: Jossey-Bass.
- Hansen, J. (2009). *Storms of my grandchildren: The truth about the coming climate catastrophe and our last chance to save humanity*. New York: Bloomsbury USA.
- Harvey, D. (2004). *A brief history of neoliberalism*. Oxford: Oxford University Press.
- Hawken, P. (2007). *Blessed unrest: How the largest movement in the world came into being, and why no one saw it coming*. New York: Viking.
- Hawken, P., Lovins, A., & Lovins, L. H. (2000). *Natural capitalism: Creating the next industrial revolution*. Boston: Little, Brown, & Co.
- Hertsgaard, M. (2012, December 10). The end of Pasta: Temperatures are rising. Rainfalls are shifting. Droughts are intensifying. What will we eat when wheat won't grow? *Newsweek*. Retrieved from

- <http://www.thedailybeast.com/newsweek/2012/12/09/bakken-oil-boom-and-climate-change-threaten-the-future-of-pasta.html>
- Hess, D. (2009). *Controversy in the classroom: The democratic power of discussion*. New York: Routledge.
- Hill, H. C. (2009). Fixing teacher professional development. *Phi Delta Kappan*, 90(7), 470-476.
- Hill, D., & Kumar, R. (2009). *Global neoliberalism and education and its consequences*. New York: Routledge.
- Hossay, P. (2006). *Unsustainable: A primer for global environmental and social justice*. New York: Zed Books.
- Huckle, J. (1991). Education for sustainability: Assessing pathways to the future. *Australian Journal of Environmental Education*, 7, 43-62.
- Huckle, J. (1993). Environmental education and sustainability: A view from critical theory. In J. Fien, *Environmental education: A pathway to sustainability* (pp. 43-68). New York: Hyperion Books.
- Hungerford H. R., & Volk, T. (1990). Changing learner behavior through environmental education. *Journal of Environmental Education*, 21(3), 8-21.
- Hursh, D. (2005). The growth of high-stakes testing in the USA: Accountability, markets and the decline in educational equality. *British Educational Research Journal*, 31(5), 605-622.
- Hursh, D. (2007). Assessing No Child Left Behind and the rise of neoliberal education policies. *American Education Research Journal*, 44, 493-518.
- Indigenous Peoples and Globalization Program. (n.d.). International Forum on Globalization. Retrieved from <http://www.ifg.org/programs/indig.htm>
- Ingersoll, R. & Strong, M. (2011). The impact of induction and mentoring programs for beginning teachers: A critical review of the research. *Review of Educational Research*, 81(2), 201-233.
- Intergovernmental Panel on Climate Change. (2007). IPCC fourth assessment report: Climate change 2007. Retrieved from http://www.ipcc.ch/publications_and_data/ar4/syr/en/main.html
- Jackson, P.W. (1974). *Life in classrooms*. Austin, TX: Holt, Rinehart and Winston.

- Jensen, D. (2011, January/February). The tyranny of entitlement. *Orion*, 5-6.
- Jensen, D. (2006). *Endgame, volume I: The problem of civilization*. New York: Seven Stories Press.
- Jensen, D. & Draffen, G. (2003). *Strangely like war: The global assault on forests*. White River Junction, VT: Chelsea Green Publishing Company.
- Jickling, B., & Wal, A. E. (2008). Globalization and environmental education: Looking beyond sustainable development. *Journal of Curriculum Studies*, 40(1), 1-21.
- Jordan, C., & Snow, D. (1992). Diversification, minorities and the mainstream environmental movement. In D. Snow (Ed.), *Voices from the environmental movement: Perspectives for a new era* (pp. 71-109). Washington DC: Island Press.
- Kahn, R. (2010). *Critical pedagogy, ecoliteracy, and planetary crisis*. New York: Peter Lang.
- Keith, L. (2011). The problem. In A. McBay, L. Keith, & D. Jensen, *Deep green resistance* (pp. 21-29). New York: Seven Stories Press.
- Kennedy, M. M. (1999). The role of preservice teacher education. In L. Darling-Hammond & G. Sykes (Eds.), *Teaching as the learning profession: Handbook of teaching and policy* (pp. 54-86). San Francisco: Jossey-Bass.
- Key, E. (2006). Do they make a difference? A review of research on the impact of Critical Friends Groups. National School Reform Faculty. Retrieved from <http://www.nsrffharmony.org/research.key.pdf>
- Knapp, C. E. (1996). *Just beyond the classroom: Community adventures for interdisciplinary learning*. Charleston, WV: ERIC Clearinghouse on Rural Education and Small Schools.
- Korten, D. (2010). *Agenda for a new economy: From phantom wealth to real wealth*. San Francisco, CA: Berrett-Koehler Publishers.
- Labaree, D. (2010). *Someone has to fail: The zero-sum game of public schooling*. Cambridge, MA: Harvard University Press.
- Ladson-Billings, G. (1994). *The dreamkeepers: Successful teachers of African American children*. San Francisco, CA: Jossey-Bass.
- Ladson-Billings, G. (2006). "Yes, but how do we do it?" Practicing culturally relevant

- pedagogy. In J. Landsman & C. W. Lewis (Eds.), *White teachers/diverse classrooms: A guide to building inclusive schools, promoting high expectations, and eliminating racism* (pp. 29-42). Sterling, VA: Stylus.
- Lattimer, H. (2008). Challenging history: Essential questions in the social studies classroom. *Social Education*, 72(6), 326-329.
- Leonard, A. (2010). *The story of stuff: How our obsession with stuff is trashing the planet, our communities, and our health—and a vision for change*. New York: Free Press.
- Leopold, A. (1949). *A sand county almanac and sketches here and there*. London: Oxford University Press.
- Linebaugh, P. (2008). *The Magna Carta manifesto: Liberties and commons for all*. Berkeley, CA: University of California Press.
- Little, J. W. (1988). Seductive images and organizational realities in professional development. In A. Lieberman (Ed.), *Rethinking school improvement*. New York: Teachers College Press.
- Little, J. W. (1990). The persistence of privacy: Autonomy and initiative in teachers' professional relations. *Teacher College Record*, 91(4), 509-536.
- Lortie, D. (1975). *Schoolteacher: A sociological study*. Chicago: University of Chicago Press.
- Lujan, N., Bloom, D., & Watson, C. (2013, January 17). A rumble in the jungle. *The New York Times*. Retrieved from <http://www.nytimes.com/2013/01/18/opinion/a-rumble-in-the-jungle.html>
- Lyll, S. (2013, January 10). Heat, flood or icy cold, extreme weather rages worldwide. *The New York Times*. Retrieved from <http://www.nytimes.com/2013/01/11/science/earth/extreme-weather-grows-in-frequency-and-intensity-around-world.html>
- Madison, D. S. (2005). *Critical ethnography: Method, ethics, and performance*. London: Sage Publications.
- Martusewicz, R., & Edmundson, J. (2005). Social Foundations as pedagogies of responsibility and eco-ethical commitment. In D. W. Butin (Ed.), *Teaching social foundations of education: Contexts, theories, and issues* (pp. 71-92). Mahwah, NJ: Lawrence Erlbaum.
- Martusewicz, R., Lupinacci, J., & Edmundson, J. (2011). *EcoJustice education: Toward*

- diverse, democratic, and sustainable communities*. New York: Routledge.
- McKibben, B. (1989). *The end of nature*. New York: Random House.
- McKibben, B. (2007). *Deep economy: The wealth of communities and the durable future*. New York: Times Books.
- McKibben, B. (Ed). (2011). *The global warming reader: A century of writing about climate change*. London: Penguin Books.
- McLaren, P. & Farahmandpur, R. (2001). Teaching against globalization and the new imperialism: Toward a revolutionary pedagogy. *Journal of Teacher Education*, 52(2), 136-150.
- McCright, A. M., & Dunlap, R. E. (2012). Bringing ideology in: The conservative white male effect on worry about environmental problems in the USA. *Journal of Risk Research*, 16(2), 211-226.
- Meadows, D., Meadows, D. & Randers, J. (1992). *Beyond the limits: Confronting global collapse, envisioning a sustainable future*. Post Mills, VT: Chelsea Green Publishing.
- Meadows, D. H., Meadows, D. L., Randers, J. & Behrens, W. (1972). *The limits to growth: A report for the Club of Rome's Project on the Predicament of Mankind*. New York: Universe Books.
- Mehmet, O. (1995). *Westernizing the Third World: The Eurocentricity of economic development theories*. New York: Routledge.
- Meier, D. (1995). *The power of their ideas: Lessons for America from a small school in Harlem*. Boston: Beacon Press.
- Merchant, C. (1980). *The death of nature: Women, ecology, and the scientific revolution*. San Francisco: Harper & Row.
- Merchant, C. (2001). The death of nature. In M. Zimmerman, J. Callicott, G. Sessions, K. Warren, & J. Clark (Eds.), *Environmental philosophy: From animal rights to radical ecology* (pp. 273-286). New Jersey: Prentice Hall.
- Merchant, C. (2005). *Radical ecology: The search for a livable world*. New York: Routledge.
- Mezirow, J. (1991). *Transformative dimensions of adult learning*. San Francisco: Jossey-Bass.

- Mezirow, J. (1996). Contemporary paradigms of learning. *Adult Education Quarterly*, 46(3), 158-172.
- Mezirow, J. (1997). Transformative learning: Theory to practice. *New Directions for Adult and Continuing Education*, 74, 5-12.
- Miles, M., & Huberman, A. M. (1994). *Qualitative analysis: An expanded sourcebook*. Thousand Oaks, CA: Sage.
- Millennium Ecosystem Assessment. (2005). *Ecosystems and human well-being: Synthesis*. Island Press, Washington, DC. Retrieved from <http://www.millenniumassessment.org/documents/document.356.aspx.pdf>
- Miller, P. (2012, September). Weather gone wild. *National Geographic*, 30-53.
- Moroye, C. M. (2009). Complementary curriculum: The work of ecologically minded teachers. *Journal of Curriculum Studies*, 41(6), 789-811.
- Morris, M. (2002). Ecological consciousness and curriculum. *Journal of Curriculum Studies*, 34(5), 571-587.
- National Climate Assessment and Development Advisory Committee. (2013). Executive summary. Retrieved from <http://ncadac.globalchange.gov/download/NCAJan11-2013-publicreviewdraft-chap1-execsum.pdf>
- Nichols, S. L., & Berliner, D. C. (2007). *Collateral damage: How high-stakes testing corrupts America's schools*. Cambridge, MA: Harvard Education Press.
- Noblit, G., Flores, S. Y., & Murillo, E. G., Jr. (Eds.). (2004). *Postcritical ethnography: An introduction*. Cresskill, NJ: Hampton.
- Norberg-Hodge, H. (1991). *Ancient futures: Learning from Ladakh*. San Francisco: Sierra Club Books.
- North Carolina Environmental Literacy Plan. (n.d.). Retrieved from <http://www.eenorthcarolina.org/images/ELP/nc-elp-draft1.pdf>
- Ong, A. (2006). *Neoliberalism as exception: Mutations in citizenship and sovereignty*. Durham, NC: Duke University Press.
- Orr, D. (1992). *Ecological literacy: Education and the transition to a postmodern world*. Albany: State University of New York Press.

- Orr, D. (2004). *Earth in mind: On education, environment, and the human prospect*. Washington, DC: Island Press.
- Orr, D. (2012, July/August). Look, don't touch: The problem with environmental education. *Orion Magazine*. Retrieved from <http://www.orionmagazine.org/index.php/articles/article/6929>
- Palmer, J. (1993). Development of concern for the environment and formative experiences of educators. *Journal of Environmental Education*, 24(3), 26-30.
- Palmer, J. (1998). *Environmental education in the 21st century: Theory, practice, progress and promise*. New York: Routledge.
- Palmer, P. (1998). *The courage to teach: Exploring the inner landscape of a teacher's life*. San Francisco: Jossey-Bass.
- Paolini, C. (2008). *Brisingr*. New York: Knopf.
- Patton, M. Q. (2002). *Qualitative research and evaluation methods*. Thousand Oaks, CA: Sage.
- Peterson N. J., & Hungerford H. R. (1981). Developmental variables affecting environmental sensitivity in professional environmental educators. In Sacks A. B., Iozzi L. A., Schultz J. M., & Wilke, R. (Eds.), *Current Issues in Environmental Education and Environmental Studies, Vol 7*. Columbus, OH: ERIC.
- Pew Research Center. (2012). More say there is solid evidence of global warming. Retrieved from <http://www.people-press.org/2012/10/15/more-say-there-is-solid-evidence-of-global-warming/>
- Pivnick, J. (2003). In search of an ecological approach to research: A meditation on topos. *Canadian Journal of Environmental Education*, 8, 143-154.
- Plumwood, V. (1991). Nature, self, and gender: Feminism, environmental philosophy, and the critique of rationalism. *Hypatia*, 6(1), 3-27.
- Plumwood, V. (1993). *Feminism and the mastery of nature*. New York: Routledge.
- Plumwood, V. (2002). *Environmental culture: The ecological crisis of reason*. New York: Routledge.
- Polanyi, M. (1944). *The great transformation: The political and economic origins of our time*. Boston: Beacon Press.

- Pollan, M. (2009). *The omnivore's dilemma: The secrets behind what you eat*. New York: Penguin Group.
- Postman, N. & Weingartner, C. (1969). *Teaching as a subversive activity*. New York: Delacorte Press.
- Putnam, R. T., & Borko, H. (1997). Teacher learning: Implications of new views of cognition. In B. J. Biddle, T. L. Good, & I. F. Goodson (Eds.), *International handbook of teachers and teaching* (Vol. 2, pp. 1223-1296). Dordrecht, The Netherlands: Kluwer.
- Rees, W. (1992). Ecological footprints and appropriated carrying capacity: What urban economics leaves out. *Environment and Urbanization*, 4(2), 121-130.
- Reid, A., & Scott, W. (2006). Researching education and environment: Retrospect and prospect. *Environmental Education Research*, 12(3-4), 571-587.
- Reynolds, H., Brondizio, E. S., Robinson, J. M., Karpa, D., & Gross, B. L. (2010). *Teaching environmental literacy: Across campus and across the curriculum*. Bloomington: Indiana University Press.
- Ristau, J. (2011). How you can become a commoner. On the Commons. Retrieved from <http://onthecommons.org/magazine/how-you-can-become-commoner>
- Ritchie, S. (2012). Incubating and sustaining: How teacher networks enable and support social justice education. *Journal of Teacher Education*, 63(2), 120-131.
- Robottom, I. (Ed). (1987). *Environmental education: Practice and possibility*. Geelong: Deakin University.
- Rockstrom, J., Steffen, W., Noone, K., Persson, A., Stuart Chapin, F., ... Foley, J. A. (2009). A safe operating space for humanity. *Nature*, 461, 472-475.
- Ross, E. W., & Gibson, R. (2007). *Neoliberalism and education reform*. Cresskill, NJ: Hampton Press.
- Rothberg, R. (1986). Dealing with the problems of teacher isolation. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 59(7), 320-322.
- Roy, A. (1999). *The cost of living*. New York: Modern Library.
- Sachs, W. (Ed.). (1992). *The development dictionary: A guide to knowledge as power*. London: Zed Books.

- Sale, K. (1980). *Human scale*. New York: Coward, McCann & Geoghegan.
- Sassen, S. (1998). *Globalization and its discontents: Essays on the new mobility of people and money*. New York: New Press.
- Saul, J. R. (2005). *The collapse of globalism: And the reinvention of the world*. Toronto, ON: Viking Canada.
- Sauve, L. (2005). Currents in environmental education: Mapping a complex and evolving pedagogical field. *Canadian Journal of Environmental Education*, 10(1), 11-37.
- Saylan, C. & Blumstein, D. (2011). *The failure of environmental education (and how we can fix it)*. Berkeley: University of California Press.
- Schlosser, E. (2005). *Fast food nation: The dark side of the all-American meal*. New York: Harper Perennial.
- Scholte, J. A. (2000). *Globalization: A critical introduction*. New York: Palgrave.
- Schor, J. B. (2010). *Plentitude: The new economics of true wealth*. New York: The Penguin Press.
- Schumaker, E. F. (1973). *Small is beautiful: Economics as if people mattered*. New York: Perennial Library.
- Scruton, R. (2012). *How to think seriously about the planet: The case for an environmental conservatism*. New York: Oxford University Press.
- Shellenberger, M., & Nordhaus, T. (2004). The death of environmentalism: Global warming politics in a post-environmental world. Retrieved from: http://www.thebreakthrough.org/PDF/Death_of_Environmentalism.pdf
- Shiva, V. (1993). *Monocultures of the mind: Perspectives on biodiversity and biotechnology*. London: Zed Books.
- Shiva, V. (1997). *Biopiracy: The plunder of nature and knowledge*. Boston: South End Press.
- Shiva, V. (2005). *Earth democracy: Justice, sustainability, and peace*. Cambridge, MA: South End Press.
- Smith, G. A. (2002). Place-based education: Learning to be where we are. *Phi Delta Kappan*, 83, 584-594.

- Smith, G. A. & Sobel, D. (2010). *Place- and community-based education in schools*. New York: Routledge.
- Smith, G. A. & Williams, D. R. (1999). *Ecological education in action: On weaving education, culture, and the environment*. Albany, NY: State University of New York Press.
- Sobel, D. (2004). *Place-based education: Connecting classrooms and communities*. Great Barrington, MA: The Orion Society.
- Speth, J. G. (2004). *Red sky at morning: America and the crisis of the global environment*. New Haven: Yale University Press.
- Speth, J. G. (2008). *The bridge at the edge of the world: Capitalism, the environment, and crossing from crisis to sustainability*. New Haven: Yale University Press.
- Spring, J. (1998). *Education and the rise of the global economy*. Mahwah, NJ: L. Erlbaum Associates.
- Spring, J. (2003). *Educating the consumer-citizen: A history of the marriage of schools, advertising, and the media*. Mahwah, NJ: L. Erlbaum Associates.
- Spurlock, M. (2005). *Don't eat this book: Fast food and the supersizing of America*. New York: G.P. Putnam's Sons.
- Stapp, W. (1969). The concept of environmental education. *The Journal of Environmental Education*, 1(1), 30-31.
- Stein, M. K., Smith, M. S., & Silver, E. A. (1999). The development of professional developers: Learning to assist teachers in new settings in new ways. *Harvard Educational Review*, 69(3), 237-269.
- Sterling, S. (2001). *Sustainable education: Re-visioning learning and change*. Totnes: Green Books for the Schumacher Society.
- Stevenson, R. (1987). Schooling and environmental education: Contradictions in purpose and practice. In I. Robottom (Ed.), *Environmental education: Practice and possibility*. Geelong, Victoria: Deakin University Press.
- Stibbe, A. (Ed). (2009). *The handbook of sustainability literacy: Skills for a changing world*. Totnes, UK: Green Books.
- Stiglitz, J. G. (2002). *Globalization and its discontents*. New York: W. W. Norton.

- Stone, M. (2009). *Smart by nature: Schooling for sustainability*. Berkeley: University of California Press.
- Stone, M., & Barlow, Z. (1995). *Ecological literacy: Educating our children for a sustainable world*. San Francisco: Sierra Club Books.
- Strife, S. (2010). Reflecting on environmental education: Where is our place in the green movement? *The Journal of Environmental Education*, 41(3), 179-191.
- Suddaby, R. (2006). From the editors: What grounded theory is not. *Academy of Management Journals*, 49(4), 633-642.
- Sullivan, C. (2009, August 5). Recyclers, scientists probe great Pacific garbage patch. *The New York Times*. Retrieved from <http://www.nytimes.com/gwire/2009/08/05/05greenwire-recyclers-scientists-probe-great-pacific-garba-57979.html>
- Sward L. L. (1999). Significant life experiences affecting the environmental sensitivity of El Salvadoran environmental professionals. *Environmental Education Research*, 5(2), 201-206.
- Tanner, T. (1980) Significant life experiences: A new research area in environmental education. *Journal of Environmental Education*, 11(4), 20-24.
- Taubman, P. (2009). *Teaching by numbers: Deconstructing the discourse of standards and accountability in education*. New York: Routledge.
- Thomashow, M. (1995). *Ecological identity: Becoming a reflective environmentalist*. Cambridge: MIT Press.
- Thong, T. (2012). "To raise the savage to a higher level": The Westernization of Nagas and their culture. *Modern Asian Studies*, 46(4), 893-918.
- Tilbury, D. (1995). Environmental education for sustainability: Defining the new focus of environmental education in the 1990s. *Environmental Education Research*, 1(2), 195-212.
- (UNCED) UN Conference on Environment and Development (1992). *Agenda 21: Action plan for the next century*. Rio de Janeiro: UNCED.
- UNESCO-UNEP (1976). The Belgrade Charter. *Connect*, I, 1, 1-2.
- UNESCO-UNEP (1978). The Tbilisi Declaration. *Connect*, III, I, 1-8.

- UNESCO (2003). *United Nations Decade of Education for Sustainable Development* (January 2005- December 2014). Framework for a Draft International Implementation Scheme, July. Paris: UNESCO.
- Urbina, I. (2013, March 18). Unwanted electronic gear rising in toxic piles. *The New York Times*. Retrieved from <http://www.nytimes.com/2013/03/19/us/disposal-of-older-monitors-leaves-a-hazardous-trail.html>
- van Matre, S. (1990). *Earth education: A new beginning*. Warrenville, IL: The Institute for Earth Education.
- Vescio, V., Ross, D., & Adams, A. (2008). A review of research on the impact of professional learning communities on teaching practices and student learning. *Teaching & Teacher Education, 24*(1), 80-91.
- Wackernagel, M., & Rees, W. (1996). *Our ecological footprint: Reducing human impact on the earth*. Philadelphia: New Society Publishers.
- Walljasper, J. (2010). *All that we share: How to save the economy, the environment, the Internet, democracy, our communities and everything else that belongs to all of us*. New York: The New Press.
- Warren, K. (2000). *Ecofeminist philosophy: A Western perspective on what it is and why it matters*. Lanham, MD: Rowman & Littlefield.
- Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. New York: Cambridge University Press.
- White, L. (1967, March 10). The historical roots of our ecologic crisis. *Science, 155*(3767), 1203-1207.
- Wiggins, G. & McTighe, J. (2005). *Understanding by design. Expanded 2nd Ed*. USA: Association for Supervision and Curriculum Development.
- Willis, P. (1977). *Learning to labor: How working class kids get working class jobs*. New York: Columbia University Press.
- Wilson, E. O. (2003). *The future of life*. New York: Vintage Books.
- Wilson, S. M., & Berne, J. (1999). Teacher learning and the acquisition of professional knowledge: An examination of research on contemporary professional development. In A. Iran-Nejad & P. D. Pearson (Eds.), *Review of Research in Education, 24*, 173-209.

Wong, E. (2013, January 30). Beijing takes steps to fight pollution as problem worsens. *The New York Times*. Retrieved from <http://www.nytimes.com/2013/01/31/world/asia/beijing-takes-emergency-steps-to-fight-smog.html>