

## Leveraging Place for Critical Sustainability Education: The Promise of Participatory Action Research

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**Abstract:** Effective sustainability education is constrained, in part, by an inability to consistently define what it is, who it is for, and how it can best address present-day concerns. Often reduced to a set of behaviors with a future orientation for intergenerational security, sustainability loses the immediacy and importance of issues like hunger, homelessness, and the impact of toxic industry practices on real people in real communities, despite the fact that these all represent foundational aspects of sustainability. *Critical sustainability* harnesses place and community to make connections between equity, ecology and economy explicit. Requiring a deep connection with the socio-ecological landscapes of our experiences, critical sustainability utilizes individual and community identities in working towards resilience. In this paper, we explore the ways that participatory action research (PAR) can leverage place and community to disrupt systems of power and privilege and demonstrate this approach as both effective pedagogy and a powerful orientation toward addressing community-level climate change adaptation. We contend that critical sustainability education requires sincere engagement with place, along with the shared, community-driven knowledge production that is the cornerstone of PAR.

**Keywords:** critical sustainability, resilience, climate change adaptation, participatory action research, socio-ecological systems

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## **Introduction**

Education for sustainability cannot be effective if presented as an ethical exercise for the sake of future generations. It must be relevant and useful in addressing basic human needs today; needs that are dependent on functioning ecological systems. This requires thoughtful and complex understandings of ecological limits, resilience, equity, and economic systems. As such, sustainability education needs to provide students with the capacity to deconstruct socio-environmental systems that support and maintain structural violence and injustice. While the perceived importance of, interest in, and commitment to sustainability across college campuses continue to increase (Vincent, 2012; Ward et al, 2015), it is not clear that effective sustainability education is following a similar trajectory (Sherman, 2008; Vincent, 2012). Superficial, ambiguous, and evolving constructions of sustainability (Liu, 2009; Mulligan, 2015), and a lack of conceptual understanding of big ideas impede effective sustainability education. As such, students are prone to understand good adult hygiene – e.g., recycling (Leonard, 2012) – as equivalent to sustainability (Sherman, 2008).

Different disciplinary and epistemological approaches tend to orient academics, students, and citizens toward particular techniques for addressing the interconnected issues of ecology, economy, and equity. As such, sustainability educators must effectively integrate conceptual material across disciplinary boundaries, framing issues as universally relevant, approachable, and requiring diverse expertise. While key concepts in the social and natural sciences – such as systems thinking, interdependence, limits to growth, and both inter- and intra-generational equity – can guide us in this pursuit (Sherman, 2008), there remain profound challenges in bridging disciplinary ways of thinking and generating knowledge (Lang et al., 2010; Strober, 2010).

Systems thinking reveals connections between consumption-related ecological degradation and justice, making issues more compelling and societally relevant (Cachelin, Paisley & Rose, 2014). And understanding that limits define ecological operating laws of the planet mandates consideration of both inter- and intra-generational equity, helping to make sense of the conflicted conceptual evolution of sustainability and sustainable development (see Robinson, 2004). Yet, often, disciplinary thinking impedes sustainability education (Ward et al., 2015).

Here, we suggest that place-based approaches to sustainability education may ameliorate definitional, temporal, and disciplinary problems that undermine the relevance and complexity of sustainability. We first trace contested notions of sustainability, and make the case for a critical understanding of sustainability that challenges power dynamics in socio-ecological systems. We then describe the importance of place to critical sustainability, and explore how people's engagement with a place (whether it be a home, city, ecoregion, or otherwise) is a direct result of our relationships with and understandings of the complex ecological and social systems of that particular landscape. Recognizing the power and salience of place, we describe how and why participatory action research (PAR) holds considerable potential as an approach for effective critical sustainability education. Ultimately, we argue that engagement with tenets of participatory action research powerfully aligns with critical sustainability pedagogies to advance the vital work of community resilience based in justice and equity.

### **From Sustainability to Critical Sustainability**

Conflicting definitions of sustainability are at least partly responsible for the concept's lack of resonance in higher education (Liu, 2009). As Mulligan (2015) suggested, "global discourse on sustainability includes many words and terms that can be used in shallow or

ambiguous ways” (p. 6). Understanding and critiquing these definitions may provide a path for teaching sustainability that is explicitly based in equity and political ecology.

The most commonly used definition of sustainable development is development “that meets the needs of today without compromising the needs of future generations” (WCED, 1987). This understanding approaches a sense of intergenerational equity while largely ignoring present day equity issues. Liu (2009) describes sustainability as that which “supports economic growth with reduced impact on the environment” (p. 1414). Roper (2012) further expounded on the similarities of these concepts and the resultant impacts and significance of defining such terms:

“While definitions of the terms circle around ideas of balance between social, environmental and economic well-being, they are imprecise, ideologically invested, and contested (see for example, Connelly and Smith, 1999; Hajer, 1995; Peterson, 1997).

Some scholars distinguish between “environmental sustainability” and “sustainability,” suggesting that one is simply applied ecology while the other is grounded in equity and justice, as Agyeman, Bullard, and Evans (2002) suggest:

“Sustainability cannot be simply a ‘green’, or ‘environmental’ concern, important though ‘environmental’ aspects of sustainability are. A truly sustainable society is one where wider questions of social needs and welfare, and economic opportunity are integrally related to environmental limits imposed by supporting ecosystems.” (p.78)

It is this line of thinking that yielded “just sustainability” (Bullard et al, 2003), defined as “the need to ensure a better quality of life for all, now and into the future, in a just and equitable manner, whilst living within the limits of supporting ecosystems” (p. 5).

Critical sustainability that seeks to unmask intertwined social and economic systems of oppression in an age of global capitalism is yet another approach (Rose & Cachelin, 2013). With its foundation in critical theory, critical sustainability is based in a critique of neoliberal constructions of sustainability. Critical sustainability acknowledges the integration of economy,

equity, and ecology can be problematic. While a non-critical form of sustainability could tacitly allow that certain abusive power dynamics remain in so far as these can be 'sustained,' critical sustainability would seek to draw out and challenge these structures for both their ethical and practical implications. Critical sustainability is based on the premise that economic forces and the accumulation-driven profit motive are often responsible for the degradation of people and planet, necessitating sociopolitical orientations that support interconnected notions of social and ecological justice (Rose and Cachelin, 2014).

Critical sustainability, while wide-ranging, is best understood and enacted in the context of place and community. Places are the experienced, meaningful spaces in which we interact with and perform our identities, and where community knowledge and relations are vital to disentangling socio-ecological dilemmas and tradeoffs.

### **Place, Place Attachment, and Critical Sustainability**

Place and community engagement are essential ingredients needed to foster the crucial sociopolitical orientations required to achieve critical sustainability. While place attachment is often constructed as a connection to pristine environments, a justice orientation toward sustainability calls on us to understand place differently. Environmental justice scholars ask us to conceive of the environment as a place that also involves a human component: places are where we work, live, play, and learn (Cole & Foster, 2001). This conception of environment as home allows us to focus on issues immediately relevant to communities, and supports an integration of social and environmental systems.

Place, though, is not an innocent concept (Creswell, 2004), and it requires some unpacking before it can be leveraged toward a focus on (critical) sustainability. 'Place' and the

related concept of ‘space,’ like sustainability, have multiple and often compound meanings. Accordingly, the ideas of place and space are often engaged exactly because of the wide-ranging possibilities and variations they imply both metaphorically and conceptually. Geographers and philosophers regularly consider space as “an abstract commodity to be named, mapped, sold and subdivided” (McCarthy, 2002, p. 180). As a helpful juxtaposition, and with some exception, scholars across the humanities and the social sciences use the subjective experiences and meanings associated with the construct of place to differentiate it from space (Tuan, 1977). The underlying notion is that people often develop special relationships with a place and that this relationship provides special meanings to them (Tuan, 1980). Places are spaces with the addition of memories, experiences, and relationships. People’s experiential and often emotional connections with places layer together subjective personal histories with the materialities of the landscape. Cognitively, socially, politically, and relationally, it is our layered, place-based experiences that become the bedrock for future actions, behaviors, and relationships.

Places, in addition to the meanings and experiences associated with spaces, are about connections. Through both experience and discourse, connections form among individuals, groups, and places. As environmental historian William Cronon elaborates, these connections include:

the ecology of people as organisms sharing the universe with many other organisms, the political economy of people as social beings reshaping nature and one another to produce their collective life, and the cultural values of people as storytelling creatures struggling to find meaning of their place in the world. (Cronon, 1992, p. 32)

To understand any place, we must pay attention to connections – both historical and contemporary, as well as ecological. Places are what they are because connections make them possible (Cresswell, 2004).

Place attachment is an integral part of how people define themselves, including how and

where people live, work, and play. Empirical research has demonstrated that “different levels of intensity of place are influenced by individual and social values, but in turn they influence the values, attitudes, and more importantly, the behavior of the individual and society” (Shamai, 1991, p. 355). Memories of a place – as well as past, current, and potential future interactions with the place – can lead to the development of meanings and ultimately attachment to that place (Milligan, 1998).

Academically, most studies seeking to understand place attachment have broken the concept into two constituent components: place identity and place dependence. A third component, social bonding, has been added in recent years. Place identity refers to the emotional and symbolic ties that people have with a place – a relationship with a place symbolic of an individual’s identity. As an example, Williams, Patterson, Roggenbuck, and Watson (1992) describe the National Parks in the United States as being symbolic of national identity. The second dimension of place attachment, place dependence, describes the degree to which a place satisfies the needs or goals of an individual. A place may become special because, when compared to other places, it is the preferred landscape or setting to participate in a certain activity. For instance, a student may become dependent on a certain community agency, if that particular place satisfies the student’s goals and there are no other substitute agencies or organizations nearby. Therefore, place dependence is often functional rather than affective in nature (Jorgensen & Stedman, 2001). While place identity and place dependence account for many studies of place attachment, places are also considered special because of the social ties and interactions that they support. This social bonding capacity of a place nurtures or sustains meaningful social relationships, indicating that it is a viable third dimension (in addition to place identity and place dependence) of place attachment (Kyle, Graefe, & Manning, 2005). Places

have deeply held meanings, reminding us that places “are not only raw materials to be inventoried... places with histories, places that people care about, places for many people embody a sense of belonging and purpose that give meaning to life” (Williams et al., 1992, p. 44).

Correlations between place connection and sustainability behaviors (e.g., Brownlee et al., 2015; Uzzell, Pol, & Badenas, 2002) may be indicative of the power of place to make implicit aspects of sustainability explicit. Literature on community-based engagement suggests that students gain richer and more nuanced understandings of socio-ecological dynamics when immersed in particular places, and critical scholarship argues that sustainability education is more grounded and more deeply understood when students are removed from traditional classroom settings, when they are more immersed in place (Alvarez & Rogers, 2006).

While there is clearly a need for further research in the arena of place, pedagogy, and sustainability, we suggest that a critical lens on sustainability requires that place be a central component to sustainability education. Our place attachments are not only parts of our identities, but also are parts of the ways in which we engage with the world around us; as scholars, activists, citizens, and community members, the places that are important to us necessarily inform our engagement in all of our different roles. To ignore the strengths of place – the ways in which places are made, remade, and performed – would deny communities and individuals those parts of themselves that make them whole, that constitute substantial parts of their identities. Therefore, sustainability education that is not attuned to the contingencies, irregularities, and specificities of place cannot awaken existing links between ecology and justice; it cannot convey the power and relevance inherent in the social and ecological relationships we develop in *and as* our places. For this reason, we argue that critical sustainability pedagogy requires an emphasis



on place and the way in which places are enacted in relationship to inhabitants and their environments.

The question then arises: if place is such an essential part of critical sustainability education, what does this mean for our work as educators? More specifically, what approaches can we use to engage our students (whether in the classroom or in public education settings) in learning about the connections among justice, insecurity, and sustainability?

### **Participatory Action Research: An Approach for Teaching Critical Sustainability**

Based on our work over many years, we believe that tenets of participatory action research (PAR), a particular approach to community engaged research, offer a powerful tool for sustainability educators to immerse students in critical sustainability. Community engaged scholarship takes many forms and has been defined in a variety of ways (Butin, 2010; Torre et al., 2012). However, there is general agreement that community engaged research emphasizes students' and scholars' active engagement with community members in such a way as to advance local justice and partner with communities in addressing their critical issues, while simultaneously educating and enriching students and academics (Ostrander, 2004; Ryser, Markey, and Halseth 2013; Spalding, 2013). PAR focuses on the engagement of stakeholders in the process of knowledge generation and, perhaps most importantly, seeks to democratize access to power, knowledge, and social change, enhancing the experiences of all parties involved (Kinson, Pain, & Kesby, 2008; Reason & Bradbury, 2008; Teo, 2010).

While there are many notions of justice that exist across particular physical settings (e.g., critiquing power, emancipating voices, centering the marginalized, and creating durable change), it is the particularities of place that provide entry point; the tangible, material, experiential, and

relational intricacies make ‘glocalized’ sustainability work the salient work of all communities, the work that is able to redefine community members as expert. As Fine (2013) affirms, “knowledge and expertise are widely distributed even if legitimacy is not” (p. 688). Indeed, critical literature on global change and revolution acknowledges that possibilities for a reconceptualized social democracy must be rooted in the particulars or the “singularities” of place (e.g., Hardt & Negri, 2004; Hawken, 2007), thus weaving together local and global in a celebration of difference that promotes solidarity.

According to Torres et al. (2012), “critical PAR challenges hegemonic conceptions of where social problems originate, cultivates deep participation, produces evidence designed to awaken a sense of injustice and seeks to provoke collective engagement” (p.182). In this sense then, PAR, as both scholarship and pedagogy, has a unique and powerful role to play in elucidating the connectedness of justice and place to the vital work of critical sustainability.

Here, we use a case study of the New England Climate Adaptation Project (NECAP) to illustrate the potential of PAR to engage citizens in dialogue with planners, scientists, and policy makers, replacing traditional power dynamics that give primacy to academics and professionals, with a dynamic that is driven by place-based knowledges and stakeholder activism.

### **Case Study: The New England Climate Adaptation Project**

The New England Climate Adaptation Project was a two-year PAR project aimed at enhancing the readiness of coastal New England communities to adapt to climate change while simultaneously testing the effectiveness of science-based role-play simulations as a public education and engagement tool. The project was a collaboration among the Massachusetts Institute of Technology (MIT) Science Impact Collaborative, the Consensus Building Institute,

the National Estuarine Research Reserve System, and the public officials and citizens of four coastal New England municipalities: Barnstable, Massachusetts; Cranston, Rhode Island; Dover, New Hampshire; and Wells, Maine. Rather than taking a traditional approach to studying communities from the outside, the project was centered on tenets of PAR (McIntyre, 2008; Reason & Bradbury, 2008), seeking to enhance the capacity of these communities to collaboratively respond to climate-related risks while generating credible academic knowledge. (Rumore, 2014; Susskind et al., 2015).

A core element of NECAP was to educate decision-makers, key stakeholders, and members of the general public in the four partner municipalities about local climate change risks and potential adaptation options, and to engage them in thinking about how their town might respond to climate-related risks. More specifically, the project carefully and thoughtfully engaged diverse community members in making sense of climate change risks and exploring potential adaptation responses, as well as in identifying opportunities and challenges for climate-related risk management. NECAP also engaged diverse communities in learning about climate change risks and possible adaptation responses through a series of role-play simulation workshops held in each town, during which diverse community members were brought together to engage in a simulation and follow up discussion about the risks their town faces and what might be done to address to them (Susskind et al., 2015).

Each step of the project was designed to create a space for community members to learn about, share knowledge about, and otherwise engage with local, place-based environmental risks – risks that already exist and are often expected to get worse due to climate change – as well as to engage in meaningful dialogue with each other and with academics. As documented in Susskind et al. (2015), the project appears to have effectively achieved this aim and to have,

more broadly, enhanced the readiness of these partner communities to undertake collective climate change risk management.

This PAR project advanced community learning about critical sustainability in a number of ways. The process of engaging stakeholders in making sense of what climate change projections might mean for their town, learning about diverse perspectives and interests in their community, and envisioning potential pathways forward amid a changing climate helped people grapple with their and their communities' collective agency in enacting and responding to socio-environmental changes. It pushed community members to reflect on their role in co-producing socio-environmental risk; it also helped them appreciate the need for diverse community members to work together to prepare for, increase their resilience to, and adaptively respond to these risks. Further, it stimulated a very important community dialogue about how global development patterns (i.e., greenhouse gas emissions, which are driving climate change) and local development patterns (i.e., infrastructure investments and planning and zoning decisions) are playing out in local impacts. As such, the project advanced a deeper appreciation of the complex political ecology (see Robbins, 2012) and cross-scale dynamics influencing local sustainability.

Through the process, engagement in PAR tenets and techniques not only addressed community members' concerns about adapting to climate change, it also helped participating students and academics learn about critical sustainability. Researchers and graduate and undergraduate students at MIT were integrally involved in and worked closely with local partners in all stages of the project. The ongoing intensive local engagement that was core to the project helped students and researchers grapple with how issues of power, environment, and society interact in specific places; it challenged them to diagnose obstacles and opportunities for

advancing place-based sustainability; and it allowed them to practice skills for understanding and intervening in localities to increase critical sustainability.

Throughout the process, researchers and students were pushed to critically reflect on the place-based challenges each of these communities face, as well as the ethical and justice-related dilemmas inherent in trying to address environmental risks and advance sustainability. The experience forced them to immerse themselves in the contexts of each of these communities, to apply the academic theory and skills they had learned at the university to the real world social, environmental, and broader sustainability challenges of each of these towns. It also helped them to think about their “theory of practice” – e.g., to develop their ethical and pragmatic orientation toward complex sustainability challenges, and to formulate their approach for advancing critical sustainability.

### **Advancing Critical Sustainability Education through Participatory Action Research**

The NECAP project provides a valuable case study of how PAR can leverage place and community to effectively immerse students in the conceptual and practical integration of power, ecology, community, and justice. In essence, this is how critical sustainability can look. The unique intensity of place as more than geography, place that is the performance of personal and community identities, renders community members as experienced experts, necessarily changing some of the traditional power dynamics that ultimately breed injustices. As co-producers of local knowledge connected to global ecological patterns, community members partnered with academics in some fascinating and progressive ways.

Both community members and academics saw significance of social relationships that happen in an ecosystem context, making tangible the integration of ecology, economy, and

equity. They engaged with the impacts of an immense, complex, and abstract phenomenon like climate change and applied their understandings to local geographies, economies, and ecosystems. They realized strategies for resilience as a vital community need. Residents needed to better understand global greenhouse gas emissions and their impacts to make informed resilience-based planning decisions for their own communities. In this context, community is leveraged to clarify the ways that justice, resilience, and security are intimately connected.

An understanding of critical sustainability that challenges traditional power structures and interrogates systems of oppression was audible in student reflections. One student involved in NECAP noted:

This project highlighted the facts that a) local climate change risks are, themselves, uncertain, b) different groups have different feelings on how those risks should be addressed, and c) in order to wrestle with the range of scientific evidence and range of stakeholder interests, towns should engage with stakeholders and members of the public to have an open discussion about how the science can be incorporated into planning and how all interests can be met through creative, inclusive solutions. The project basically showed that towns can't really make climate adaptation planning decisions *without* some process like this – since any decisions made without wrestling with these things could seriously risk losing efficacy and legitimacy.

This student recognized that inclusivity and recognition of community expertise are essential for the application of science, if it is to be seen as legitimate (see Posner et al., 2016). Further, students were able to see the value of PAR outside of climate change adaptation given the interdependence of people and environment:

For me, it's really been about emphasizing the point that there are lots of different people and stakeholder groups out there with lots of different takes on the issues and the solutions ... These ideas and policy solutions can be co-crafted ... And all of this applies to ... all other types of planning... One of the magical things that can happen [is that] you're going to get more ideas and perspectives, and that might mean ideas that tackle *more* than just climate preparedness, but other things, too, at the same time.

Participatory action research – inherently nested in human ecologies, in environments where we work, live, play, and learn – has the potential to redistribute recognition and power in the generation of knowledge that integrates security, justice, and resilience.

PAR provides a promising pedagogical approach for addressing the challenges presented by divergent conceptualizations of sustainability, the difficulties inherent in enacting real transdisciplinarity, and the problems of conceptual integration. Knowledge generation that is tied to place and relationships within place necessarily makes tangible the abstraction of nesting economic systems in social ones, and social systems in ecological ones. Engaging in this kind of knowledge production requires integrative thinking. It pushes students to consider the sustainability – or lack thereof – of real places here and now. We contend that PAR, through creating this kind of sincere engagement with and connection to place and emphasizing community-driven knowledge production, can surmount many of the limitations that have plagued sustainability education, allowing us to teach a truly critical sustainability.

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