Expanding the Field: Revisiting Environmental Education Principles Through Multidisciplinary Frameworks

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ABSTRACT: In response to calls for discourse that builds on the substantive structure of environmental education in efforts to further the scope of the field, this article reexamines key principles of environmental education through the multidisciplinary lenses of critical pedagogy, the environmental justice movement, and more recent definitions of place-based education. Understanding that environmental education’s key concepts of environment and environmental literacy are culturally specific—not universal—ideas opens the field for more diverse, locally appropriate, and inclusive pedagogies. By reflecting on environmental education’s shortcomings in the field, revisiting its foundational concepts and themes, and integrating multidisciplinary methodologies, the author makes a case for broadening the scope of what is included in environmental education discourse and continuing to challenge the present and future of its theory and practice.

KEYWORDS: Environmental education theory, environmental literacy, multicultural environmental education

As a teacher in a small, rural high school in northern New Mexico, I drew heavily on my training as an environmental educator to develop dynamic and engaging curriculum. My students and I studied our local ecological and biological environment through watershed monitoring, ecosystem exploration, multilayered mapping, and field collaborations with local researchers. We linked our river valley’s ecosystems with regional and global weather patterns, water cycles, and migration routes. We backpacked; hiked; collected data, identified insects, restored trout habitat, and tended native fish aquariums. We wrote and illustrated interpretive material and developed and taught a “field school” for local fourth graders on the banks of the valley’s small river. We researched controversial local issues like native fish reintroduction; access and

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management of public lands; and we took action by writing letters, summarizing field reports, and attending public meetings.

Still, something was missing. In the midst of our hip waders, maps, water quality testing equipment, and computers was an unanswered question of history, culture, politics, and power. The student population at our school was diverse; students represented two Native American Pueblos, a Hispanic ranching and farming community, and the more recently established Anglo community. Histories of colonization, slavery, usurped land grants, and contested territories hovered over our locally based curriculum. These contentious legacies were manifest in the day-to-day lives of my students through poverty, inequality, unequal access, school failures, and racial tensions. My students protested when assigned mixed ethnicity study groups, spewed hostile remarks at SUV’s of wealthy tourists visiting the region on weekends, and longed to “leave the valley for good.”

To teach in the valley, I commuted an hour each way from my home in a nearby urban area. As the months and years passed, I became increasingly aware of the awkward power I possessed not only because I was a teacher, but because I was White and middle class. Furthermore, my curriculum content and teaching methodologies reproduced a specific set of dominant cultural values reflective of the types of teaching and learning I was trained to value through years of schooling in dominantly White, middle-class schools and institutions. Although rich in field and experiential learning, my classroom curriculum did not address the social and cultural aspects of the valley’s communities. I failed to include the subtle and pervasive ways race, class, history, land ownership, and management shaped and framed local ecological and biological systems. Without this knowledge, my students and I could not holistically understand the local relationships between humans and the land. As an environmental educator, I was not trained for this.

Linda McDowell (1999), a feminist geographer, writes that places are “contested, fluid, and uncertain” (p. 4). To McDowell, places are more than ecological systems and biological networks within which humans are neatly embedded. Environments are cultural, social, and political constructs, where the struggle for meaning and definitions of place determines human interventions and ways of engaging with those places. Environmental education has almost always included a subtext of sociocultural issues, although the field has not embraced social studies and theories with the depth and directness of fields such as environmental justice, critical pedagogy, and place-based education (R. Bullard, n.d.; Freire, 1970; Gruenewald, 2003; McLaren, 1989; Turner & Pei Wu, 2002).

In this article, I take up the call for discourse made by Rick Wilke (Hungerford, 2002b) and John Disinger (2001; Hungerford, 2002a), who urge educators and researchers to build on the substantive structure of environmental education and take creative actions toward furthering the scope of the field. I explore how fields such as environmental justice and critical pedagogy critique, support, and advance the role of sociocultural issues and studies in environmental education. These fields challenge environmental educators to rethink notions of environment and environmental literacy by addressing the ways power, race, class, gender, and politics shape human interactions with the land. I discuss how environmental education can redefine the terms environment and environmental literacy so the ideas originate from and resonate with locally and culturally appropriate knowledge, values, and ways of living.

Educating students in what Orr (2005) calls “the art of living well where they are” (p. 92) is a political act; Stepp et al. (1969) stated that environmental education is an attempt to direct student behaviors and citizen identities. Therefore, environmental educators must be honest and critical about the biases, values, and cultural ideas that guide and are reproduced through their teaching and curriculum. To begin this task, I explore the types of knowledge and experience that are included in and excluded from the discourse and pedagogies of environmental education. I hope to further the role of race, class, gender, and justice in environmental education by identifying inspiration and resources
from other disciplines that will help move environmental education in more dynamic, inclusive, and relevant directions. There are many ways to define and practice the art of living well.

**A Case for Widening the Lens**

In some contexts, even the most well-intentioned environmental education fails to resonate with an authentic understanding of what it means to live well in a place. I discovered that regardless of how grounded my curriculum was in local contexts and familiar places or no matter how exciting my curriculum was on watersheds, land use, or ecology—any efforts to make relevant impacts on student growth and community involvement would be incomplete unless my students and I addressed the issues of the community’s rocky interracial histories, its poor economic status, and my position as an outsider directing curricular content. For my students to understand environmental processes and systems, we had to first come to terms with the human histories that contextualize, shape, and define those systems.

Environmental educators have defined their subject as fostering an awareness of environmental issues and problems, developing the skills to solve those problems, and inspiring a willingness to make effective decisions as action-oriented citizens (North American Association for Environmental Education [NAAEE], 2004; Stapp et al., 1969; United Nations Educational, Scientific, and Cultural Organization, 1978). Roth (1970) and others (see Disinger & Roth, 1992; McKeown-Ice & Dendinger, 2000) have revised this definition to include relevant issues in social justice, economics, politics, and culture. Although promoted as interdisciplinary, environmental education is traditionally found in schools as an add-on to science curriculum (Simmons, 1989) and is poorly researched in multidisciplinary contexts (Hoody, 1995). To address the lack of critical environmental education curriculum in the social sciences, McKeown-Ice and Dendinger (2000) developed a list of 63 foundational concepts in sociopolitical-cultural studies that were “prerequisites to understanding or analyzing environmental issues” (p. 38). Their list, grounded in standards of social studies curriculum such as “time, continuity, and change” and “individuals, groups, and institutions” (p. 39), offers an important challenge to environmental educators who commonly confine environmental education to science-based content and decision making. This was the case in my classroom; because of a district-wide emphasis on state science standards, I limited environmental education to areas that directly supported the learning of science content.

As McKeown-Ice and Dendinger (2000) emphasize, locating environmental education in scientific frameworks limits research methodologies to scientific content and ways of knowing about the world. Although the NAAEE (2004) environmental education standards include multidisciplinary guidelines for sociocultural studies of the environment, they prioritize scientific methodologies in environmental education. I discovered in my classroom that although scientific methods produced rich and insightful data about human impacts on local ecology and biology, these methods did not address the more complex political and social realities of life in the valley. To understand subtle social tensions and histories related to race and class, we needed alternate methodologies and ways of understanding how people in the valley experience and understand their environment.

**Alternative Frameworks**

The environmental justice movement surfaced in the 1960s and 1970s as efforts by the mainstream environmental movement to protect and improve national landscapes failed to resonate or find relevance with life in nonmiddle- and nonupper-class White communities (Bullard, n.d.). Environmental justice organizers centralized race and class as a way of understanding unequal human
environments and living conditions. Building on efforts of the labor movement, civil rights movement, the Chicano movement, and the environmental movement, grassroots environmental justice organizers built a movement that views the environment through links of “labor and public health, recreation to housing, culture and history; it breaks down the boundaries between work environments and open space, urban and rural” (Turner & Pei Wu, 2002, p. 1). Bullard (1990) describes marginalized communities in Houston, TX, and Warren County, NC, as the founders of the environmental justice movement when they organized to improve local living conditions by fighting for clean air, water, and soil during the late 1970s. These communities demonstrated that their racial and economic make-up was directly correlated with unequal exposure to environmental pollutants.

Turner & Pei Wu (2002) cite studies explaining that an individual’s positionality or social identity (race, class, gender, sexuality) shapes the way a person experiences and perceives the environment. This argument challenges the notion of wilderness and nature as unpeopled, pure, pristine, and in need of protection, which the environmental movement promotes as universal concepts. Critical explorations of positionality reframe notions of environment and nature as culturally specific ideas belonging to the dominant, middle- and upper-class White culture. In addition, researchers argue these culturally specific notions reproduce dominant hierarchies through unequal policies and practices that influence housing, recreation, and work opportunities. To counter the impacts of these ideas, environmental justice claims a broad view of the environment: “where all productive, creative, and reproductive human activity occurs (rather than where it doesn’t)” (Turner & Pei Wu, p. 4). In particular, environmental justice is interested in the connections between “Where we live, work and play” and “who gets to play, work, or live, and under what conditions” (Turner & Pei Wu, p. 4).

Critical theorists describe intersections of place, power, and identity as “territories” (Allen, 2002), because the term better represents the “spatialization of power and identity, thoughts and behavior, and materiality and subjectivity” (p. 127). Because of these frameworks, environmental justice poses questions about the environment like: “Who determines what happens here? At what cost? To whose benefit? Why not somewhere else?”

Although environmental education has expanded its notion of the environment to include schoolyards, neighborhoods, and homes (see Western Regional Environmental Education Council, 1975, 1983) the diverse cultural lenses environmental justice uses to understand environments can be direct future projects in environmental education. Going beyond the physicality of places, environmental justice explores the conceptual constructs of place—how people define environments on the basis of cultural values and ideas and how those definitions affect the ways inhabitants live in those environments. The environmental justice movement urges environmental educators to include the ways hierarchies of race and class create meaning and determine policies that unequally shape the ways diverse populations live in and experience particular places. In my classroom, we needed to look at how histories of colonization and land appropriation, as well as racial and socioeconomic tensions created policies that appropriated and redistributed land for unequal and disputed purposes (protection, recreation, agriculture, grazing, inhabitation, waste disposal). Historically, these dominant and oppressive notions of land and its appropriate management strategies were at odds with the ways cultural groups in the community lived. Still relevant in community conflicts today, these different ideas about the management of the valley’s land directly impact the ecology, biology, and social conditions of the community.

Environmental education, with an expansive definition of environment, incorporates diverse perspectives of what it means to live well in a place. Educators critique definitions of environment and look closely at the ideas and concepts included (i.e., ecological systems, watershed boundaries) and those excluded (i.e., historic and present land disputes, colonial legacies). Instead of conceptualizing
the environment as a place where humans interact with ecological systems, the environment becomes a place rich with dynamic cultural, social, economic, political, historical contexts and perspectives that frame and construct the ecological processes within them.

**Environmental Literacy**

A recurring theme in literature defining environmental education is the centrality of environmental literacy (Disinger & Roth, 1992; NAAEE, 2004; C. E. Roth, 1992; Volk & Cheak, 2003; Wilke, 1995). Most definitions of environmental literacy include some variation of Disinger and Roth's four components: knowledge, skills, effect, and behavior. For example, Wilke writes that environmental literacy instruction requires developing environmental knowledge, fostering the ability to work towards balancing quality of life and the environment and it “needs to focus on developing responsible environmental behavior” (p. 28). In establishing the environmental literacy requirement for undergraduates at the University of Georgia, its Environmental Literacy Committee (2000) determined that students are environmentally literate if they can understand and think critically about the following six criteria: (a) basic scientific principles that govern natural systems, using these to understand the limits and major factors associated with the earth’s capacity to sustain life; (b) linkages among all living things and their dependency on each other as well as the physical environment; (c) consequences of human activity on local, regional, and global natural systems; (d) impact of changes within natural systems of life, health, and welfare; (e) cultural, economic, and political forces—both past and present—that affect environmental attitudes and decision making; and (f) role of ethics and morality in individual and group decision making related to the environment.

The Middle School Environmental Literacy Instrument (Hungerford, Ramsey, Volk, & Bluhm, 1993) was designed to measure students' environmental literacy based on eight categories: (a) knowledge of issues, (b) ecological foundations, (c) issue identification, (d) issue analysis, (e) action planning, (f) perceived knowledge of action, (g) perceived skill in action, and (h) self-reported action.

One of the key features in all these definitions of environmental literacy is an understanding of environmental science content knowledge. Content knowledge is so essential that the focus of the Independent Commission on Environmental Education’s (ICEE) study, *Are we building an environmental literacy?* (1997) was to assess the accuracy of the environmental science and economics content knowledge in environmental education curricular materials (Salmon, 2000). For environmental educators, fostering environmental literacy is an essential objective. Central to that goal is the belief that imparting a body of environmental science knowledge to students leads to specific types of decision making and active citizenship.

As a broad concept, literacy can be defined as “tools for reading the world—bodies of knowledge, skills, and social practices with which we understand, interpret, and use the symbol systems of our culture” (quoted in Hull, Mikulecky, St. Clair, & Kerka, 2003, p.2). Because the notion of literacy embodies culturally specific epistemologies and often shapes school curriculum, it has been critiqued for its potential to oppress marginalized populations by reproducing dominant ideologies and hierarchies of knowledge (Giroux, 1987). Thus, the concept of literacy has been revised to include multiple socially and culturally diverse ways of reading the world (Freire & Macedo, 1987) and further understood as “the ability to master discourses, defined as ways of being in the world that integrate particular ways of saying, writing, doing, valuing, and believing” (quoted in Hull et al., p. 2).

It is useful to examine discourse on literacy as a way to reframe the concept of environmental literacy. By broadening the lens, environmental literacy can be understood as a culturally specific body of knowledge that fosters particular ways of thinking and acting in the world. Claiming that the ultimate goal of environmental education is the development of an environmentally literate citizenry...
(NAAEE, 2004) makes environmental education a deliberately political act. It is essential that environmental educators look critically at the ways we define, describe, and engage with terms like environmental literacy to illuminate our biases and culturally specific pedagogical goals. What and whose knowledge are we including and excluding?

In particular, the centrality of scientific content to environmental literacy is problematic. Hull, Mikulecky, St. Clair, and Kerka (2003) write:

An irony lies at the heart of the accepted approach to environmental literacy. The emphasis upon scientific understanding enshrines Western science as the primary means for humans to engage with the environment. However, it should be noted that there are many ways of looking at the relationship between our species and nature...If critical thought and action are indeed central components of environmental literacy, surely critical reflection upon Western science is one of the most fundamental and potentially insightful aspects of education for environmental literacy. Science cannot be accepted as a neutral endeavor made to serve more or less desirable ends, but its inherent assumptions about nature and the place of humans should be examined. (p. 16)

Assuming that teaching scientific content is not a political act (see position of Competitive Enterprise Institute, Disinger, 2001) is shortsighted and clearly reproduces the dominance of western scientific ways of knowing in epistemological hierarchies.

Although environmental educators and researchers have long argued that environmental education is much more than science education (Hungerford, 2005), St. Clair is urging that environmental educators do more than simply broaden the scope of environmental education to include sociocultural studies. We need to look critically at the ways primarily dominant, White, western tradition of scientific knowledge, inquiry methodologies, and decision-making behaviors (as "environmentally literate citizens") shape environmental education methods and practices. In my classroom, a central disconnect between students and learning was the fact that by prioritizing scientific investigations of place, I was excluding and devaluing indigenous ways of knowing and community experiential knowledge. Failing to critique the role of science and its reproduction of dominant, White, western ways of knowing, and accepting those views as a universal standard my curriculum and teaching marginalized all other ways of learning, experiencing, and coming to know place.

In addition, prioritizing a body of "objective" scientific content knowledge within environmental literacy without critical reflection posits the "scientific" environment in opposition to culture. This dualism differentiates environment and culture as separate categories. Concepts and issues are either of nature, science, and environment or of culture, humans, and society. These ideological separations fail to take into account the ways in which culture is responsible for producing the meanings we attribute to environment, nature, and place (Cronon, 1995; Williams, 1980). Science is particularly dangerous because of this discourse of objectivity. It assumes nonbiased epistemologies and methodologies; therefore, its findings carry the weight of essential truths. Critical research has demonstrated that science, like all epistemologies, is embedded within and shaped by cultural values, perspectives, and biases (Haraway, 1999; Latour, 1999).

There is nothing innately wrong with environmental education’s concept of environmental literacy. But there is a danger inherent in universalizing a version of environmental literacy as a political concept that privileges culturally specific knowledge and civic participation. By failing to recognize and deconstruct the White, western values and ideologies that dominate the discourse of environmental literacy, environmental education explicitly promotes and reproduces hierarchical systems of knowledge and excludes multiple ways of knowing and living in the world. For
example, Cajete (1994) describes the foundational characteristics of indigenous education and explains that

Traditional Indian education represents an anomaly for the prevailing objectivist theory and methodology of Western education . . . The mindset of objectivism, when applied to the field of Indian education, excludes serious consideration of the relational reality of Indian people, the variations in Tribal and social contexts, and the processes of perception and understanding that characterize and form its expressions. (p. 21)

Using science to construct a body of knowledge without critical explorations of its connections to culture, power, and inequity is equally dangerous. It becomes too easy to defer decision making and critical thinking to science and scientists without honoring other viewpoints, experiences, and perspectives. The question then becomes, how does environmental education move forward in ways that foster and support local and critical community environmental literacies? How do environmental educators advance an environmental literacy that is grounded in ways of knowing authentic to the communities where we live and teach? How does environmental literacy incorporate diverse epistemologies and political actions that together work towards healthy environments, justice, and individual and community agency?

Moving Forward

Donna Haraway (1999) takes on the hierarchical nature of science by advocating for knowledge production through “situated knowledges” (p. 176) and partial perspectives. She writes, “we need to learn in our bodies, endowed with primate color and stereoscopic vision, how to attach the objective to our theoretical and political scanners in order to name where we are and where we are not, in dimensions of mental and physical space we hardly know how to name” (p. 177). Haraway argues that knowledge comes from somewhere, someone, some body. She does not lend faith to discourses, basic principles, or truths that come from objective sources. She claims true understanding is in the messy collective of partial perspectives that illuminate “connections and unexpected openings” (p. 182) in what we know. Haraway’s ideas open the door for environmental educators to utilize multiple ways of knowing about and acting within the world and its environments, provided we remain critical of the methods, perspectives, and knowledge we produce.

The expansive potential that comes from relying less on scientific environmental knowledge is evident in Gruenewald’s (2003) description of place-based education.

Place-based educators do not dismiss the importance of content and skills, but argue that the study of places can help increase student engagement and understanding through multidisciplinary, experiential, and intergenerational learning that is not only relevant but potentially contributes to the well-being of community life. (p. 7)

Gruenewald urges merging the emphasis on place, self, and community inherent in place-based pedagogies with the multiple epistemologies of race, class, and gender used in critical pedagogies to educate for social and environmental justice. Such a merger provides a useful framework for environmental educators working toward an inclusive disciplinary identity and expansive curriculum that engages students in critical learning about how to better care for themselves, each other, and the places in which they live, work and play.

In southeast San Francisco, a powerful project in environmental education is taking place at Literacy for Environmental Justice (LEJ). Working in multiple capacities in its targeted neighbor-
hoods, LEJ employs and trains local youth as community organizers around issues such as food access, open space restoration, and environmental health. Literacy for Environmental Justice is also involved in schools through its urban environmental education programs that utilize project-based learning models to guide secondary teachers and their students through collaborative planning, background and field research, empowering action projects and evaluation regarding issues that impact students’ communities. Founding director Dana Lanza (2005) writes,

LEJ’s work is designed to help young people recognize and articulate what they love and to find ways to advocate for and protect those things. Themes emerging over the years include community, land, children, health, and civil rights.” (p. 218)

LEJ grew out of a need Lanza identified while failing to find environmental organizations that could address issues of toxins in southeastern San Francisco neighborhoods. She explains,

For too long people of color, low-income people, and youth have been forgotten or intentionally marginalized from efforts to heal ecological systems, revitalize cities, and conserve precious resources. Outreach efforts are often culturally inappropriate because target populations are minimally represented in environmental fields. The underrepresentation of low-income people and people of color enables environmental inequity to continue because these populations have no forum to share their voices and talents. (p. 226)

By building on youths’ experience and knowledge of their community, LEJ attempts to foster culturally appropriate environmental education and community organizing projects. Programs like Literacy for Environmental Justice provide examples of how environmental education can resonate with local communities by grounding education efforts in local knowledge, needs, and concerns.

Reflection and Expansion

During the years I taught in the valley, I exposed my students to an environmental education curriculum grounded in environmental science that made few authentic connections with the sociocultural issues of race, class, gender, and justice that shaped the places we studied. Instead, by emphasizing scientific knowledge and methodologies, I devalued students’ cultural and community experiences and knowledge and limited our learning potential. Because we asked questions, selected investigations, and followed methodologies grounded in western scientific frameworks, the answers and knowledge we produced were limited. Environmental education, in this case, did not construct cohesive explorations and understandings of what it meant to live in the valley. My students and I had a wonderful time and, we learned a great deal, but I wish I could go back and do things differently.

I remind myself, however, that an educator who is unwilling to reflect on practice, restructure pedagogies, reinvent teacher identity, and improve opportunities for student learning is useless in furthering the field of education. In the same way, a stagnant discipline, unwilling to reflect, restructure, and reimagine itself will not continue to thrive and evolve in relevant, useful ways. Environmental education will be well served by continuing to expand its discourse around the role of race, class, gender, and justice. There is room for growth through deconstructing the essentialized terms and guiding principles that environmental education assumes universal. There is inspiration to be found by reaching out to other disciplines that approach sociocultural and environmental issues in unique and holistic ways.

Rich theories, disciplines, and programs offer tools, ideas, and inspiration for environmental education to do the critical self-reflection and expansive re-identification needed to become a more inclu-
sive, interdisciplinary, and progressive field. It is a risky endeavor to reimagine environmental education through unfamiliar lenses that critique established frames of reference and guiding principles. Educators and researchers must risk new ideas to develop creative approaches to environmental education. Looking to disciplines like environmental justice, critical pedagogy, and place-based education and exploring critiques of western science to deconstruct environmental education’s essential principles allows educators to reconstruct environmental education in dynamic ways. That, as Disinger has said (Hungerford, 2002) is “preferable to continuing to wallow in a deepening morass of yesterday’s—and today’s—circularities, conundrums, and shortcomings” (p. 11). It is worthwhile and essential to reconsider and restructure the ways in which environmental education operates and defines itself.

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