

Chapter 8

Learning to Teach Environmental Education by Gardening the Margins of the Academy



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As one of Canada's and North America's leaders in campus sustainability, the University of British Columbia (UBC) has positioned itself as an innovator for its green buildings, energy systems, campus operations, research, and teaching and as an employer (Baxter 2015; "UBC Receives" 2011). Faculty, staff, and students within the Faculty of Education at UBC have been actively involved in campus-wide sustainability initiatives, sustainability education, and environmental education (EE) within and beyond the Faculty. Consistent with this UBC-wide commitment to sustainability, the recently re-visioned teacher education programme emphasises ecological justice as a component of "diversity and social justice" (UBC 2012a, p. 10), which is a central thematic strand of the programme.¹

These commitments have occurred alongside provincial attempts to integrate EE within the British Columbia (BC) K–12 school curriculum, which currently includes EE in the Science curriculum.² After the BC Ministry of Education's proposed (draft) Kindergarten–Grade 7 Science curriculum for 2015–2016 received extensive criticism for its lack of EE content, a team of experts developed EE content along

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¹In draft stages of this re-visioning process, this strand was more explicitly entitled "Social & Ecological Justice and Diversity".

²For British Columbia Ministry of Education curriculum resources, see *Environmental Learning and Experience: A Interdisciplinary Guide for Teachers* (2007) and *The Environmental Learning & Experiences (ELE) Curriculum Maps: Environment & Sustainability Across BC's K–12 Curricula* (2009).

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with concepts of environmental stewardship and responsibility to be integrated at each grade level.³

Notwithstanding these shifts to apparently integrate EE at UBC and within the BC curriculum, in this chapter, we offer our perspectives as three teacher educators working in EE at UBC on the ways in which EE remains marginal—and, at times, marginalised—as teacher candidates learn to become teachers. The challenges and generative potential of “gardening the margins” become both a metaphor and an example of pedagogical places and practices in the landscape of teacher education as we move from a general description of EE within UBC’s teacher education programme to specific narratives from The UBC Orchard Garden,⁴ a campus teaching and learning garden and outdoor classroom.

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The chapter begins with an introduction to EE curriculum at UBC’s teacher education programme through Sandra’s autobiographical experiences teaching EE in the Faculty of Education. We then move to an example of an informal and marginal educational space: The UBC Orchard Garden. In this section, we draw on our extensive, hands-on experience developing The UBC Orchard Garden as a student-driven, outdoor classroom project. Through Julia’s tour of the Garden and other campus

³The current draft of the BC Science curriculum (British Columbia Ministry of Education 2015) includes place-based learning, First Peoples’ principles of learning, key ecological concepts, and principles and themes of human-society-nature relationships.

⁴For more about The UBC Orchard Garden, visit the project’s blog at <http://theorchardgarden.blogspot.ca/>

⁵For more about the Intergenerational Landed Learning Project, visit <http://landedlearning.educ.ubc.ca/>

landscapes, and Susan’s ecopoetry walk with student teachers, we explore how ecological justice is positioned as a central strand to be infused throughout the teacher education programme, despite the fact that its presence nevertheless remains marginalised and fragmented.

8.1 EE in UBC’s Teacher Education Programme

While ecological justice is a strand within the UBC’s 2012 re-visioning of the teacher education programme and UBC promotes sustainability education pathways across the various disciplines of the university,⁶ student teachers’ access to EE is often piecemeal. Currently, there are no environmental cohorts in the Bachelor of Education (B.Ed.) programme. In the past, the Living and Teaching Green cohort (2006–2010) was a very successful elementary cohort that featured themes of Social Responsibility and Environmental Sustainability. As with many cohorts in the UBC B.Ed. programme, Living and Teaching Green had a limited tenure to allow for the implementation of a new “themed” cohort.

Since the newly implemented B.Ed. programme, courses are framed by the following strands: Inquiry and Dialogical Understanding; Curriculum, Pedagogy, and Assessment; Diversity & Social Justice; Language, Literacies, and Cultures; and Field Experience: School and Community. Many instructors infuse EE into existing courses, particularly in science education (Scott and Adler 2014) and interweave bioregional and land-based experiences through field trips to the UBC Farm, The UBC Orchard Garden, local beaches, and forest walks. Teacher candidates at UBC can also access EE through electives offered to secondary teacher candidates during the summer (Outdoor Environmental Education: Curriculum and Pedagogy; Advanced Methodology in Outdoor Environmental Education; Environmental Education), through inquiry classes, and during a 3-week Community Field Experience (CFE) practicum where students learn to teach in a broad range of educational settings in addition to their regular 10-week school-based practicum. Teacher candidates can choose outdoor EE projects for their CFE such as The UBC Orchard Garden and the Intergenerational Landed Learning Project at the UBC Farm.

Many environmentally conscious UBC Education faculty, staff, and students have laid the groundwork for EE in the UBC Faculty of Education. The EE Caucus, co-chaired by a faculty member and a graduate student, was formed in 2005 and has been key to developing EE courses and programmes and implementing “green” initiatives within the Faculty of Education. Although the activity level of the EE Caucus fluctuates, depending on need and student/faculty engagement, it has remained an important grassroots force in advancing work in EE in the Faculty. Due

⁶For more on UBC Sustainability’s (n.d.) *Teaching & Learning* sustainability pathways across all teaching programmes, see <https://sustain.ubc.ca/campus-initiatives/teaching-learning>

to these efforts, the UBC teacher education programme has begun to acknowledge and incorporate EE initiatives.

8.2 Autobiographical Inquiry into EE at UBC: Sandra's Story

Sandra has taught in the UBC teacher education programme for more than 20 years. From her earliest experiences in this programme, her work has consistently promoted EE as a foundational, integral approach to be woven into every course and programme. She has witnessed what has changed and what has remained the same in the teacher education programme at UBC since the early 1990s and writes about her personal journey navigating change and constancy. Through autobiographical introspection, Sandra highlights a combination of encouraging EE initiatives and a frustrating lack of uptake on some of these initiatives. As well, she documents new teachers' struggles stepping into professional responsibilities.

Sandra: During a recent conversation with education colleagues, we discussed the presence, or really the lack of presence, of EE in the UBC teacher education programme. We came from a variety of educational backgrounds that included teaching in elementary, middle, secondary, and postsecondary classrooms as well as in parks, museums, and science centres. To explain the dearth of EE at UBC, a colleague offered this observation: "I will tell you what the problem is. EE tends to take over, to the exclusion of everything else". During the prevailing silence, I thought, "Isn't that a good thing?" I was reminded of David Orr's words, "All education is Environmental Education" (Orr 1994, p. 12). I also thought of a conversation with my colleague and friend, Mathabo Tsepa, a Mosotho of the Bafokeng (Hare) clan of the Basotho people, from Lesotho in southern Africa. She explained that in her Sesotho language, there was no word for EE. Environment, the Land, was "simply part of the story", a story about rootedness, connection, and deep care for the land (M. Tsepa, personal communication). Why then could we as environmentally conscious educators not understand and teach about the land, and by *Land* I mean all worlds of the earth, skies, and waters, in a similarly integrated way?

This idea of EE "taking over" has not been my experience during 20 years working with teacher candidates and practising teachers at UBC. When I first taught in the teacher education programme as a graduate student in 1994, there was no EE component in the required coursework for the Bachelor of Education degree. The secondary B.Ed. students were offered an EE elective in the summer, but the elementary B.Ed. programme did not have a similar course. And so, as a newly appointed instructor of a 13-week elementary science methods course, it was my idea, and therefore up to me, to interweave EE into my curriculum. To start, I drew upon my lived experiences and my lifelong knowing of and being in the more-than-human world (Abram 1996). My vision was informed by my experiences as a marine educator, park naturalist, and elementary and secondary classroom teacher. Ignited by my caring, connection, and concern for the Earth, I infused those 13 weeks with a sense of wonder inspired by the writings of Rachel Carson (1965) and Eleanor Duckworth (2006, 2008). This reimagining and re-enlivening of the students' inborn sense of wonder was framed within an inquiry approach to teaching and learning as conceived by Schwab (1962) and furthered by the work of White and Gunstone (1992).

One area I emphasise in my curriculum is the importance of infusing what Canadian environmental researcher and educator Lucie Sauvé (2005) refers to as a bioregional focus. When we honour where we live and who we are, then we come to know, connect, care, and ultimately strive to ensure the health and well-being of ourselves, our families, our culture, and all the Earth's living and non-living communities. This focus also reflects my own research and what I call "environmental knowing" (Scott 2007) conceived through my doctoral work on children's EE experiences. I continue to draw upon and add to this understanding of knowing and being in all of my pedagogical and research pursuits.

The current elementary science methods course that I teach is a work in progress as I attempt to instil a sense of wonder, love, commitment, and an ethic of care for the land within the confines of a 5- to 6-week course. This brief time frame does not provide a favourable context for Payne and Wattoch's (2009) "slow pedagogy". I have also been disheartened to note in my research that student teachers did not explore and articulate their environmental knowing as fully in their final assignments (a unit plan) as they did when engaging in class discussions, conversations, course experiences, and writing and drawing in their course notebook. These results suggest that, just as with many practising beginning teachers, teacher candidates tend to teach the way they were taught when confronted with a challenge (Adler 2012; Blanton 2003; Lortie 1975; Nashon 2006). Pushing the boundaries beyond the seemingly "easy" and "comfortable" textbook-derived activities of a conventional unit is not yet part of many a beginning teacher's pedagogy.

In working with my graduate students who decide to further their studies in EE after their B.Ed., I can see, as Tsepa (2008) suggests, that the environment becomes part of their story. Within initial teacher EE, however, we are far from the situation that my colleagues described as EE taking over the entire curriculum. However, ever so slowly, changes are taking place. Today in my academic home, the Department of Curriculum and Pedagogy, as well as across the UBC Faculty of Education, there is a growing community of educators who care deeply about the Land, who live an ethic of care not only in their teaching and learning but in all that they do. I truly believe that it is not the programme and curricula that make EE *live*; rather, it is those individuals who live within it as the land becomes their story. As Carson (1965) writes, these individuals are the companions who share and relive the "excitement and the mystery of the world" and "keep alive" (p. 45) our inborn sense of wonder.

8.3 The UBC Orchard Garden and Its Role in the UBC Teacher Education Programme

The UBC Orchard Garden is a place and a project designed to further the efforts of UBC teacher educators, graduate students, and teacher candidates to learn how to teach across the curriculum through a garden as an outdoor classroom. The Orchard Garden has afforded many opportunities for teachers and learners to infuse EE, ecological awareness, integration of the arts, a sense of wonder, and the importance of complicated, unsettling conversations and actions in the process of learning to teach in and with a living place like a school garden. We will introduce The Orchard Garden and its projects here and then explore some of the implications of *gardening the margins* through Julia Ostertag's autobiographical narrative of her experiences leading teacher education classes based in the garden.

Initiated as a partnership project between the Faculty of Land and Food Systems and the Faculty of Education, with the participation of the School of Architecture and Landscape Architecture, The UBC Orchard Garden is a project of UBC, grounded in a physical garden on central campus. The garden is a collaborative, student-directed research and university teaching project that creates an outdoor teaching and learning space where students and educators (who are often other students) come together as a community to teach, learn, and grow organic produce for the UBC community. The garden is also a point of contact for community engagement, both within the UBC community and externally, notably with the Vancouver School Board, the Chinese-Canadian Historical Society, local artists (e.g. Sharon Kallis and the Urban Weaver Project; see Kallis 2014), local food systems projects (Fresh Roots, the Vancouver Food Policy Council, the Vancouver School Food Network), and the Musqueam community via the First Nations House of Learning at UBC. Finally, The UBC Orchard Garden is recognised as fulfilling the goals of UBC's (2012b) strategic planning document, *Place and Promise* (Fig. 8.1).

Graduate and undergraduate students are central to all aspects of the garden's operation. Mentored by faculty from Education and Land and Food Systems, students write grants to fund the garden; design the garden; maintain the garden; sell garden produce through direct sales to the student-run Agora Café and a Community-Supported Agriculture garden share model; promote the garden as an outdoor classroom for teacher education; host classes; lead and teach student teacher practicums; host celebrations, conferences, and workshops in the garden; conduct research; design curriculum resources; collaborate with community partners and international garden-based educators; and maintain an active blog of garden-based initiatives. Students from the Faculty of Land and Food Systems largely focus on urban, organic



Fig. 8.1 The original UBC Orchard Garden, prior to relocation in 2014. (Photo credit: Julia Ostertag)

gardening practices, frequently sharing their knowledge and skills with students from the Faculty of Education. Student leaders from the Faculty of Education explore the garden as a co-teacher and outdoor classroom. Since 2010, more than 1500 teacher candidates have engaged with the garden as learners, educators, researchers, and volunteers. Courses that have held classes in the garden span the B.Ed. programme, including Aboriginal Education, Math and Science, Philosophy, Art Education, and Language and Literacy Education. The UBC Orchard Garden offers an intensive, eight-part, student-led Saturday workshop series and a 3-week CFE placement for student teachers interested in garden-based EE.

We will explore gardening the margins through co-author Julia Ostertag's autobiographical contribution, a creative non-fiction description about guest-teaching a class in the UBC teacher education programme, written in an ironic, third-person voice. She brings us into the story of The UBC Orchard Garden as a fraught and contested place in the academy.

Julia: Imagine that you are a UBC teacher candidate sitting in a mandatory teacher education class on Aboriginal Education in Canada (EDUC 440), and your instructor has invited Julia, an educator at The UBC Orchard Garden, to bring your class to the garden. You are not entirely sure what a garden has to do with teacher education or Indigenous Education but you are looking forward to getting outside. However, just as you leave the front door of the teacher education building, Julia has already stopped the group. You gather around and notice that Julia is standing beside a young apple tree that you have never noticed growing out of the concrete planter box on the front sidewalk.

"This little apple tree was planted by our campus landscapers", Julia starts saying. "It is a cutting from the original apple orchard that used to grow from behind this building to the agriculture building where the garden used to be that gave us our name, The UBC Orchard Garden".

An orchard, here? And what does she mean when she says "where the garden used to be"? But the group moves on, down the steps, and out onto the expansive Main Mall Boulevard. Immediately, however, Julia stops again in the middle of the kilometre-long stretch of green lawn that reaches north-south on Main Mall, from the Canadian flag at the Rose Garden to the flag of the Province of British Columbia by the Forest Sciences Building on the opposite end of the lawn (Fig. 8.2).

"I want you to start looking at this campus landscape as a garden, or particular kinds of gardens, and consider how these gardens narrate stories about human relations and human-land relations", she says. Your eyes are drawn down the long line of immense red oak trees that grow parallel to the grassy boulevard and recently completed stone walkways. "In which ways might this be a colonial campus design? Why are there oak trees 'native' to eastern Canada and the US northeast growing here when the forests around us are coastal temperate rainforests? What does this suggest about whose knowledge and ways of organising space are most important? What is being erased?" The flood of questions and Julia's passion are unsettling and unnerving, since the large green boulevard is a central attraction at the heart of the campus.

"When we first started looking for an outdoor classroom garden space on campus", Julia continues, "we naively asked the campus planners if we could garden here on Main Mall, right in front of our building, since, after all, it was zoned 'green academic'. We were told,



Fig. 8.2 Main Mall Boulevard, UBC. (Photo credit: Julia Ostertag)

in no uncertain terms, by the planners that, ‘This is a sacred green lawn, stretching from one flagpole to the other’. Sacred? What do they mean by sacred?’ Julia leaves the question hanging, but you sense that she still struggles with what seems like a colonial appropriation of the notion of sacred land for grass monocultures on linear campus boulevards.

The group continues walking down the boulevard toward the BC flag, where you turn right and head down a small slope. Immediately, the noise of yet another construction site on campus assaults your ears and eyes (Fig. 8.3). Cranes stretch into the sky, looming above the grey skeletons of concrete high-rises. Shouting above the din, Julia’s hand sweeps over the construction site where, with a wry laugh, she says, “Welcome to The UBC Orchard Garden!”

Puzzled, you frown. This is the garden? “This is where, in 2005, students in Land and Food Systems started The UBC Orchard Garden, after a series of old portables were demolished behind the agriculture building”, Julia explains. “In 2010, after our failed attempt over several years to find garden space close to teacher education classes, an expanded garden was cultivated as a collaborative initiative with the Faculties of Education and Land and Food Systems, and the School of Architecture and Landscape Architecture. In 2014, however, we were relocated to a new site. The University cut down the remaining original apple trees and began construction of the Orchard Commons to house Vantage College’s international student programme that will charge \$45,000 for 1 year of tuition and housing at UBC”.



Fig. 8.3 Destruction/construction site of the original UBC Orchard Garden/new Orchard Commons. (Photo credit: Sandra Scott)

Since the noise of the construction site makes it too loud to keep talking, the class continues walking down the sidewalk, turning left and heading toward Totem Park residences, the undergraduate student residences adjacent to Totem Field, where the new garden is located. Pausing in front of the residence buildings, Julia notes that in the past, they have visited this location with Sarah Ling from UBC's Aboriginal Initiatives, and Sarah has shared with students the story of how two of the Totem Park residences, *həm'ləsəm'* and *q'ələyən* Houses, received their *hən'q'əmin'əm'* names drawn from Musqueam First Nations history, oral traditions, and significant places.⁷

When you finally enter the large rectangular plot allocated to The UBC Orchard Garden, you notice how the clean lines of the Totem Field agricultural experiments quickly give way to a barely contained profusion of plant life that threatens to spill beyond its borders. "Here we are", Julia announces. "Whenever we host visiting classes or events in the garden, we acknowledge that we are gardening, teaching, and learning on the traditional, ancestral, and unceded territory of the Musqueam First Nations. This history and these ongoing relations are particularly important for land-based projects such as this one and require that we constantly work toward repairing and renewing our relations, examining colonial and oppressive assumptions in our historical and contemporary gardening and teaching practices, and experimenting with ways to engage ethically with this land and the First Nations peoples that have lived here since time immemorial. Layered onto these stories are also the ever-changing dynamics of the land, of glaciation, of isostatic rebound, of deforestation and urbanisation, and now, of climate change". Julia pauses, looks around the garden, and gazes up into the sky.

You ponder Julia's words and the webs they have spun on this walk to the garden, struggling to juxtapose these unsettling stories with the beauty, abundance, and possibilities presented to you today as you gather together in the garden.

⁷For more information about the house names, visit https://wiki.ubc.ca/Totem_Park_Residence

Although it takes longer to tell these pedagogical place stories of The UBC Orchard Garden than to simply walk briskly from the classroom straight to the garden itself (or to describe the garden briefly in a few cursory sentences in this chapter), sharing these narratives is central to what it means to be an environmental educator and to understand, challenge, and reinvent our relationships within human and more-than-human communities. As the story of the garden suggests, garden-based education is itself a complex and complicated pedagogical practice. Add to this complexity the challenging financial, spatial, temporal, and discursive marginalisation of garden-based educational initiatives and initial teacher EE more generally, it becomes apparent that even at a university that foregrounds sustainability throughout its operations, teaching, and research, integrating EE programmes and projects (such as the garden) within UBC's teacher education programme and the campus landscape exposes layer upon layer of obstacles.

8.4 Poems from the Invisible Gardens Ecopoetry Walk

Engaging with these obstacles through arts-based practices has been one approach that we have used extensively at The UBC Orchard Garden in our research and teaching. As such, we turn now to the poetic voices of student teachers and their responses to some of these barriers during a poetry walk as part of The UBC Orchard Garden's student teacher workshop series. Susan Gerofsky's autobiographical narrative about the experience of leading these ecopoetry workshops frames and contextualises the students' poetry. All student poems have been included with the consent of their authors.

Susan: From the unofficial margins of the teacher education programme, The UBC Orchard Garden offers all student teachers the opportunity to voluntarily attend a workshop series on garden-based learning. The workshops are designed and led by students on The UBC Orchard Garden team and, occasionally, even by student teachers on their CFE practicum. In addition to their busy academic schedules and practica, these remarkably dedicated student teachers spend six Saturday mornings in the garden, and, at the end of the workshop series, they receive an informal certificate for their teaching portfolios.

Although students lead the majority of the workshops, most sessions also include invited guests from the community (e.g. high school students from an exemplary school gardening project, local artists, soil scientists, or landscape architects). On a cold, damp day in January 2015, I facilitated a Garden Poetry session as part of the workshop series. My own history as an English language and literature teacher and poet, as well as a teacher of mathematics, physics, music, drama, film, and modern languages, has meant that I have some facility in moving among and across disciplines and sometimes finding unexpected resonances betwixt and between them.

These sketch poems, written by workshop participants at 5-minute intervals during an ecopoetry walk around campus, express thoughts and impressions, real, remembered, and imaginary about the invisible and visible gardens of this place. These poetry walks draw on

the practices of ecopoetry (Bryson 2002),⁸ grounded in acknowledging and valuing the ecological interdependence of human and more-than-human entities, a decentring of the human, and an attitude of humility, respect, and listening.

Ode to the Lawn, Sara Peerless.

A mono-culture.
 Green is the colour.
 Order is the agenda.
 At all costs.
 Mow, spray, deter all pests.
 A mono-culture.
 Primp, preen, green is best.
 Look on, don't touch.
 Nature's perfect green.
 Or mankind's perfect mess.

Sacred, Elisha Gill.

Sacred they say,
 But what is so sacred when you are stepped on,
 Easily maintained,
 Green as ever you stay,
 Your silence keeps the garden away,
 What is messy needs to be tucked away,
 Us humans always want our neat and tidy ways,
 Plucked, picked, pruned,
 Always groomed...
 That is not the natural way.

Stolen, Elisha Gill.

They take away the land that brought people together,
 They take away trees,
 They take away apples,
 They take away community,
 They take away the feasts,
 They take away a place of refuge,
 They take away the food on my plate,
 I ask you to take away your greed.

Poem about the original Orchard Garden, Suke Padam.

No more garden, it's rebar.
 No more garden, it's cranes.
 No more garden, it's hammers.
 No more garden, it's cement.
 No more garden, it's steel.
 No more garden, it's workers cussing.
 No more garden, it's mass development.
 No more garden.
 I am sad now.

⁸ See also the online journal *ecopoetics*: <https://ecopoetics.wordpress.com/>

8.5 Challenges of Implementing Initial Teacher EE at UBC

Institutions of teacher education fulfil vital roles in the global education community; they have the potential to bring changes within educational systems that will shape the knowledge and skills of future generations. Often, education is described as the great hope for creating a more sustainable future; teacher-education institutions can serve as key change agents in transforming education and society, so such a future is possible. (Hopkins and McKeown 2005, p. 11).

As expressed in Hopkins and McKeown's (2005) *Guidelines and Recommendations for Reorienting Teacher Education to Address Sustainability* report, a great deal of hope and possibility lies in the role of teacher education for transforming education and society more generally. However, a central challenge that makes it difficult to bring about EE programming within initial teacher education is that teacher education programmes—like schools themselves—are remarkably resistant to change. Furthermore, after years of observing other teachers teach, it is difficult, as Sandra illustrated above, to unsettle the identity of the teacher that student teachers have formed over years of their own schooling (Britzman 2003) and stereotypical representations of teachers and classrooms in the media. Teacher education, Hargreaves and Jacka (1995) write, is all too often “a stressful but ineffective interlude in the shift from being a moderately successful and generally conformist student, to being an institutionally compliant and pedagogically conservative teacher” (p. 42). Hargreaves and Jacka go on to suggest that even when students are seduced by new teaching ideas during their short induction period, they then encounter the relatively unchanging realities of schooling when they begin their first appointments. If EE and unique pedagogical places such as The UBC Orchard Garden are to become integral to initial teacher education, it will require that these pedagogical practices and places are not simply seductive new teaching ideas. Instead, it is important to prepare and support student teachers to engage with these ideas, practices, and places within the context of the relatively unchanging reality of schools (and schools of education). For instance, through our work with The UBC Orchard Garden, gardening the margins has not been about seducing students with new pedagogical innovations. Rather, the collaborative, student-led initiative has allowed for unique pedagogical relations to emerge wherein students and the garden “become teachers together” (Ostertag 2015, p. ii), a notion we discuss in greater detail below that may offer an alternative response to both seductive utopias and the isolation and individualism that contribute to the challenges for changing teaching practices within, beyond, and “beside” (Sedgwick 2003) the physical and metaphoric walls of the traditional, anthropocentric school classroom.

Despite the fact that UBC's teacher education programme offers courses in outdoor EE, and ecological justice is included as a central thematic strand within the programme, efforts to integrate EE throughout the curriculum and develop EE specialisations within the teacher education programme as well as graduate programmes have consistently failed to gain support and traction. For instance, congruent with Lin's (2002) findings is the lack of specific individual faculty members employed as EE specialists who can oversee the development of courses,

programmes, and special projects such as The UBC Orchard Garden. Rather, science educators (such as Sandra Scott) and mathematics educators (such as Susan Gerofsky) have played an active role in teaching EE and developing EE programming from the side of their already overflowing desks. In addition, untenured adjunct and sessional instructors continue to offer many of the summer outdoor EE courses, and, while these instructors may be specialists with extensive experience and qualifications in EE, they are marginalised within the neoliberal academy from many of the institutional decision-making processes required to implement and sustain EE programming within the Faculty of Education. This has all contributed to a fragmented approach to EE within teacher education that has undermined numerous passionate attempts to develop programmes, certificates, diplomas, courses, and special projects (e.g. The UBC Orchard Garden) over the last decade. Without institutional support, EE has remained poorly infused within the teacher education programme.

Notwithstanding this fragmentation, initiatives such as The UBC Orchard Garden reflect yet another common factor in the implementation of initial teacher EE, namely, the central role of motivated and engaged individuals. As Van Petergem et al. (2005) report, “Education professionals—teachers, department heads, as well as non-teaching staff—and students are the key players in EE” (p. 162). As we suggest below, students have driven numerous EE initiatives in teacher education; nevertheless, in order for these programmes to be well integrated within teacher education, the programmes require financing, space, and faculty support embedded in teacher education programmes instead of being treated as occasional novelties. The integration of such inherently interdisciplinary programmes, however, necessitates a collaborative school culture, strong institutional leadership, and faculty professional development and support (Van Petergem et al. 2005). This collaborative culture is difficult to achieve. According to Van Petergem et al. (2005), “the most difficult constraint seemed to be the motivation of all the teachers as a team. Most of them did not feel committed to action since they were trained to work autonomously” (p. 168). The ability for faculty, staff, and students to collaborate as human and more-than-human collectives within the highly individualistic, anthropocentric, and increasingly neoliberal culture of the academy is clearly a barrier to implementing initial teacher EE. Unfortunately, this also replicates the isolation experienced by many educators within the school system.

A further barrier to faculty collaboration is the continued emphasis of disciplinary silos, a particular challenge for EE as a highly interdisciplinary field. As Van Petergem et al.’s (2005) research suggests, many “teachers regarded EE as a supplement in addition to the overabundance of topics in the syllabus. In particular, the non-science teachers, with little EE experience, did not feel responsible as EE was understood to be a task of science teachers” (p. 168). While many EE proponents recognise the inherently interdisciplinary nature of the field, EE programming is still often housed within the disciplinary silo of science education, which continues to be perceived as its most “natural home”. For instance, McDonald and Dominguez (2010) suggest that:

although the basic premise of EE calls for an interdisciplinary approach, the reality of resource availability for preservice preparation may mandate a single subject approach. Therefore, the most reasonable alternative would be the use of science methods courses for EE preparation delivery. (p. 26).

While the two formal EE courses in UBC's Faculty of Education programme are housed within science education in the Department of Curriculum and Pedagogy, the creation of inquiry courses and the CFE practicum offer the potential to overcome these boundaries and create spaces for the collaborative and transdisciplinary infusion of EE.

The UBC Orchard Garden is one such space that resists disciplinary enclosure and follows an emergent, arts-based, responsive curriculum dependent on complex factors. These factors emerge from the interests of the student team at the garden, the season, the weather, the visiting classes' curricular or pedagogical foci, contributions from community partners (guest speakers, artists, agriculturalists, etc.), scholarly readings, and unplanned conversations and activities that emerge at the garden.

8.6 Becoming Teachers Together

Through practices of becoming teachers together, perhaps EE initiatives such as The UBC Orchard Garden can contribute to fundamentally changing the culture and context of teacher education and education (particularly schooling) more generally. As Hargreaves and Jacka (1995) note, the experience of beginning teaching continues to be shaped by "physical isolation, teacher cultures of non-interference and individualism, absence of administrative or collegial support, and school staffs who are unreceptive to the new methods that beginning teachers can bring" (p. 60). What we have explored and encountered through The UBC Orchard Garden is that entanglements of land, student teachers, and ever-changing constellations of highly interdisciplinary undergraduate and graduate student gardeners/student educators with faculty mentorship can create unique intergenerational and inter-species conditions for "becoming teachers together" (Ostertag 2015) that are unlike those found in most teacher education programmes or schools (Brennan and Clarke 2011).

As gardeners on the margins of the campus landscape and educators on the margins of the teacher education programme, becoming teachers together has allowed students to teach students in close relation with the land. The student educators working with the garden have included doctoral and master's students in Education, graduate students in Landscape Architecture, undergraduate students in Land and Food Systems, and other student teachers through the CFE. While these students are mentored through close collaboration with Faculty Advisors associated with the garden, they have a great deal of freedom to develop, experiment with, and respond to unique curricular and pedagogical encounters. Strengths of this approach include creating conditions for teacher education that are highly collaborative, creative, relevant to students' interest, supportive, inter- and transdisciplinary, inspiring, flexible,

responsive, and locally relevant and allow for risk-taking and experimentation. As such, becoming teachers together in close relation with the land- or garden-as-teacher can create a community of human and more-than-human teachers and offer an alternative to the isolation and fragmentation of the four-walled classroom that materially and discursively creates barriers to implementing initial teacher EE.

As with any ongoing, student-driven project at schools and universities, The UBC Orchard Garden has also had to cope with the fact that students are at the university for a limited time and that even faculty members may move on to other jobs, life stages, and projects. Despite the difficulties around having key members of the team graduate and move away, it has been very heartening to find that, as one incredible, dynamic, and irreplaceable student must leave, several more have shown up wanting to do research, teaching, and volunteer work because of a deep love for gardens as living places of teaching, learning, and sustenance. In the 10 years of Orchard Garden projects, there has been constant support and engagement with the project from Land and Food Systems undergraduates, teacher candidates, and Master's and Ph.D. students, along with faculty and staff. Alumni of the Garden have continued to work in EE and frequently support the Garden through collaborations from their new positions as teachers, researchers, or gardeners in the Vancouver area, or from their new homes around the world (Louw and Gerofsky 2013a, b, c, d).

For better or worse, becoming teachers together in these rich margins of the university is also relatively inexpensive. While the fluidity and transience of student leaders at The UBC Orchard Garden has been a surmountable challenge for the project, the lack of permanent funding for the project remains a continuous challenge. The UBC Orchard Garden continues to survive, month-to-month and year-to-year, on a series of small- and medium-sized short-term grants from a variety of sources, including internal university funding for innovative teaching and learning projects, sustainability grants, student society and work-study grants, and small grants from local NGOs and government youth employment projects.

Deans and department heads, while offering moral support and featuring The UBC Orchard Garden as a “poster child” for sustainability initiatives in promotional publications for the Faculty (UBC 2012a), have been able to offer little in the way of legitimation or core funding, through, for example, the status as a centre or institute, and hiring instructors. This past decade has been a time of deep and repeated budget cuts to all academic units at UBC, while at the same time, university faculties have been given the responsibility of raising millions of dollars to fund the university's massive building projects, and fundraising for these high-rises has taken anxious precedence over all other initiatives, large and small. Increasingly, huge concrete and glass towers take priority on the neoliberal campus, whether or not they actually end up being fully inhabited or making money for the university. In these days, when academics and students do their work from home, a café, beach, or out-of-town conference with Wi-Fi on portable devices, more and more university offices and laboratories sit eerily empty much of the time, especially during the summer months, while construction of ever more offices and labs continues all over campus.

Gardens, on the other hand, are treated as temporary, movable, and disposable frills, particularly when viewed by the development arm of the university. To those in charge of building a greater number of money-spinning office towers, residences, condos, shopping malls, golf courses, and even resorts on university campuses, teaching and learning gardens are not taken seriously as academic classrooms and research sites. In this (conventionally gendered) view, big high-rise towers made of hard materials are powerful and valuable, while small, fertile gardens of living, tender, seasonal plants and trees are seen as weak, marginal, merely decorative, and appropriate only to the fringes of a high-powered, moneyed, world-class research institution (see Fig. 8.3). These discourses are highly gendered, since gardening and teaching are marginalised in the “pink ghetto” of women’s activities, which, as Gough (2013) recognises, frequently echoes the gendered nature of EE discourses:

The foundational discourses of EE are “man-made” discourses at least two levels—because of the absence of women in their formulation and because of the modernist science that separates “man” and “nature” and associates “woman” with “nature”. The genderedness of the discourses also permeates their epistemology—not only are non-male perspectives not valued, but the epistemology, being consistent with modernist science, views knowledge as universal, consistent, and coherent and the subject of knowledge as culturally and historically disembodied or invisible and homogeneous and unitary. (p. 16)

As a team of mostly female students and faculty advisors at The UBC Orchard Garden, we have responded to this often-times imposed marginalisation as a challenge and a source of activist energy that continues to drive our collaborative work as teachers, gardeners, and researchers.

Constantly confronting unstable funding and space, however, has been a powerful pedagogical experience for the students, community members, and faculty who teach, learn, and grow together at The UBC Orchard Garden. In fact, it has become one of the central EE stories we tell with the garden and one of the ways in which the failures of the garden are pedagogical, unruly, and potentially transformative. As Halberstam (2011) writes,

The Queer Art of Failure dismantles the logic of success and failure with which we currently live. Under certain circumstances, failing, losing, forgetting, unmaking, undoing, unbecoming, not knowing may in fact offer more creative, more cooperative, more surprising ways of being in the world. (pp. 2–3)

At The UBC Orchard Garden, failures to secure funding and space—or, in the words of Sandra’s colleague, to “take over” education—have created surprisingly creative and collaborative ways of being and teaching together in the world.

8.7 Conclusions: Gardening the Margins of the Academy

In UBC's previous strategic plan,⁹ the tagline *Place and Promise* was used to encapsulate the mission and vision of the university and is highly visible on all of the university's branding, advertisement, and signage. In a discussion document describing the meaning of the tagline, the UBC explains how "the University is informed by the physical majesty of this place. It is easier here to feel a *profound connection to the land* [emphasis added]. It is also understandable to feel a particular responsibility to protect this place, and this planet" (UBC 2012b, para. 1). While the sentiment in this statement might suggest a "green light" for place-based EE programmes and initiatives, our experiences in teacher education and with The UBC Orchard Garden suggest that the realities of life "on the ground" are incongruent with UBC's branding. Perhaps we need to continue reading what else is contained within the university's notion of *Place and Promise* to help us understand where some of these disconnections may originate:

Open vistas and boundless skies evoke a *frontier* spirit, metaphors for the opportunities UBC presents to learn, to explore, to question, to grow. The University *explodes its limits* whenever students, staff, faculty, and alumni set their *collective gaze on a common horizon*, and we are doing that now. (UBC 2012b, para. 2; all emphases added)

It is here that the universalising, gendered, colonial, and neoliberal underpinnings of *Place and Promise* become more apparent, since the settler fascination with frontiers and capitalist ideologies of endless, explosive, limitless growth are central to the university's connections between land and learning. As Tuck et al. (2014) maintain, the university's interest in feeling a "profound connection to the land" is an example of "the seduction of claiming Indigenous land as 'our' [settlers'] 'special places' where feeling connected to the natural world is possible" (p. 14). Tuck et al. (2014) also question who are the educators (including the environmental educators) and researchers at UBC who set their "collective gaze on a common horizon" by reminding us to critically consider ways in which "gifted/enlightened non-Indigenous environmental or outdoor educators are the chosen ones to learn and pass on Indigenous knowledge and traditions" (Korteweg and Russell 2012, as cited in Tuck et al. 2014, p. 14). Land education offers a necessary turn for environmental educators engaging with initial teacher education, since it recognises the importance of decolonisation "in environmental education toward reconstituting a shared future, or perhaps parallel futures, for settlers and Indigenous peoples" (Tuck et al. 2014, p. 14). Through our work with The UBC Orchard Garden, we have just started to become engaged with colonial, patriarchal, and neoliberal discourses and material realities that continue to shape our campus landscape, gardening practices, pedagogies, and curricula.

What we have learned throughout our experiences of gardening and learning to teach together on the margins of the academy, however, has been to engage with

⁹UBC released its new strategic plan in 2018 entitled *Shaping UBC's Next Century*, but this new plan is not discussed here as the previous plan was in force when this chapter was written.

these messy and uncomfortable realities rather than escape them into a utopic garden paradise or refuge. We have learned to constantly ask questions, since scientific management and rationality work with, and sometimes clash with, more spiritual and holistic traditions and the unsettling possibilities of land education: What is a weed? What is a garden? Why plant in straight rows? Do you really mean to say the plants talk to you? Can we learn from gardens? Do we need to make the plots tidy before the winter? What can we learn by engaging ethically with “invasive species” or “native” plants? Is a garden a “natural” place? What are the stories that give support to certain practices? Are there other stories we should be attentive to, and do they support very different practices? By attending to these and a multitude of other questions, by attending to students and gardeners as teachers, by collaborating across and beyond the university, by becoming teachers together, and by gardening the margins of the academy, we are challenging and contesting Orr’s (1994) probing question: “What is education for?”

We are also, in a slow and erratic way, challenging and contesting the structures that reinforce an anthropocentric individualism that is at the heart of the increasingly neoliberal academy, teaching practices, and identities. As Berg et al. (2014) write, this fragmentation of relations is a central part of the increasingly neoliberal climate of the academy:

Universities in the space now known as Canada are situated on land stolen from indigenous peoples. ... These universities are the embodiment in both practices and actual bricks and mortar of the materialities of gendered social relations as they interlock with, for example, colonialism, racism, ableism and neoliberal capitalism. (p. 68)

Becoming teachers together in the marginal spaces of The UBC Orchard Garden has created conditions for human and more-than-human collaboration that unsettle—more than “take over”—the bricks and mortar of the academy. Sustaining the garden, therefore, as an integral (and, hence, no longer marginal) space and programme at UBC that contributes to broader efforts for initial teacher EE will continue to offer exciting challenges as the seedy weeds of our teaching and gardening together proliferate in unruly and unpredictable places and pedagogies.

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