Introduction

The World Is Our Neighborhood

Where are we going? . . . and why am I in a handbasket?

—Bumper sticker

In hospital-speak, Code Red alerts fire and initiates the R.A.C.E. response: **R**escue those in danger; **A**ctivate the fire alarm; **C**ontain the fire; and **E**xtinguish the fire. It was the acronym used by the Intergovernmental Panel on Climate Change (IPCC) to sound the sirens in their sixth climate change assessment report (2021): "code red for humanity." The earth is our home and the world our neighborhood, but if we take the symbolism to its logical conclusion, we may be ablaze in fire far sooner than anticipated. Global climate champion Greta Thunberg, famed for being a "kind but poorly informed teenager" (President Vladimir Putin) and needing to "work on her anger management problem" (President Donald Trump)—among more notable things—was eloquently indignant when addressing leaders at the Austrian World Summit on climate change in 2021:

> More and more people around the world have woken up to the climate and ecological crisis, putting more and more pressure on you, the people in power. Eventually, the public pressure was too much and you had the world's eyes on you. So you started to act. Not acting as in taking climate action, but action as in role playing, playing politics, playing with words and playing with our future, pretending to take responsibility, acting as saviors as you try to convince us that things are being taken

care of. Meanwhile, the gap between your rhetoric and reality keeps growing wider and wider, and since the level of awareness is so low, you almost get away with it. But let's be clear: What you are doing is not about climate action or responding to an emergency. It never was. This is communication tactics dressed as politics, disguised as politics. You, especially leaders from high income nations, are pretending to change and listen to the young people while you continue pretty much exactly like before.

For all her might and conviction in rousing world leaders from their theatrics and slumber, I am reminded of a colleague's indisputable aside: Greta Thunberg cannot solve the climate crisis alone.

Our need to invest in a common language with global reach as climate change advances and the environmental challenges confronting planet earth intensify is now more urgent than ever. Despite the scientific warnings and political commitments from nations worldwide, greenhouse gases have continued to rise (United Nations Environment Programme, 2019). In their *Emissions Gap Report 2019*, the United Nations Environment Programme (UNEP) revealed bleak findings—with improvements well below what scientists had targeted and hoped for—and emphasized the "need for rapid and transformational action" (p. iv).[1] The UN 2030 Sustainable Development Goals (SDGs) have emerged as a framework around which a common language and related civic discourse can materialize. Bundled into seventeen composite goals that target critical areas of need, the SDGs and their multicolor wheel logo have become a symbol of our need to unite globally around environmental destruction, climate change, and species extinction caused by human activity. Achieving the 2030 SDGs will require concerted commitments that span sectors of local society worldwide, however, including civil society, business, government, international bodies and organizations, media, and education.

The central role of education in particular, in responding to the clarion call of mobilizing around sustainable development, is noted among stakeholders across the international arena. In its *Issues and Trends in Education for Sustainable Development* report, UNESCO[2] singles out education as "one of the most important drivers of change" in response to the challenges before us (Leicht et al., 2018, p. 29). Yet for education to live up to its potential and alter the current trajectory of global climate change, it must be "flexible, culturally sensitive, relevant and suited to

changing people's values and behaviors" (World We Want, 2013, iv). As the UNESCO report concludes, education itself must change, to become more holistic, critically reflexive, and transformative, if it is to act as a vehicle for sustaining earth (p. 29). This book examines what this need for change within education might look like, narrowing in on a series of core competencies that have emerged as part of curricula that engage sustainability as a foremost issue of our time.

Because drivers of climate change involve multidimensional, intersecting processes that are both global and local in scope, educating to sustain the future will require more than tinkering at the edges and will remain ineffectual without integrating expertise that spans society, science and its disciplines, cultures, and histories. Curricula will need to uncover how global systems and structures with adverse consequences for the environment interconnect and adapt in dynamic ways across space and time (Papenfuss et al., 2019). In other words, efforts to discern anthropogenic drivers in diverse world localities will require collaborative responses that combine interdisciplinary knowledge, multicultural understanding, and world historical analyses (Fiske et al., 2018; Rosa & Dietz, 2012). Despite the need for investment from all fronts, the social sciences and humanities have been comparatively underrepresented in efforts to advance knowledge of the factors involved, however, while Eurocentric perspectives continue to dominate education content.

Sustainable development is often conceptualized in terms of the scientific fields of study that make up the *three Es* of sustainability: ecology, economy, and (social) equity. A general consensus has emerged within the field of education for sustainable development (ESD), however, regarding the centrality of certain "core competencies" upon which sustainability education must additionally build—above and beyond the scientific knowledge needed. Included are such metacognitive skills as systems-thinking competency, anticipatory competency, normative competency, strategic competency, collaborative competency, critical-thinking competency, self-awareness competency, and integrated problem-solving competency (Osman et al., 2017).[3] This book is intended as a point of departure for envisioning and distilling the soft science competencies that environmental challenges necessitate, but that exist beyond the realm of scientific discovery and invention, the competencies needed to critically reflect and collectively act on and synthesize complex (and often conflicting) knowledge in response to the challenges before us. Said simply, it will take more than STEM and hard sciences (as significant as these are)

to solve the problems before us.

Education for sustaining our common future must necessarily draw from diverse worldviews and build on curricula from across designated fields of study, theoretical perspectives, and pedagogical frameworks in responding to shifting demographics, technologies, and world geopolitics in increasingly turbulent and polarized times. The field of competing expertise, authorities, and pedagogies on best practices for educating students about our "common and uncommon" historical present and how to move toward a more sustainable future is vast and crowded, however (Stein, 2018a). Following in the footsteps of scholars who use cognitive mapping and social cartography as a collaborative research tool for outlining "relations between and within various epistemic communities and discursive and interpretive frameworks" (Suša & de Oliveira Andreotti, 2019, p. x), I weave together and critically engage work underway in multiple fields as part of evolving discourse on sustainability education, including education for sustainable development (ESD), environmental justice (EJ), critical theory (CT), global citizenship education (GCE), alternative development, critical and inclusive education (CIE), culturally responsive education (CRE), critical pedagogy, systems thinking theory, post-normal science, and more.

Organized around a social cartography of sustainability competencies, the book explores metacognitive and socially embodied, subjective intangibles at the crossroads of science and this assemblage of knowledge fields. Introduced in chapter 1, the *3C cartography* includes three broad categories—*contemplative criticality*, *compassionate collaboration*, and *comprehensive complexity*—and comprises a living, social cartography of expansive sustainability competencies across three spheres that encircle the 3E model and its curricular content (see figure 1.2). The ingredient competencies of the 3C cartography are intended as a dynamic and evolving inventory of component parts that intersect and intersperse, their frame of reference adjusting according to diverse sociocultural and historical particulars that inevitably influence perception. Conceived as a means to visualize, integrate, experiment with, and imagine the possibilities for (alternate) sustainable futures, the proceeding chapters examine this living inventory of sustainability competencies.

Interspersed throughout the book are also anecdotes, personal experiences, and testimonies that bring life to the teaching-learning nexus of academics, to static text or imagery on a page. This necessarily reflects my own journey of discovery and understanding, and efforts to learn

from and share with others—students, colleagues, friends, family, or even people I may not know—ways of thinking about and engaging with the world. Many of the largest lessons in life materialize through exposure to unfamiliar cultural context, when the comfort of predictability is destabilized and our expectations are derailed. This may include immersion into transnational or diasporic cultures that span the physical globe, or intercultural encounters that emerge from social segmentation closer to home (i.e., class, regional tradition, religion, etc.). For me, many such lessons have transpired while teaching inside a maximum security prison for women in the United States, amid the morass and violence of mass incarceration. What it means to be discriminated against, dispossessed, exploited, alienated, dehumanized, and vulnerable takes on drastic dimensions inside the carceral spaces that configure human captivity.

It is behind the concrete walls and barbed wire of prison that some of the most palpable examples of soft science sustainability became apparent to me, long before the seventeen global goals were clearly articulated. The strengths of the UN global goals are at once their weakness: the enormous ambition and unwieldy reach for all-encompassing inclusivity overwhelms. Yet their import is precisely the sweep with which they legitimize nested, interconnected dimensions of what it means to sustain fulfilling life on earth. Many of the SDG targets contained in this "shared blueprint for peace and prosperity" justify the need to address inequality, deprivation, and social malfunctioning; many of these same targets are conspicuously wanting inside facilities where humans live out long sentences, year after year. As Dostoevsky noted long ago, "the degree of civilization in a society can be judged by entering its prisons." As microcosms that speak truth to power, the voices of those inside prisons magnify erudite perspectives vanished from the public view.

As someone who was not born and raised in the United States, teaching a study abroad course in my country of origin (Norway) during the summer of 2022 provided another unusual opportunity to learn from my students by defamiliarizing the familiar. Although naive distinctions between native and nonnative have long since lost their luster in a globalized world (Narayan, 1993), the cross-cultural experience of teaching foreign students in my country of origin allowed me to glean firsthand a host of reactions they had to local life in unfamiliar lands. Most striking was their relative awe and incredulity in response to the extensive public services that the Scandinavian welfare state provides (universal healthcare, tuition-free higher education, efficient public transportation, access to cul-

tural institutions at subsidized or no cost, preservation of and proximity to nature). Their observations reinforced awareness of the destructive force that neoliberal restructuring has had over the last four decades in dispossessing people of basic public provisioning and a safety network.

In particular, students remarked on the overall sense of security and peace of mind they would enjoy had they been ensured the public services they witnessed during their visit. Not surprisingly, student debt was high on the list of grinding preoccupations. To what extent are you able to prioritize concern over climate change in the shadow of abject anxiety about sustaining your livelihood while repaying prohibitive student debt? The narrative culls from these and similar life experiences, memories, and musings thereupon for rhetorical purposes. Any anecdotal embellishments are, of course, evocative and purely illustrative; they are in no way intended as a form of fact-finding or truth-telling. Yet Archimedean scientific fact-finding in the abstract is a questionable form of truth-telling in its own right. What is the "true" meaning of facts devoid of human sentience and embodied experience after all? If we are to bring our infinite truths to the table, we need enhanced elasticity in our methods and approaches.

The culprit of climate change ultimately flows from one and the same source of domination over peoples and planet, a conviction explored throughout the book that I return to in its final pages. Education's mandate to adjust the destructive pathway we are on will be onerous worldwide. It involves radically rethinking human-centric assumptions prefaced on the separability of humans from each other and between humans and other-than-humans. Transforming the cultural values, social structures, economic arrangements, and relational configurations around which climate change converges entails teaching students to rethink how we think about institutions, systems, structures, processes, mechanisms, dynamics, meanings, purposes, approaches, methodologies, worldviews, cosmologies, ontologies, epistemologies, reasoning and rationality, histories and genealogies, time frames and temporality, space and place, and relations and interrelationships. This book and the 3C social cartography of soft science sustainability is an invitation to begin thinking, unthinking, and rethinking outside the confines of convention to unearth possibilities. As such, it is an invitation to add and accumulate missing pieces, remove parts that do not make sense, and adjust components that feel flawed or fail to suit circumstances.

Pathways for learning that interlink disciplinary subject matter and articulate connections between SDGs across fields of knowledge, in

diverse global settings, will demand malleable pedagogical approaches and inclusive curricular content that enable students to explore "otherwise possibilities" together. It requires that we infuse metacognition with intentionality throughout education. Using sentient, collaborative models to guide learning toward this end, sustainability curricula must strive to integrate soft science sustainability competencies throughout formal education, with a focus on expanding the meanings and applicability of criticality and reflexivity; collaborating across disciplinary and cultural boundaries while connecting local and global knowledge; and acquiescing to a world reality in which dynamic change and knowledge uncertainty are the only constants.