Inside-Out Pedagogies: Transformative Innovations for Environmental and Sustainability Education

by

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ABSTRACT

Institutions of higher learning can be centers of meaning-making and learning and are expected to play a pivotal role in a global shift toward sustainability. Despite recent innovations, much sustainability education today is still delivered using traditional pedagogies common across higher education. Therefore, students and facilitators should continue innovating along pedagogical themes consistent with the goals of sustainability: transformation and emancipation. Yet, more clarity is needed about pedagogical approaches that will transform and emancipate students, allowing them to become innovators that change existing structures and systems. My dissertation attempts to address this need using three approaches. First, I present a framework combining four interacting (i.e., complementary) pedagogies (transmissive, transformative, instrumental, and emancipatory) for sustainability education, helping to reify pedagogical concepts, rebel against outdated curricula, and orient facilitators/learners on their journey toward transformative and emancipatory learning. Second, I use a descriptive case study of a sustainability education course set outside of the traditional higher education context to highlight pedagogical techniques that led to transformative and emancipatory outcomes for learners partaking in the course. Third, I employ the method of autoethnography to explore my own phenomenological experience as a sustainability student and classroom facilitator, helping others to identify the disenchanting paradoxes of sustainability education and integrate the lessons they hold. All three approaches of the dissertation maintain a vision of sustainability education that incorporates contemplative practices as essential methods in a field in need of cultivating hope, resilience, and emergence.

DEDICATION

I dedicate this dissertation to all my non-human friends from the vortex: Princess (cat), Ink (cat), Zip (hummingbird), Beija (hummingbird), Stella (coyote), Java (javelina), Buba & Bubo (great horned owls), and all the others, seen and unseen.

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Chapter 1 – General Introduction

There is a growing consensus among scholars from a broad range of disciplines that humanity is approaching a critical threshold. A great deal is at stake for all of Earth's inhabitants. This threshold is already in our view, but few dare to look at it. To really gaze at it, to really 'take it in,' demands everything of us. As the author, speaker, and teacher Stephen Jenkinson explains: "Grief requires us to know what time we're in" (Jenkinson, 2014).

Yet, if we scratch the surface of our collective denial, we can begin to see that large-scale transformation of the Earth's systems is not only imminent, but already occurring. Energy consumption has raised atmospheric carbon to levels higher than any point in the last 800,000 years (Lindsey, 2018). Disposable consumer packaging contributes to plastic pollution of the hydrosphere, estimated at 4.8–12.7 million metric tons annually (e.g., the oceanic garbage 'patches') and plastic micro-particles are now commonly found in everyday items like table salt (Borrelle et al., 2017). Agricultural food production has led to the eutrophication of waterways and the creation of estuarial 'dead-zones,' altering the abundance and distribution of aquatic organisms (Bianchi et al., 2010). The causes of these accelerating changes (Wals & Corcoran, 2012) can largely be attributed to industrialized production practices and patterns of human consumption that have developed over the last several centuries (Rockström et al., 2009; van der Leeuw et al., 2012).

Western education is a likely culprit in the degradation of those planetary systems that sustain life. As Orr (1992) explains, the purpose of education remains steadfastly twofold: "first, to equip our nation with a 'world class' labor force in order to compete more favorably in the global economy and, second, to provide each

individual with the means for maximum upward mobility" (p. 1). Thus, the hamartia of contemporary Western higher education is that it continues to educate the citizenry as if there were no ecological crises at all. The purpose and subsequent outcome of most Western education today is the development of laborers that produce more, faster, and better in a globally competitive industrial economy (Sterling, 2017).

Problem Statement

Environmental and sustainability education emerged over the last five decades in part to address the contradiction of the neoliberal thrust of education in the face of environmental degradation. However, these initiatives have lacked potency for several reasons. First, they are mainly augmentative in nature, adding sustainability to what Sterling (2004) refers to as an "already overcrowded curriculum" (p. 50). Second, they are embedded in institutions that are unwilling to question paradigms that might challenge the "marriage between the academy and the worlds of power and commerce" (Orr, 1992, p. 2). Third, the dominant practices, or pedagogies of environmental and sustainability education have remained static for decades and often mimic default teaching approaches across a wide range of disciplines (Jickling, 2017; Stains et al., 2018).

My research attempts to address the third problem – that of "anachronistic pedagogy" (van der Leeuw et al., 2012, p. 118). Evolving sustainability education requires that both students and facilitators transform their roles and be willing to be themselves transformed (Blenkinsop & Morse, 2017). The goal for my research is thus threefold: (1) to provide a framework of pedagogies grounded in transformative and emancipatory learning theories to help students and facilitators orient

themselves, articulate their intent, plan appropriately, and advance teaching methods in sustainability education; (2) to perform a case-study of a sustainability education course outside of the neoliberal ethos of Western higher education and describe how transformative and emancipatory pedagogies are used in "the real world," and (3) to use my own experience of teaching and learning in sustainability education, through the method of autoethnography, to explore and describe the paradoxical challenges of sustainability education that persist in institutions of higher learning.

Dissertation Organization

My first dissertation chapter addresses the question: can understanding the ways in which transformative and emancipatory pedagogies interact (i.e., complement each other) inform the facilitation of sustainability education? Grounded in transformative and emancipatory learning theories, this chapter proposes a framework having two pedagogical dimensions: the transmissive/transformative dimension and the instrumental/emancipatory dimension. Consequently, the possibility exists for sustainability pedagogies to be instrumental, but not transmissive—as well as transformative, but not emancipatory. While not intended to be a "catch-all" for every pedagogical approach practiced in sustainability education today, my framework is intended to (1) provide clarity regarding the different terms, (2) allow students and facilitators to plan appropriate curricula, and (3) provide a compass that points toward the desired interaction of transformative and emancipatory pedagogies. Understanding how these dimensions interact is important to pedagogical innovation in sustainability education. The framework is provided not to augment the already extensive literature on educational philosophy, but rather to

provide a roadmap for facilitators and students, as well as provide a tool for framing the analyses of the subsequent chapters of my dissertation. A manuscript describing the framework is in press at the Journal of Sustainability Education.

The second chapter of my dissertation employs a single-embedded, descriptive case study (Yin, 2014) of a residential sustainability course at Findhorn Foundation College, U.K., titled "Eco-village Design Education." The study is intended to answer the question: what are the transformative and emancipatory elements of a richly described learning curriculum for sustainability outside of the traditional Western institution? The qualitative approach utilized included multiple forms of case-related data: observational field notes, artifacts related to the course and its context, surveys, and semi-structured interviews. The purpose of the study was to generate a rich description of a course (and its pedagogies) that could be used to inform sustainability curricula within traditional institutions of higher learning and further develop the theories of transformative and emancipatory learning in the context of sustainability education.

The case was selected based on the explicitly stated aims, goals, and student outcomes of the Findhorn College. First, Findhorn College aims for participants to acquire knowledge, skills, and futures orientations consistent with sustainable worldviews (Gaia Education, 2012). Thus, their approach is consistent with elements of modern competence-based approaches (Wiek et al. 2011). However, they also claim to move beyond traditional competencies into the realm of transformative education, advocating for a deepening sense of purpose and meaning, strengthening connections to participants' inner-dimensions of reality, and developing relationships with nature. Findhorn College's instructional approach is based on learning communities, groups of diverse learners who share a common learning goal. These

learning communities are the college's approach to leveling asymmetries of power in their programs. In these communities, students and faculty learn together, power differences are minimized, outcomes are self-directed, curriculum is flexible, and varied learning faculties (e.g., cognitive, embodied, emotional) are embraced. The college's curriculum (and the design of the course) is both accepting and embracing of emancipatory and transformative pedagogies. Thus, Findhorn College represented a context of study well-suited to the exploration of "real-world" transformative and emancipatory learning for sustainability. The goal of the study was to richly describe and learn from an example of sustainability education outside of the traditional Western institution.

My third dissertation chapter involved my own phenomenological experiences as a sustainability student in graduate school, as well as the design and co-facilitation of two special topics courses in the curriculum at the Arizona State University's School of Sustainability. This chapter was aimed at answering the question: how do teachers and students of sustainability education navigate the paradoxes that persist in sustainability education in the face of growing global crises? The two classes I facilitated were essentially a practicum component of my dissertation (they were offered in addition to my teaching assistantships), allowing me to develop and experiment with emancipatory and transformative pedagogies in the classroom, while exploring the (often paradoxical) challenges present. The first course, titled "Cultivating Inner Sustainability" was offered in Spring 2017 and was a course intended to explore various contemplative practices in the context of sustainability. The class had an enrollment of approximately 24 students. The second course was titled "Decolonizing the Unsustainable Mind" and was intended to introduce a model for the concept/process of decolonization for sustainability, also

using contemplative practices. The class had an enrollment of 18 and was offered in Spring 2018.

The methodology used for this chapter of the dissertation was analytic autoethnography (Anderson, 2006). In this method, the researcher acknowledges participation in a community (in my example, both classroom learning and classroom facilitation), reflects on their personal experience of cultural embeddedness, and describes the theoretical relevance of their experiences along distinct moments of the narrative. The data collected included photographs, written reflections, and memories. The manuscript, which I intend to publish in the Journal of Transformative Education, contrasts transformative learning theory with my personal experience of teaching.

Finally, Chapter 5 summarizes the general conclusions of chapters 2-4 and is intended to inspire those students and facilitators of sustainability education who seek to reform sustainability education (or education at large). My final concluding remarks are also given.

Chapter 2 – Interacting Pedagogies: A Review and Conceptual Framework for Sustainability Education

Institutions of higher learning (IHLs), are expected to play a pivotal role in a global shift toward sustainability. IHLs provide a social container where norms and behaviors consistent with ecological and social well-being can develop. Accordingly, most IHLs today actively promote forms of non-formal sustainability education on their campuses (e.g., recycling, food waste, and transportation programs). Assuming students learn and maintain these behaviors after graduation, such initiatives may promote sustainability beyond the spatial and cultural boundaries of the institution.

IHLs have also begun to develop formal sustainability curricula, inspiring some scholars to envision what an exceptional sustainability education might look like. Although consensus is lacking in the literature, many agree that *emancipatory* and *transformative* learning are essential components that sustainability education requires to be effective (Moore, 2005; Sipos et al., 2008; Sterling, 2011; Wals, 2012; Summerfield & Wells, 2017). Emancipatory learning challenges power structures (both inside and outside the classroom) through a praxis of dialogue and action (Freire, 2007). It promotes change by seeking to transgress boundaries of race, sex, and class through pedagogies of participation and shared meaning-making (hooks, 1994). Transformative learning, through similar experiential pedagogies, sparks personal and ethical engagement (Eaton et al., 2016), encouraging students to ponder their meaning-making processes during and beyond the college experience. Transformative learning is also holistic, involving intellectual, embodied, emotional, and intuitive faculties of knowing (Sipos et al., 2008), and implies

reflexivity and inquiry into students' own ideas, values, and beliefs about themselves and the world (Kitchenham, 2008).

A problem today is that much sustainability education conforms with *transmissive* or *instrumental* learning approaches that are the default across a wide-range of disciplines (Sterling, 2001; Burns, 2015; Jickling, 2017; Stains et al., 2018). Transmissive learning assumes that society already possesses the knowledge required to address sustainability challenges, and teachers just need to "transmit" it to students; meanwhile, the knowledge itself, as well as learners' ways of being in the world typically remain unexamined. Instrumental learning, on the other hand, regards education as "a means to an end" (Nolet, 2016, p. 87). Thus, in the case of most Western IHLs, students go to college to get a job (Sterling, 2017). Yet, without knowing which types of jobs will exist in 20-30 years, much vocational training provided by IHLs today is likely to become irrelevant. Further, instrumental approaches tend to leave power structures and/or boundaries associated with race, gender, and class intact. I suggest that sustainability challenges cannot be addressed either by knowledge accumulation or vocational training; rather, they require engagement with power structures and social boundaries and a fostering of new ways of experiencing the world altogether. As such, I regard both transmissive and instrumental learning in sustainability education as foundational – a prerequisite to "higher order" (Wals & Jickling, 2002; Sterling, 2011, pp. 22-26) interactions of transformative and emancipatory pedagogies.

Many challenges facing civilization today require that both students and facilitators of sustainability education rebel, humbly but courageously, to transform their roles and be willing to be themselves transformed (Blenkinsop & Morse, 2017). The goal for this paper is to provide a framework of pedagogies for those willing to

take up this challenge, helping to orient themselves, articulate their intent, plan appropriately, and advance teaching methods in sustainability education. In beginning a journey, it is helpful to know where you have already been. Therefore, I begin by briefly reviewing the evolution of sustainability education, attempting to explain the current state within a broad historical context. Transformative learning theory is then also briefly reviewed to clarify the frequently contested concepts of transformation and emancipation. The framework for interacting sustainability pedagogies is then introduced and discussed. Finally, I draw upon years of research in the contemplative sciences to propose a future vision of sustainability education that integrates contemplative pedagogies, which may be essential to the arduous task of transformative and emancipatory learning.

The Emergence of Sustainability Education

Recognizing IHLs as potential intervention points in humanity's response to urgent sustainability challenges, sustainability education emerged in "waves" during the 20th century (Wals & Blewitt, 2010). The first wave coincided with initial descriptions of "wicked problems" in the late 1960s and was contemporaneous with a literary movement aimed at publicizing the potential for environmental disasters (Churchman, 1967, p. 141). Works such as "Silent Spring" (Carson, 1962) primed the culture for a new type of education. It was referred to generally as "environmental education," and early attempts to describe its scope and purpose appeared during the first Intergovernmental Conference on Environmental Education (UNESCO, 1977).

Accordingly, the late 20th century saw an increase in the number of IHL program titles that included the word "environment." Environmental studies,

environmental engineering, and environmental law programs were but a few examples of attempts to adapt to a growing number of complex, urgent, and socially-coupled environmental dilemmas. Later, the field began to integrate notions of development, social justice, and economics as inter-related, or coupled with, most modern environmental degradation issues. A 1992 UN conference highlighted the need for converging environmental education and development and declared "Education is critical for promoting sustainable development and improving the capacity of people to address environment and development issues" (UN-RIO, 1992, para. 36.3). With development as a new focus, scholars began to call for reforming environmental education, and 'environmental education for sustainability' (EEfS) emerged. While similar to environmental education, EEfS claimed the following key components: relevance, holism, values, action, and political literacy (Tilbury, 1995). Thus, EEfS was evolving with the recognition that sustainability challenges were socially-coupled, transdisciplinary, normative, and urgent. Nevertheless, while the inclusion of the words 'environmental' and 'sustainability' in IHL programs helped to legitimize an evolving discipline, it did little during that time to alter pedagogies which continued to conform with transmissive and instrumental approaches standard across most other disciplines.

While the first wave of sustainability in IHLs was about implementing environmental education (and the related EEfS) in response to environmental and developmental concerns, the second wave would address the complicity of IHLs in sustainability dilemmas and is often referred to as the "campus greening" movement (Wals & Blewitt, 2010). This wave focused less on pedagogy, and more on IHLs' efforts to reduce their ecological impacts. Efforts to sustainably manage institutional footprints took predictable pathways. Small-scale efforts included the

implementation of waste efficiency (e.g., composting, recycling), and energy efficiency (e.g., low-energy lighting) practices. Large-scale efforts included campus conversions to renewable sources of energy like solar and biogas. To date, many schools have made headway towards reducing their ecological footprints (see the 2017 Sustainable Campus Index for examples, AASHE, 2017). However, the efforts of this wave were arguably more about addressing the responsibility of IHLs, and less about evolving pedagogy.

Despite the development of the first and second waves of sustainability education, many indicators of global sustainability continued to decline during the 2000s (Rockström et al., 2009). Some academic institutions further adapted during that time by developing either 'add-on' or integrated sustainability programs and began to experiment more with emancipatory and transformative pedagogies, proposing visions for curricula that would not only describe sustainability challenges, but also question inherent power dynamics and engage students in experiential solutions endeavors (Brundiers et al., 2010; Brundiers & Wiek, 2011). These were perhaps important stepping stones toward the current third wave of sustainability education aimed at "learning that helps people transcend the 'given,' the 'ordinary,' and often the 'routine ways of doing,' to create a new dynamic and alternative ways of seeing and doing" (Wals & Blewitt, 2010, p. 66).

The emergence of the Decade of Education for Sustainable Development (DESD, 2005–2014) during the third wave also helped educators reflect on what types of learning were appropriate for sustainability (UNESCO, 2005). During this period, many instructors began reviving previously underutilized pedagogies, or innovating new ones, and approaches such as collaborative, community-based, and service learning became more common (Wals, 2012). Other third wave efforts

focused on innovative teacher training. One notable case is the General Teaching Council for Scotland's revised teacher standards for sustainability. The new standards include, as just one example, that "each practitioner, school and education leader should demonstrate learning for sustainability through their practice" (UNESCO, 2018, p. 150). Thus, the third wave of research, policy, and practice helped to evolve sustainability education significantly.

Yet, if our record of solving sustainability challenges is a proper gauge of the sum effort of sustainability education, there is scant reason to cheer. Most attempts to solve urgent, large-scale sustainability challenges have failed (van der Leeuw et al., 2012). Trends in global biodiversity, deforestation, eutrophication, and CO_2 emissions continue along undesirable trajectories (Rockström et al., 2009), with many accelerating in unsustainable directions (Steffen et al., 2015). These and other indicators of decline have caused some scholars to ask, "what sustainability problems have we solved over the last decade?" (cited in van der Leeuw et al. 2012, p. 117), while others have called for the end of the sustainability endeavor altogether (Benson & Craig, 2014). In the following section, I investigate several strands of transformative learning theory to justify a reinvigoration of the third wave of sustainability in higher education. This exploration is also a prerequisite for the introduction of a framework intended to provide clarity and direction for pedagogical practice and innovation in sustainability education. I propose that the answer to the question "is higher education ready" (Moore, 2005) is indeed – *ready or not, here we come*.

Transformative Learning Theory and Sustainability Education

When it comes to helping learners transcend the "given," the "ordinary," and the "routine," transformative learning theory is highly relevant. Incorporating a wide diversity of perspectives, transformative learning theory has been described as rational or extra-rational, autonomous or relational, emotional or intuitive, and individual or collective (Cranton & Taylor, 2012). While this diversity has led some to criticize transformative learning as nebulous, boundary-less, or metaphoric (Howie & Bagnall, 2013), there have also been concerted efforts to unify transformative learning theory under a single umbrella (Dirkx, 1998; Taylor, 1998; Cranton & Taylor, 2012). Today, transformative learning theory is codified into four dominant strands: the *emancipatory,* the *critical-reflexive,* the *developmental,* and the *extra-rational* (Dirkx, 1998).

Freire's Emancipatory Learning

Transformative learning theory in its emancipatory strand arose from the work of Paulo Freire (2007). By working at educating the poor in Brazil, Freire developed a theory of transformative learning he called *conscientization*, referring to consciousness-raising through critical reflection. The goal of this learning was not the transformation of the learner per se, but the transformation of social systems through the learner's emancipation, political liberation, and freedom from oppression (Dirkx, 1998). With the education that Freire proposes, "the oppressed unveil the world of oppression and through the praxis commit themselves to its transformation" (Freire, 2007, p. 54). Eventually, "it is the oppressed who, by freeing themselves, can free their oppressors. The latter, as an oppressive class, can free neither others nor themselves … the contradiction will be resolved by the appearance of the new

man: neither oppressor nor oppressed, but man in the process of liberation" (Freire, 2007, p. 56).

Freire's learning theory is founded on three premises. The first is the rejection of a "banking" approach to education (2007). Here, he refers to the instrumental and transmissive modes of education mentioned earlier. Freire instead articulates a liberating education utilizing acts of cognition. The second premise describes the need to move between reflection and action, as education without action is insufficient at reorganizing power structures. The third premise is that of student-teacher power leveling. Freire proposes students and teachers must be on equal footing, and their dialogue one of "love, humility, and faith, of which mutual trust between the dialoguers is the logical consequence" (Freire, 2007, p. 91).

The ideas of conscientization, a reflection-action dyad, and levelling of classroom power are ideally-suited to emancipatory education for sustainability, where freedom from oppression, action-orientation, and egalitarianism are crucial themes. Sustainability challenges are often situated within power contests arising from multiple representations by stakeholders; thus, they require awareness of, and action within, uncomfortable power dynamics. Avoidance of these contested perspectives makes addressing sustainability challenges impossible. Levelling of the student-teacher relationship transfers power to students, allowing them to self-direct their inquiry, and create discourse *as* learning, as opposed to discourse *in* learning. Education that addresses power, liberates learners, and leads to action is needed in sustainability education more than ever. Here, Freire's emancipatory approaches can play a central role.

Mezirow's Critical Reflexivity

The critical-reflexive strand of transformative learning theory arose in the late 1970s, when Jack Mezirow (1978) used the word transformative in his study of women returning to higher education or the workplace after an extended absence. He was attempting to address the needs of women returning to school or work through a qualitative study aimed at assessing factors that would impede or facilitate their success. The study was conducted at 12 learning institutions across North American and involved 83 subjects. After the study, Mezirow concluded that many women who had re-entered learning institutions had undergone a personal transformation.

The early work of Mezirow was influenced by three scholars: Thomas Kuhn, Paulo Freire, and Jurgen Habermas. Kuhn's (1963) idea of revolutionary and evolving scientific paradigms was particularly important, helping to form Mezirow's concepts of *meaning schemes*, *meaning perspectives*, and their transformations. Meaning schemes are made up of "knowledge, beliefs, value judgements, and feelings that constitute interpretations of experience" (Taylor, 1998, p. 6). A meaning perspective is a "general frame of reference, worldview, or personal paradigm made up of a collection of meaning schemes" (Taylor, 1998, p. 6). When novel experiences happen to an individual, and they cannot be integrated into an active meaning perspective, the individual must either reject the experience, or undergo a perspective transformation. This perspective transformation is at the heart of Mezirow's strand of transformative learning theory.

Mezirow's approach to transformative learning aims to transform the *individual*, distinguishing it from Freire's *collaborative* approach. It is the learner's experiences, which are socially-constructed in the classroom that provide content for

reflection. These experiences arise when learners engage reflexively in ways that promote (1) adding to and revising meaning schemes, (2) acquiring new compatible meaning schemes, and (3) meaning transformation that results when anomalous information cannot be resolved (Kitchenham, 2008). According to Mezirow, once a transformation occurs, it is impossible to regress to levels of less understanding, and the person who has been transformed is likely to alter their behavior. Approaches which allow one to alter their worldviews and behavior are considered by many scholars to be essential to sustainability education.

Developmental and Extra-Rational Transformative Learning

The last two strands of transformative learning theory are the developmental and the extra-rational. The developmental strand was championed by Larry Daloz (2015) and differs significantly from Freire and Mezirow in that transformation depends less on reflexivity and rationality, and more on holism and intuition (Dirkx, 1998). For Daloz, the transformative process is focused on personal change and self-actualization. Alternatively, the extra-rational strand, championed by the psychologist Robert Boyd, is focused on individuation. Boyd (2003) was heavily influenced by depth psychology, and the work of Carl Jung. As such, his idea of transformation is concerned with the emotional and spiritual dimensions of learning, and their integration into daily experiences (Dirkx, 1998). According to Boyd, learners are transformed by becoming aware of aspects of themselves that they are not fully conscious of. While the strands of transformative learning theory that Daloz and Boyd propose make up a smaller portion of the historical theory and research, they are important to a unified theory of transformative learning continuing to emerge (Cranton & Taylor, 2012). Further, they are essential to a portfolio of

emancipatory and transformative pedagogies in sustainability education because they address a diversity of learning preferences, skills, and cultural backgrounds. They also go further in engaging the embodied, emotional, and intuitive dimensions of transformative learning, and thus represent a holistic education that must be present in learning for sustainability (Sterling, 2001; Papastamatis & Panitsides, 2014).

In summary, transformative learning theory is widely cited, applied in diverse contexts (e.g. O'Sullivan et al., 2002; Taylor & Cranton, 2012), and aims to change social structures as well as individuals. It claims to relieve oppression and power imbalances. It engages learners holistically, requiring embodied, emotional, and intuitive faculties of knowing. Finally, it necessitates action, which help learners relieve the tension of newly acquired perspectives through engagement. Morell and O'Connor (2002) suggest that the theory supports:

> "a deep structural shift in the basic premises of thought, feelings, and actions. It is a shift of consciousness that dramatically and permanently alters our way of being in the world. Such a shift involves our understanding of ourselves and our self-location: our relationships with other humans and with the natural world" (p. xvii).

This is the kind of education sustainability scholars are calling for (e.g., Moore, 2005; Sipos et al., 2008; Sterling, 2011; Wals, 2012; O'Brian & Howard, 2016), an education of a different kind. As Wals summarized in his 2012 review, "as the DESD progresses, so does the realization that ESD needs to move beyond the transmissive to a transformative mode" (p. 23). Revitalizing an integration of transformative learning theory into sustainability education is crucial to achieving these goals.

The Interacting Pedagogy Framework

Many scholars have tried to reify the pedagogical lexicon of sustainability education. Sterling, for example, described both the "mechanistic" and the "ecological" paradigms, linking the mechanistic as transmissive and the ecological as transformative (2001, p. 59), and characterizing them both as instrumental approaches (one from the top-down, the other from the bottom-up). Wals et al. (2008) have written about the need to choose between instrumental and emancipatory approaches wisely; however, they do not refer to transformation except to mention that "transformative learning disappears" when a project becomes more instrumental and less emancipatory (p. 62). Other scholars, noting the prevalence of prescriptive transformations, have identified the need for sustainability pedagogies that are both transformative and emancipatory, oriented toward capacities for disruption, resistance, and social agency (Lotz-Sisitka et al., 2015). They argue that the types of innovations required to bring about social change emerge in niches of collaborative, transdisciplinary agency.

Despite the occasional tendency to contradict, or conflate terms, I regard Western sustainability education as having two interacting (i.e., complementary) pedagogical dimensions: the transmissive/transformative dimension and the instrumental/emancipatory dimension (Figure 1.1). Consequently, the possibility exists for sustainability pedagogies to be instrumental, but not transmissive—as well as transformative, but not emancipatory. While not intended to be a "catch-all" for every pedagogical approach practiced in sustainability education today, the framework *is* intended to (1) provide clarity regarding the different terms, (2) allow students and facilitators to plan appropriate curricula, and (3) provide a rebel's compass that points toward transformative and emancipatory pedagogies.

The framework also aims to illuminate the ways in which pedagogies for sustainability education interact. The dimension of instrumental/emancipatory pedagogies describes a movement from individuality, structure, and predetermined outcomes to collaboration, agency, and self-actualization respectively. Similarly, the dimension of transmissive/transformative pedagogies describes a movement from content-focused, objective learning resulting in knowledge and skills acquisition to process-focused, subjective learning resulting in novel ways of being and meaning-making. Understanding how these dimensions interact is also crucial to the articulation, planning, and delivery of sustainability classes in IHLs. As such, the framework is provided not to augment the already extensive literature on educational philosophy, but rather to provide a map for facilitators and students who are striving to evolve the ways in which sustainability education happens in IHLs.

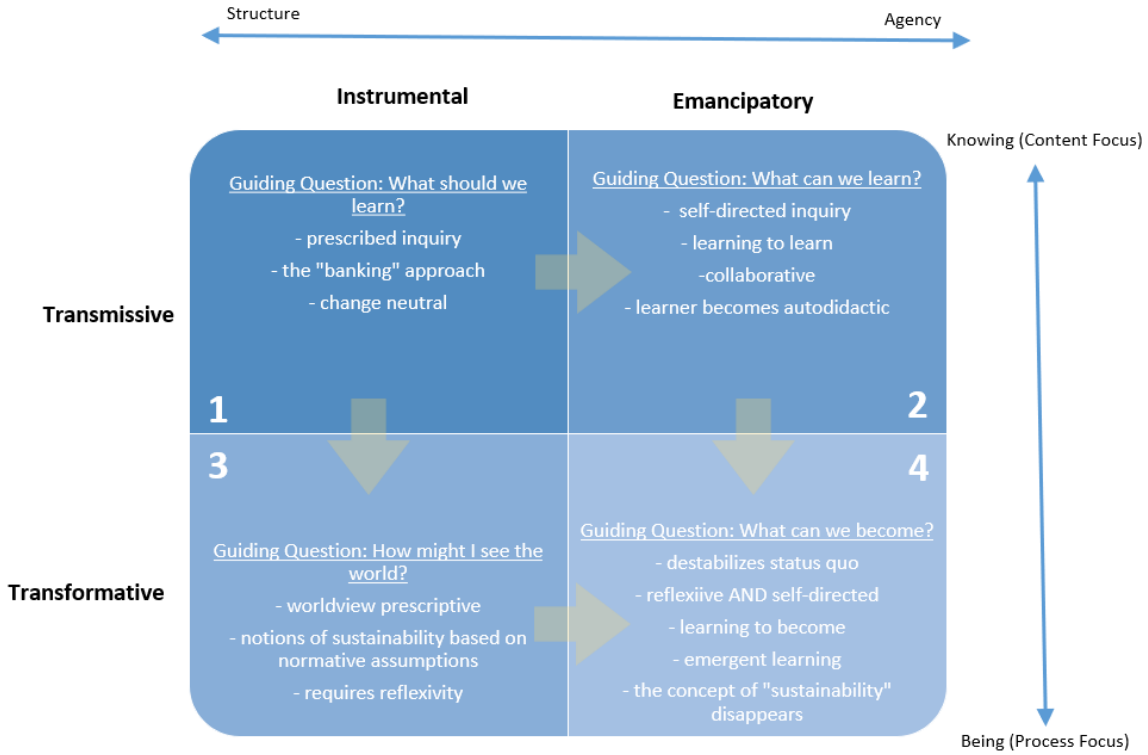

Figure 1.1. The interacting pedagogy framework for sustainability education.

Quadrant 1 of the framework describes the interaction of instrumental and transmissive pedagogies in sustainability education. This is the mode of learning described by Freire (2007) as the banking approach where the goal is to transmit knowledge or skills from the teacher (or content contained in texts, media, or other forms) to the student. Often used in the didactic instruction of science, technology, engineering, and math (STEM) subjects, first-quadrant approaches focus on prescribed content and pre-determined outcomes (i.e., rote learning) and often have limited impact (Stains et al., 2018). Such approaches are foundational in providing background knowledge for later learning; however, in those situations they can unintentionally favor learners who are predisposed to intellectual ways of knowing (as opposed to embodied, emotional, and intuitive ways of knowing). As such, I regard pedagogies consistent with quadrant 1 approaches as transitional and limited for advancing sustainability.

In quadrant 2 of the framework, content-based approaches take on a self-directed nature. Learners are no longer expected to acquire a specific body of knowledge prescribed by a knowledgeable other; instead, they can apply critical thinking and explore content at their own discretion. The interaction of transmissive and emancipatory pedagogies is often represented by problem-based approaches that encourage students to assume responsibility for their own learning via inquiry into real-world sustainability challenges. Although the idea of solving a problem may seem instrumental at first, it is the learner who is empowered via their exploration of the problem. Steinemann (2003), for example, describes problem-based learning as an approach that "emphasizes learning by doing…They take ownership of the problem, and the problem-solving process" (p. 218). In our framework, the primary difference between first and second quadrant learning is that in quadrant 2 the

learner has agency and can self-direct their inquiry. Accordingly, quadrant 2 is about learning to learn (and apply) on one's own. Although critical thinking is important throughout the framework, quadrant 2 is particularly useful for refining the critical thinking and problem-solving skills recognized as fundamental to addressing sustainability challenges (Thomas, 2009; Nolet, 2016). The development of these skills is also beneficial in the movement toward transformative approaches requiring critical reflexivity (e.g., Mezirow's strand of transformative learning theory).

The third quadrant of the framework is oriented around the guiding question "how might I see the world?" and is the interaction of instrumental and transformative pedagogies. The goal of learning in this quadrant is the transformation of learners' worldviews, values, attitudes, and behaviors, extending beyond knowledge transmission into the affective, worldview, and social domains. For example, Nolet (2016) stresses the importance of the "big ideas" of sustainability and advocates for an education that fosters peace, collaboration, responsibility, respect for limits, and interconnectedness, among others (pp. 61-79). Similarly, Wiek et al. (2011) specifically lay out systems-thinking, normative, interpersonal, anticipatory, and strategic competencies as key to solving wicked problems in society. In this domain, instructors recognize a need to develop specific competencies, working toward sustainability solutions and aspiring to spark change in learners toward sustainability worldviews. Pedagogical tools in this quadrant are often labelled "experiential learning" and are designed not only to alter the way we think, but also learner's ways of being in the world. Like quadrant 1, this quadrant is characterized by its prescriptive nature; facilitators pre-determine which attitudes, values, and behaviors are needed to bring about the flourishing of human and non-human inhabitants of the planet. For example, courses or programs in this quadrant

may elicit students' sense of connection to nature, helping them care about, protect, and conserve endangered species. Or they may prescribe specific environmentally responsible behaviors such as energy conservation or recycling as important outcomes for learners. Because programs in this quadrant are instrumental, instructors report success when students have changed their values, demonstrated use of new competencies, or adopted new behaviors (e.g., Schoolman et al., 2016; Felgendreher & Löfgren, 2018). Many initiatives documented during the third wave of sustainability education fall in this quadrant, representing a vast improvement over the quadrant 1 approaches typical of prior waves. However, learners in this quadrant are still situated in a hierarchy of worldviews; thus, critics of these approaches suggest they can be indoctrinating (Wals et al., 2008) or forms of behaviorism (Hyland, 1993). As Wals and Jickling (2002) claim:

> "The process of seeking, rather than setting, standards for education for sustainability, from an emancipatory vantage point, above all means the creation of space. Space for alternative paths of development. Space for new ways of thinking, valuing, and doing. . . Space for autonomous and deviant thinking. Space for self-determination. And, finally, space for contextual differences and space for allowing the life world of the learner to enter the educational process" (p. 230).

Nevertheless, quadrant 3 represents essential pedagogies on the path toward the transformative and emancipatory learning and a "process of living education as a journey of personal and social emancipation, beyond the limits of any exogenous prescription" (Sauvé, 2017, p. 122).

Quadrant 4 of the framework is the interaction of transformative *and* emancipatory pedagogies. While often conflated, I conceptualize these as having

distinct characteristics that, when combined, create a powerful leverage point for social change. The guiding question for this type of learning is "what can I become?", implying a self-directed inquiry into the process of being – not only individually, but in community with other humans and non-humans. Thus, 4th-quadrant classrooms are designed in such a way that they cultivate emergence, described as a living quality of creative and dynamic education (Sterling, 2001; Macintyre et al., 2018). Further, in quadrant 4, the concept of sustainability can become immanent (Grange, 2017); that is, the concept, word, or term "sustainability" disappears from the focus of the discourse and becomes an intrinsic characteristic of the learning process. Learning in quadrant 4 is uncommon in sustainability education because it challenges institutional and classroom authority that can lead to shifts in power. The transformative-emancipatory classroom is the wild, de-colonized, chaotic realm of creative and unrealized possibility. Pedagogies of quadrant 4 are powerful leverage points in sustainability education, precisely because they advocate for a *constructive deviance* that is atypical of the other quadrants; however, they are difficult in practice because educators are not trained to use them, and students' expectations and that of society in general are far removed. Nevertheless, Sauvé (2017) suggests appropriate methods of facilitation for the transformative-emancipatory classroom include those situated in "the fields of ecopedagogy, of critical environmental education, of ecocitizenship education, of community education in the context of 'Vivir bien' or 'Ubuntu,' and other 'alter-native' educational theoretical and practical fields" (p. 121).

In summary, this framework is intended to provide a guide, map, or direction to strive toward (the yellow arrows, Figure 1.1). Addressing sustainability challenges now and in the future will require emergent solutions. It will require destabilization of

existing power structures and a movement towards equity and justice for both human *and* non-human life-forms. It will require novel ways of being and experiencing the world. Thus, a movement away from instrumental and transmissive pedagogies in sustainability education toward transformative and emancipatory pedagogies, or their interaction, is recommended. Although the framework provided can guide sustainability educators on this journey, there are many daunting challenges of implementing transformative and emancipatory pedagogies in the classroom. In the next section, I describe contemplative practices as essential tools to assist in sustainability education, ones that can help us navigate rocky terrain and guide us toward the powerful combination of transformative and emancipatory learning.

Contemplative Pedagogy: A Fourth Wave of Sustainability Education

Contemplative practices have been part of human history for thousands of years (Thurman, 2006, p. 1765). They have been incorporated into many spiritual traditions, including meditation in Buddhism, forms of yoga from Hinduism, and contemplative prayer in Christianity. However, the current conceptualization of contemplative practice among many scholars goes beyond religion to include the arts/creativity, activist approaches, and relational practices like storytelling (Figure 1.2). The concept of *contemplative education* has been defined as a "way of knowing that compliments the rational and the sensory" (Hart, 2004, p. 29), and "a set of pedagogical practices designed to cultivate the potentials of mindful awareness and volition in an ethical-relational context in which the values of personal growth, learning, moral living, and caring for others are nurtured" (Roeser & Peck, 2009, p.

11). Other goals include the development of empathetic connection, compassion, creativity, and altruistic behavior (Zajonc, 2013).

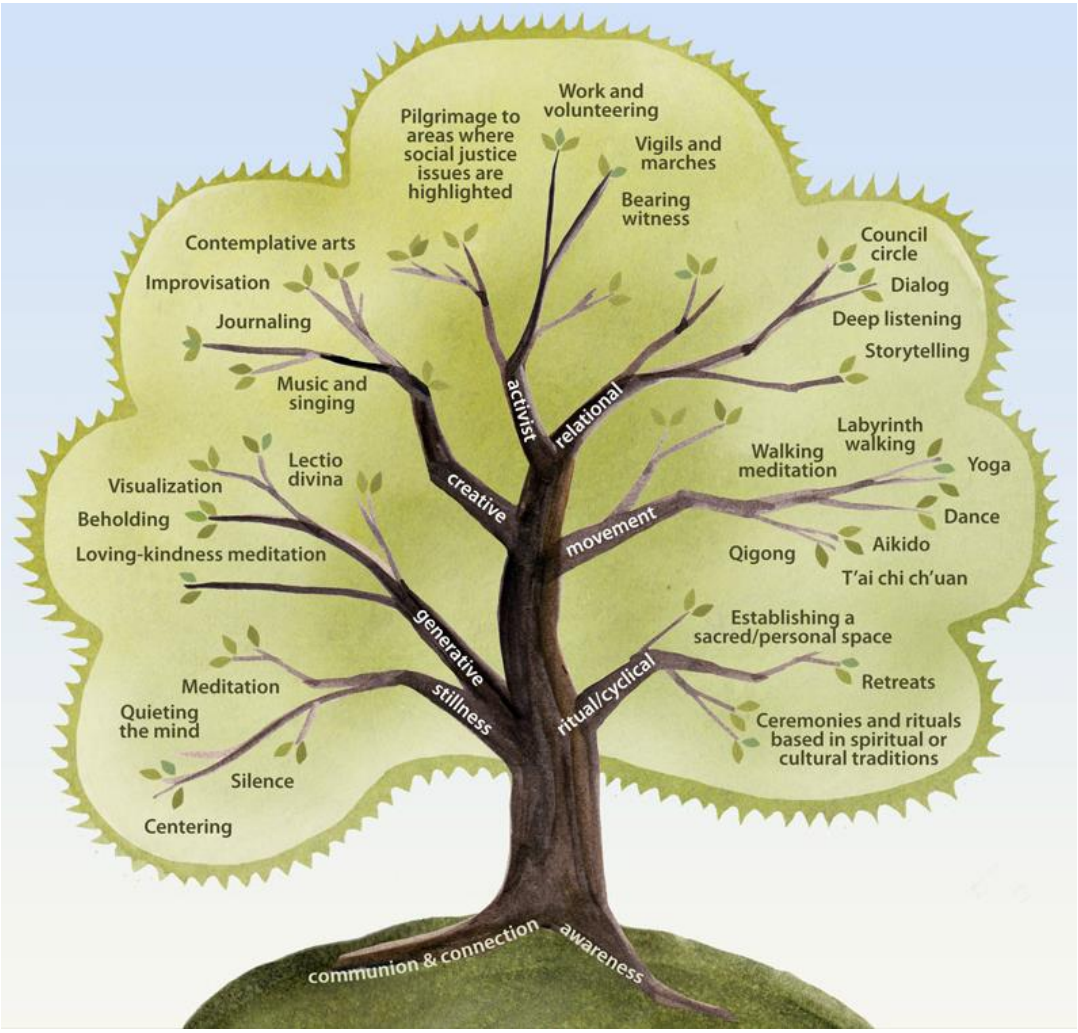

Figure 1.2. The tree of contemplative practices (CMIND, 2018).

The recent emergence of contemplation in education may appear to be sudden and rapid; however, it is more accurately a *re-emergence* of a form of education that has been suppressed by a prevailing rationalist approach that began centuries ago (Gunnlaugson et al., 2014; Morgan, 2015). For example, Foucault (2005) noted the convergence and divergence of the academic and the contemplative over time, with special attention to what he refers to as the "Cartesian moment." The current re-

emergence then, might be seen as an impulse to return a *care of the self* to mainstream education. However, pedagogies of contemplation oriented toward care can foster benefits beyond the student. For example, in a recent study of marginalized environmental education learners, researchers concluded that an ethos of care led to "widening spheres" of care for self, others, and nonhumans (Schindel & Tolbert, 2017, p. 31).

Although contemplative education has distinct methods, pedagogies, journals, and conferences, the principles and goals overlap considerably with transformative and emancipatory learning approaches. These commonalities appear to be leading to shared practices and theories (Morgan, 2015). Prior work highlights the link between the contemplative and the transformative in broader education. For example, Zajonc (2013) lists contemplative pedagogies as being a form of transformative education, further stating that cultivation of awareness, penetrative insight, and full comprehension are the "true basis for social transformation" (p. 90). Duerr et al. (2003) completed a survey of transformative learning in IHLs and described growing networks of contemplative practitioners suggesting that "the field of higher education is at an important juncture in its development, one in which the contemplative and spiritual can be integrated into learning and personal transformation" (p. 178). Robinson (2004) asked, "How can contemplative practices in the classroom foster the deepening of insight into the nature of this mind, this me that gives new meaning to education as transformation, education as liberation?" (p. 108). Roeser and Peck (2009) define contemplative education as having the aim of "personal growth and social transformation through the cultivation of conscious awareness and volition" (p. 2). Finally, Byrnes (2012) clearly describes contemplative teaching as "a framework that enables transformative experiences for teachers, students, and

educational communities" (p. 25). Thus, many theorists and practitioners increasingly recognize the potential of incorporating contemplative practices in transformative and emancipatory learning.

This leads to the question: what is it about contemplative pedagogies that suggests they align specifically with sustainability education? Contemplative practices are essentially ways of knowing our subjective realities (Miller, 2014), and these inner lives we live are implicated in issues of sustainability. We crave material pleasures, leading to consumption. We assert entitlement to the continuous availability of non-local goods, which leads to de-localization of food systems, carbon pollution, and social exploitation. Alternatively, empathy, compassion, cooperation, and creativity, all of which are fruits of contemplative practices (Brown et al., 2015; Ostafin et al., 2015), can lead to more just and effective forms of social and ecological stewardship (Wapner, 2016), and are considered competencies of sustainability (Wiek et al., 2011). For this reason, many scholars consider contemplative practice to be an essential component of pursuing a sustainable future (Wapner, 2016; Eaton et al., 2016).

The integration of contemplative pedagogies in sustainability education is beneficial in all four quadrants of the framework (see Ericson et al., 2014; Wamsler et al, 2017). In quadrant 1, contemplative practices such as mindfulness meditation and yoga have been shown to improve states of concentration (i.e., reduce distraction; Jain et al., 2007) and memory (Subramanya & Telles, 2009) respectively. These characteristics are essential to the knowledge-focused, rote-style learning characteristic of the first quadrant. Regarding quadrant 2, where learners are developing agency and self-determination, mindfulness meditation has been shown to be associated with both increased autonomy (Brown & Ryan, 2003) and the

moderation of intrinsically motivated behavior (Ruffault et al., 2016; Wamsler et al., 2017). In the instrumental-transformative dimension of sustainability education, contemplative pedagogies can help learners cope with the uncertainty, inevitable dilemmas, and emotional upheaval that is characteristic of transformative learning (Mezirow, 1991). For example, practices that cultivate compassion have been shown to improve emotional regulation and positive re-appraisal (Jazaieri et al., 2014; Hanley et al., 2015), both crucial skills for learners in transformative education settings. Finally, contemplative practice is perhaps most essential in the fourth quadrant of the framework, where creative emergence and collective social change are supported through pedagogies of meditation (Lebuda et al., 2016), storytelling (Agelidou, 2010), and an awakening of the emotional, bodily, and intuitive faculties of learning (Pulkki et al., 2017) that are crucial to the development of interconnected, yet liberated, learners.

To build momentum toward a fourth wave of sustainability education, one that utilizes contemplative pedagogies, I suggest scholars engage in practicing, theorizing, and researching such approaches in IHLs. The fourth wave I describe will not be easy due to persistent institutional constraints, thus requiring further innovation of approaches and the emancipation of educators working within those constraints. IHLs may also resist adopting pedagogies of contemplation when the institutions themselves are not reflexive. Nevertheless, with the addition of 2 billion humans to the biosphere in the next 40 years, civilization requires more than just innovation– we need pedagogies that help learners envision positive futures in a rapidly transitioning world, engage with resident power structures, and foster the awareness, compassion, and authentic care urgently needed. The framework for interacting sustainability pedagogies is intended to be a reflective planning tool for

educators in the field, cultivating transformation in themselves and their institutions. As those educators plan their journeys (designing courses, units, or programs), they should carefully consider which goals to strive for and quadrants to employ while considering the role contemplative practices might play along the way.

Chapter 3 – Pedagogical Laboratories: A Case Study of Transformative Sustainability Education in an Ecovillage Context

Whether we tend to relate to the concept of sustainability with frustration or with hope, there is very little doubt that humanity is approaching what systems scientists refer to as a bifurcation point. A bifurcation point is "a threshold of stability at which the dissipative structure may either break down or break through to one of several new states of order" (Capra, 1996, p. 191). The dissipative structure referred to here is nothing less than human civilization. This prospect raises urgent questions: what is required of humanity to pass beyond the threshold to higher states of organization and avoid collapse? How do we prepare? These and many other challenging questions foreground the difficult task of contemporary sustainability education.

However, the term "sustainability" itself remains a contested concept. Its ambiguous usage means that it is often defined by what it is not. Accordingly, publications regarding sustainability often begin with a recital of the many challenges our civilization faces. Some scholars claim that our inability to reify the concept parallels our inability to adequately address those challenges (Schultz et al., 2008). However, Wals and Corcoran take a more hopeful approach, arguing that the multiple meanings of sustainability are its strength, and that "the process of giving [it] meaning within a context is meaningful learning" (2004, p. 91). For them, meaning-*making* is also crucial to learning – complementary to meaning-*receiving* from a knowledgeable other.

Institutions of higher learning (IHLs) are centers of meaning-making and learning and are expected to play an important role in a global shift toward

sustainability. Sustainability scholars and international bodies are increasingly calling for shifts in educational practices that lead toward transformation (Sipos et al., 2008; Sterling, 2011; UNESCO, 2018), emancipation (Wals & Jickling, 2002; Vare & Scott, 2007; Wals et al., 2008; UNESCO, 2018), and contemplation (Ericson et al., 2014; Eaton et al., 2016; Wamsler et al., 2017), collectively referred to henceforth as transformative sustainability education (TSE). Yet, IHLs are constrained by neoliberal political and economic forces that tend to advocate for learning approaches that are either transmissive, instrumental, or both (Sterling, 2018; Chapter 2). In their description of the goal of sustainability education, Sterling, Dawson, and Warwick explain:

> Sustainability education seeks to nurture transformative learning experiences that can heal, empower, energize, and liberate potential for the common good. But… educational systems or institutions cannot adequately support such transformative education and transformative learning experiences unless they themselves have experienced or are experiencing sufficient transformative processes consistent with this ethos. (2018, p. 324)

IHLs also frequently conform to the epistemological and ontological frameworks of the dominant culture within which they are embedded making the possibility of exploring new and challenging onto-epistemological domains, a growing trend in TSE (Lange, 2018; O'Neil 2018), much less likely. Thus, there is a need for alternative learning contexts and institutions that are relatively free of these constraints and that are willing to be themselves transformed.

For decades, ecovillages around the world have served as place-based living alternatives advocating a sustainable way of life (Trainer, 2000; Van Schyndel Kasper, 2008). According to the Global Ecovillage Network (GEN), an ecovillage is

defined as an "intentional, traditional or urban community that is consciously designed through locally owned participatory processes in all four dimensions of sustainability (social, culture, ecology and economy) to regenerate social and natural environments" (GEN, 2019). While they are often conflated with utopian alternatives to mainstream society, ecovillages are more appropriately regarded as *learning laboratories* for social innovation (Accioly-Dias et al., 2017; East, 2018).

Some ecovillages' attempts to innovate have taken the form of educational experimentation (Hong & Vicdan, 2016; Litfin, 2012) – leading to forms of sustainability education with features distinct from traditional IHLs. For example, education within ecovillages is relatively free of the institutional constraints previously mentioned, making curriculum designers more willing to diverge from transmissive and instrumental pedagogies and explore novel onto-epistemological domains. Ecovillage education is also (ideally) situated within an ecovillage, addressing the importance of the cultural context in learning. Conversely, sustainability education in IHLs can often be situated in communities where sustainable living isn't recognized as an imperative at all. Lastly, while many are striving to be hubs of social transformation, the metanarrative of most IHLs remains aligned with neoliberal industrial labor specialization (Greenberg, 2013; Sterling, 2017). Ecovillages are explicitly about transforming society (including its educational constructs); therefore, they can offer transformative curricula infused with narratives of sustainability and regeneration.

The Current Study

Despite the international calls to transition toward TSE (UNESCO, 2005; Wals, 2012) empirical studies that demonstrate the types of pedagogies that cultivate

transformation, emancipation, and contemplation are still needed (UNESCO, 2018). The purpose of the current study was to describe the pedagogical approaches of a course in community-based sustainability education titled "Ecovillage Design Education." The goal of the 5-week course is to promote "small sustainable communities based on a holistic worldview with the vision of transformation of self and society" (Gaia Education, 2012, p. 8). My research questions were: (1) what are the elements (richly described) of an accredited transformative learning curriculum for sustainability outside of the traditional IHL?, and (2) to what extent is the program transformative and emancipatory, for whom, and in what ways (i.e., which pedagogical practices)? My research goal was to provide TSE practitioners with pedagogical tools of their own and help to corroborate and further develop a growing theoretical literature in TSE.

Method

Design, Setting, and Unit of Analysis

This investigation followed a descriptive-embedded case study design, where multiple forms of qualitative data were collected at multiple contextual levels (Yin, 2014; Figure 2.1). The strategy of collecting data at different levels of embeddedness was intended to strengthen the findings through convergence and data triangulation (Yin, 2014; Ravitch & Mittenfelner-Carl, 2016). The study was conducted at Findhorn Foundation College (henceforth "college"), a non-governmental organization (NGO) located near Forres, Scotland, U.K. The college offers several courses in sustainability education with the explicit goal of providing transformative learning opportunities for participants using approaches that are holistic, collaborative, and systems-oriented (Findhorn College, 2019). The college is

unique in that it is located within the Findhorn Ecovillage, a spiritually and ecologically-oriented community that was initiated in the early 1960s by a small group who were seeking to live lives more aligned with the natural cycles of the surrounding environment. Today, Findhorn Ecovillage is home to more than 350 residents, as well as approximately 40 social enterprise organizations, and is part of a growing worldwide network of sustainable ecovillages.

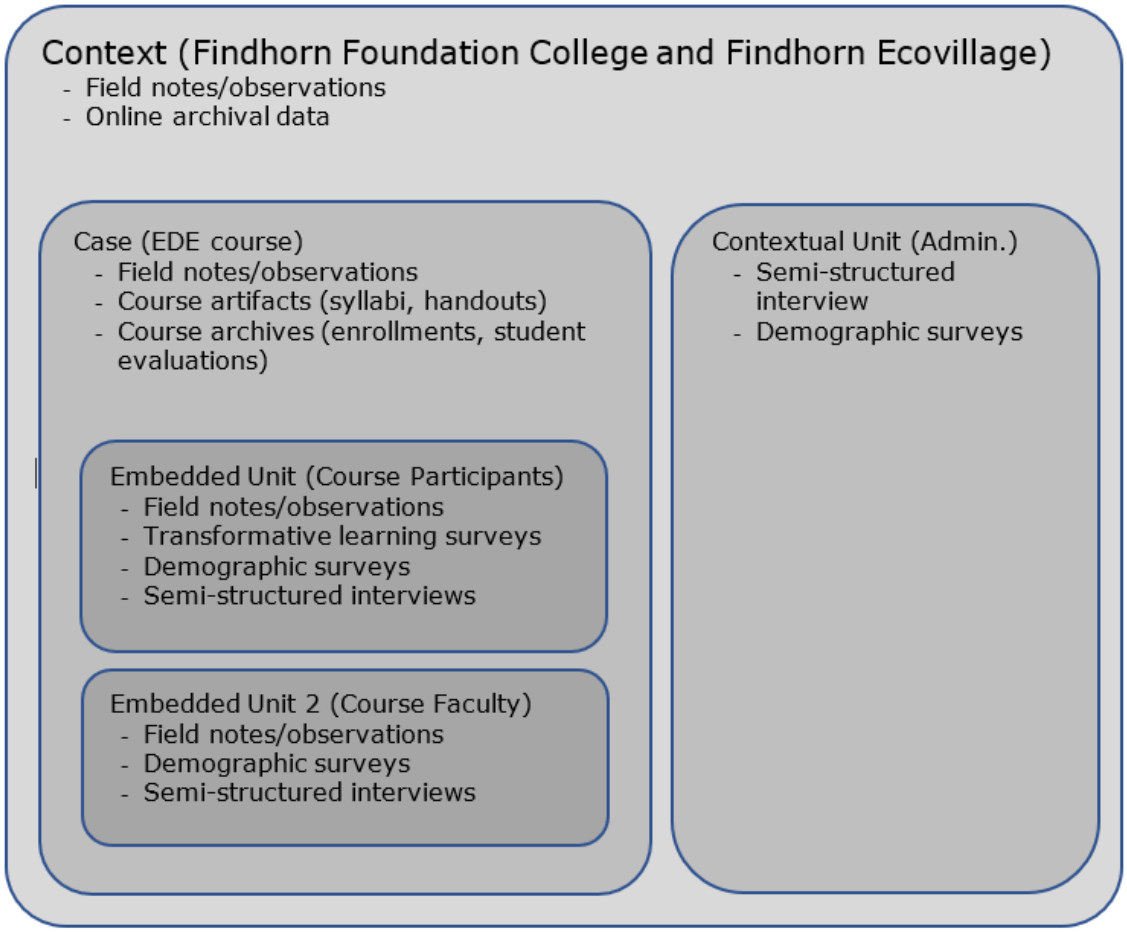

Figure 2.1. Data collection framework for the embedded case study design (Yin, 2014).

The unit of analysis, or the actual "case" in this study (Yin, 2014), was the Ecovillage Design Education (EDE) course which took place from October 2 – November 17, 2018, at the college. The EDE is offered annually through a

partnership with Gaia Education, an NGO that assists in designing, organizing, and promoting the course. During the 5-weeks, participants of the EDE are housed within the ecovillage, and take part in many of its daily rhythms. The EDE has 4 primary modules, which are the hallmark of Gaia Education: the ecological, economic, social, and worldview modules. While the ecological and economic modules articulate sustainability on a material level, the social and worldview components include political and symbolic dimensions respectively. For example, the social module includes sub-elements of "Art, Ritual, and Social Transformation; Education and Social Networks; and Activism, and Leadership and Empowerment" (Gaia Education, 2012, p. 5). Thus, its goals overlap with "Freirian" approaches to social transformation through emancipatory learning (Freire, 2007). The worldview module includes sub-elements of "Reconnecting with Nature, Socially Engaged Spirituality, and Transformation of Consciousness" (Gaia Education, 2012, p. 5). Consequently, it is aligned with the extra-rational threads of transformative learning theory that emanate from Boyd (2003) and Daloz (2015). Finally, while none of the participants were required to engage in contemplative practices during the course, engaging in the daily movements of the larger community, including the contemplative practices, was highly encouraged. For these reasons, the EDE was an ideal case for describing the processes and outcomes of TSE outside of a traditional higher education setting.

Participants

Nine EDE students (7 female, 2 male), two faculty (1 female, 1 male), and two administrators (both female) elected to participate in this study. Students ranged in age from 20 to 76 years old (mean = 46.4, standard deviation = 19.0) while faculty and administrators ranged from 40 to 77 years old (mean = 61.6,

standard deviation = 15.8). Students' origins were diverse for a sample of nine and included Latvia, Germany, Switzerland, Denmark, Brazil, Norway, and the United States. Participant sampling for this study was voluntary and students that consented represented a 75% study enrollment rate (there were 12 total students).

Data Sources

Archival data related to the ecovillage, college, and previous EDEs were collected prior to the course. These data consisted of website documents, enrollment documents, course reports, and online blogs, and were used mainly in support of our selection of the EDE as the case. Document types consisting of lesson plans, handouts, self-assessments, and student evaluation forms were also collected during the course.

Field observations were conducted using overt-participatory methodology which is "the mode of data collection whereby a case study researcher becomes involved in the activities of the case being studied" (Yin, 2014, p. 240). Descriptions of activities (i.e., pedagogies), observations of student/faculty behaviors, and quotes were recorded in a notebook during course activities (See Appendix E for field note protocol/form). Only those interactions for which students agreed to the study participation were documented. The total corpus of field transcriptions consisted of 23 separate days of observations during weeks 1-4 of the course.

At the end of week 4 of the EDE, student participants were given a 103-item survey (see Appendix F) which was a modified combination of the Learning Activities Survey (King, 2009) and the Transformative Learning Survey (Stuckey et al., 2013). The survey was a combination of demographic questions (4 items), scales (92 items), multiple-choice questions (3 items), and open-ended questions (4 items) that

were designed to infer whether a participant had a transformative or emancipatory learning experience, the outcome of that experience, and the processes by which the experience took place. The survey included the theoretical constructs of cognitive, social-emancipatory, and extra-rational learning processes and outcomes described in Chapter 2. Within our combined instrument, transformative learning experience was operationalized as "an experience of significant personal change." Neither the Learning Activities Survey nor the Transformative Learning Survey are fully validated; therefore, the surveys were primarily offered for the open-ended question (i.e., narrative) portions, whereby participants could provide written phenomenological descriptions intended to inform the subsequent semi-structured interviews.

All student, faculty, and administrative study participants were invited to be interviewed using a semi-structured format. Semi-structured interviews allow for "specific questions to be asked of all respondents, but the order of questions and the wording of specific questions and subquestions follow a unique and customized conversational path with each respondent" (Ravitch & Mittenfelner-Carl, 2016, p. 154). Thus, this interview format was chosen because it allowed for customizing based on responses to open-ended survey questions. Student interview questions (22 in total) were mainly aimed at exploring their experiences and outcomes related to pedagogical practices that resulted in transformative or emancipatory learning (see Appendix G). Faculty and administrator interview questions (18 in total) mainly explored the pedagogies, challenges, and reasons for engaging in transformative and emancipatory learning. Each interview took approximately 45 minutes and was audio recorded subsequent to verbal consent. Interviews took place either during week 5 or within 4 days of the completion of the course.

Data Analysis

Data from the study were qualitatively analyzed using a cyclical thematic analysis strategy which began prior to the start of the EDE. This strategy incorporated the use of data organizing, memo writing, and immersive/dialogic engagement (i.e., peer debriefing; Ravitch & Mittenfelner-Carl, 2016). Initial archival data were reviewed in order to vet the goals and research questions of the study by answering the questions "am I likely to observe transformative and emancipatory learning during the EDE?" and "will these observations correlate with a sufficiently large variety of pedagogies such that they are transferrable to higher education?" Field observations were transcribed by the researcher daily and reviewed at regular intervals in peer debriefing sessions (Ravitch & Mittenfelner-Carl, 2016) to discuss observations, organize data, and corroborate emerging themes and categories. Surveys were collected and digitally rendered prior to conducting interviews (i.e., sequential analysis), and used to inform interview subquestions. Semi-structured interviews were initially transcribed using Rev®, a professional, crowd-sourced, fee-based, transcription service. Transcriptions were proofed by the researcher during a pre-coding, immersive reading of the interview data. Field notes, surveys, and interview transcripts were all subsequently loaded into Dedoose for coding.

Data were coded both deductively from theory and inductively from emergent patterns. Deductive coding of the data mirrored our research questions in trying to understand the outcomes and the processes of TSE as described in the broader transformative theory literature. Inductive coding, alternatively, attempted to match patterns across participants that were not already present in the literature, but that might be relevant to the practice of TSE in higher education settings. All coding was iterative and occurred in 4 steps: (1) pre-coding/proofing of the transcripts alongside

the audio files, (2) excerpting according to deductive and inductive parent themes, (3) re-organizing parent themes and assigning child codes, and (4) re-organizing child codes and accumulating evidence. Each iteration included peer debriefing and re-reading of the data. Field observations, surveys, and interview data were all coded together. A coding audit trail was maintained documenting the evolution of the coding schema.

Initial deductive coding themes originated from the research questions which were aimed at describing participants' experiences of transformative and emancipatory outcomes and processes. Thus, first-order coding reflected the outcomes and processes associated with three prevalent strands of transformative learning theory: the social emancipatory, the cognitive, and the extra-rational (Dirkx, 1998; Taylor & Cranton, 2012; Stuckey et al., 2013). Second order deductive categories were developed using axial coding, which "describes a category's properties and dimensions and explores how the categories and sub-categories relate to each other" (Saldaña, 2016, pp. 235-236). As a final form of analysis and internal validity, member checking (i.e., respondent validation) of the final code schema was conducted with members from two of the three nested levels of participation (students and administrators) to help eliminate bias from the analysis (Maxwell, 2013).

Ethical Considerations

Partner approval for this study was granted by Findhorn Foundation College in October 2017. The study protocol received research ethics board (IRB) approval from the research university (see Appendix B). Human participant enrollment letters were mailed to student, faculty, and administrative participants prior to the start and verbal consent (see Appendix D) was obtained during the first day of the course.

Results

Of the nine students, seven confirmed in their surveys that they believed that they had undergone a "significant personal change." The following sections describe both the deductive and inductive themes and the categories (Table 2.1) resulting from our analysis. Salient evidence for each theme/category is also provided. Most student participants did not speak English as their first language; however, to reduce the chance of biasing responses, participants are quoted verbatim regardless of grammar or spelling.

Transformative Outcomes

Self-Awareness/Self-Growth

A common pattern across participant's descriptions of the outcomes of their transformative experiences was that of self-awareness/self-growth. As the multiple strands of transformative learning theory continue to undergo critical reflection, "the overlap between them and the fragile nature of the boundaries between them becomes apparent" (Cranton & Taylor, 2012, p. 8). However, the strand of transformative learning theory which best aligned with the category of self-awareness and self-growth is the developmental strand. The developmental strand, supported by multiple theorists (see Dirkx, 1998; Kegan, 2000; and Taylor & Elias, 2012), elaborates transformative learning within a framework of increasing (i.e., developing) epistemological complexity – knowing our selves and ourselves in relationship with others in ways "more responsive to the crises our species must address with new imagination" (Taylor & Elias, 2012, p. 147). This theme of increasingly complex forms of self-knowledge and self-awareness was commonly described. One participant explained the outcome in contrast to knowledge fulfilment:

Table 2.1. Final Thematic/Coding Schema.

Methodological Strategy	Theme	Category
Deductive	Transformative Outcomes	Self-Awareness/Self-Growth
		Interconnectedness
		Resilience
		Worldview/Paradigm Shift
	Transformative Processes	Relational
		Contextual
		Somatic/Emotional
		Contemplative
	Emancipatory Outcomes	Multi-Perspectivism
		More Courage/Less Fear
		Acting on New Knowledge/Skills
	Emancipatory Processes	Relational
		Contemplative
Inductive	Disenchantment	Realization of Social Complexity
		Conflict Avoidance
		Learning what I Already Know
	Hindrances/Constraints	Global North Bias
		Time Constraints
		Intellectual Content/Skills Focus

> For me, it wasn't the knowledge because the knowledge I [already] had more or less, I did the 10-month course and it was much more than this. It was more about my own inner development and self-growth.

Similarly, in her survey response, the following student described her experience eloquently:

> The experience was about how to communicate and how to listen to myself. For example, the session with [guest faculty] in the first week, where we exercised to listen to body sensations, feelings and separate them from our projections and be conscious about the filter we have (assumptions, past

> experiences…), that gave me insights about how to get to know myself better in terms of communication and rely on me.

These types of developmental outcomes are essential components of TSE, where knowledge about our own habits, conditions, behaviors, and patterns in relationships with other human and non-human beings is central to TSE (Lange, 2018; O'Neil, 2018).

Interconnectedness

A sense of interconnectedness with other humans, as well as with non-humans (sometimes referred to as "nature connection"), is tantamount to sustainable transitions (Sipos et al., 2008, Nolet, 2016). In his own words, Selby describes the ultimate goal as "radical interconnectedness", signaling a divergence from traditional conceptualizations of human-human and human-nonhuman relations, toward a level where "entities are not primary, solid, or separate" and where "the relationship becomes primary, and the entity is itself a secondary manifestation" (2002, p. 82)

The importance of this shift was echoed by a course instructor when he described humanity's dilemma in his own words:

> Well, it's getting people not just into their body, but into the body of nature, and I think we're going [to need] to actually turn things around in the predicament that we're in, in that we actually have to actually sense and feel the natural worlds around us.

As mentioned earlier, this shift is relevant not only to human relationships with non-humans, but also to human-human relationships. One student remarked:

> now I think that there's something we have to learn, or something we have to approach or start with in the social relationships and not just do them… so I will be more observing and more trying to bring in that stuff so I have to be more aware of what's going on between humans in general.

Resilience

Similarly, resilience emerged as a salient outcome of student's transformative experiences. This is a particularly useful skill in the context of sustainability, where failure is common, and the challenges are immense. Cultivating skills and ways of being in the world that balance inner and outer wellness, compassion for others and self, and a sense of deep time are essential in sustainability and sustainability education (De Angelis, 2018). One student in describing his growing resilience claimed:

> I know there will be times in future when each of us, someday is just tired and no energy and that was one of the moments I wanted to save in my brain. … You have a bad moment in the future and then I want to remember that moment that was a place of energy.

Another student framed her outcome around the concept of persistence and dedication to a project:

> So, if for instance, if I'm working with a project, I used to leave this project as soon as I find out that this project was not that perfect that I thought it was. So actually, you know, I think now I would think a lot about leaving something, I think I need to stay a little bit longer and look more into the beauty of the things in spite of the shadows and all of this. So I think this will give more resilience sometimes in that sense.

Worldview/Paradigm Shift

Finally, many students underwent a transformation resulting in a shift in worldview. This is a well-documented outcome and is consistent with Mezirow's descriptions of individualistic perspective shifts (1978). One notable description of this kind of shift was described by a female student who explained it as a kind of awakening:

> One of the biggest things is the social aspect of everything opened up to me and I was always like, not looking at it because it's like, eh, we just live and it's just, we just do it, but it doesn't work like this and it's like a huge world that opened up.

This kind of perspective shift is an important step toward realizing that the sustainability issues facing humanity are more than just material issues to be solved with technocratic approaches. They are also nested within/entangled with human socio-political structures and dynamics. This underscores the importance of, as one student stated, being "invited and challenged to open up to others and really examine my values, beliefs, and behaviors."

Transformative Processes

Processes of transformative learning have been well described over the last several decades, leading to widely varied pedagogical strategies/approaches in a multitude of educational settings. Some scholars have attempted to codify the processes (Sipos et al., 2008; Kasworm & Bowles, 2012; Chapter 2), leading to multiple process domains that can be more or less applicable to the varied settings of transformative learning (including TSE). Many of these processes were observed during EDE.

Relational

For example, relational (i.e., participatory, and community-based) learning was present in many student descriptions of their transformative processes. One student explained in her survey: "most influential was interacting with classmates/the group because I discovered the most about myself *and* [emphasis added] the other in that" and further, "the facilitators support and challenges were helpful, but not the learning itself."

The widely varied ages of students in the EDE seemed to help one student who described her process using her own terminology:

> Here, there're a lot of things that I call collateral learning. A lot of collateral learning, like being in contact with intergenerational people, that's different from being in contact with your kids or grandchildren. It's different because you can more easily observe how you behave and how the others also behave. And it has helped me understanding the issues…"

In addition to generational differences, student learning was also catalyzed by needing to process relational interactions with persons having widely varied perspectives on sustainability. One student remarked:

> here in Findhorn I got very clear that… people are very, very different, and sometimes I talk banana and you will understand this banana as orange and sometimes I talk orange and you take it as a pineapple, and how communication is important and openness too.

This relational approach to transformative learning has begun to take up momentum recently in the context of TSE (Lange, 2018; O'Neil, 2018) and suggests lines of inquiry for revitalizing transformative learning research.

Contextual

Another significant finding regarding students processes of transformation was the importance of context. The importance of context in processes of transformation may often be overlooked in traditional higher education settings because most often higher education settings are *assumed* to be the ideal setting for learning. The rise of community-based learning (Sipos et al., 2008), "real-world" learning (Brundiers & Wiek, 2010), and outdoor learning (Lugg, 2007) movements challenge this assumption. Learning for sustainability in an ecovillage context appears to have benefits as well, as described by one student:

> I think it was very good to be in a ... to be here, or to be in an ecovillage and to have examples and to have the possibility to talk to people and to have that connection, and collection of information and people. I think it makes sense rather than in the city or anywhere in any building, you know? So I think it's important.

The meaning and importance of context in the EDE was further supported by the faculty in explaining "it's the fact that you're living with a bunch of people... it's very intensive, so it's a kind of contextual potential for transformation" and also by an administrator of the EDE who mentioned:

> People with high expectations seem to have a transformative experience where they seem to drop into something broader or deeper than content. Something around that shifts.... People who don't understand the setting of the course, and think they're walking into a straight-up center, and then when they come in and they start understanding the place, they seem to drop into a transformative experience when they open up to the setting.

Somatic/Emotional and Contemplative

Finally, somatic/emotional, and contemplative processes within the EDE modules also led to transformative outcomes for students. These processes were often uniquely combined in ritually themed activities that tended to take students beyond their conditioned expectations of learning:

> Because it was real, kind of. Or, yeah, it was not, it wasn't in the classroom and it was outside, it was with nature, everybody, yeah, I mean. The fire and the music and it felt like life and not like learning something.

The following student also described his very emotionally transformative process that took place during a contemplative storytelling ritual:

> [Faculty member] led us in a journey-past-present-future. The whole present EDE group, firepit, [faculty member] and his music and story led me deep in a heightened emotional state. Vulnerability and strength simultaneously. At that time, I felt very emotionally bound to the stories shared. Connection and belonging, understanding.

Emancipatory Outcomes

The concept of "outcomes" in the context of emancipatory learning requires clarification, as it is often used in ways that are not emancipatory. The goal is not to prescribe outcomes, be they knowledge, skills, attitudes, values, or ontological frameworks considered important by "experts," as that would be an instrumental, not emancipatory, approach to education (Wals et al., 2008; Wals & Jickling, 2002). Rather, the goal is a willingness to engage in a co-constructive, action-oriented, discourse about desired potential futures. Emancipatory learning is about shared-meaning making as opposed to meaning-receiving, and a multilogue as opposed to a

monologue. Derived from the work of Freire (2007), it is described as education that challenges power structures (both inside and outside the classroom) through a praxis of dialogue and action (2007). Emancipatory learning also seeks to transgress boundaries of race, sex, and class through pedagogies of participation and shared meaning-making (hooks, 1994). Some scholars distinguish between learning for empowerment and emancipatory learning as leading to either personal or social change respectively (Inglis, 1997). Here, I combine them to mean the same concept, emancipatory learning, where, for the purpose of this study, self-empowerment is viewed as a common precursor to action for social change.

Multi-Perspectivism

Many students had experiences leading to outcomes that aligned with this conceptualization of emancipatory learning. One common theme was that of greater openness to differing or even oppositional viewpoints, which I categorized as multi-perspectivism. In this category, students begin to realize that their worldview is not the only worldview, and that empathy and consideration are required to understand oppositional stances. This was very clearly stated by one particular student who shared: "I think one thing that I could see here very clear is how people have different mindsets and different perspectives and you know, is very different…. I thought that everyone had the same mindset as myself."

Another student stated her insight clearly in the context of sustainability:

> I believe it will help me in my sustainability work because I now am confident, or more confident, about my ability to be "in another's shoes" or to walk their path. I believe we need this ability to successfully work with issues of sustainability at whatever level or facet that we choose.

More Courage/Less Fear

Another pattern that was common across participants' emancipatory outcomes was that of courage building. A bold willingness to act and become entangled in messy social and political systems is a prerequisite for social change. Therefore, emancipatory pedagogies are often meant to take us to our edges of discomfort. This was evident for one student who faced his fears of being judged by his classmates:

> I think also one of my biggest things was fear of judgment and criticism. …But through acceptance and belonging for a community, I think I can go through those skills and level up, gain more confidence through that.

Another student had a similarly powerful emancipatory experience during another ritual activity where she surprised herself by using her singing voice as a form of expression. When asked how the experience would change how she approached her work, she responded:

> I think I might be much more light, and I'm always trying to bring fun to my classes. I try hard to do that, because humor I think can be flashpoints people remember because there was a humorous event. But I think it's going to bring more play…. I feel like I can do anything. I sang! In public!

Acting on New Knowledge/Skills

Finally, acting on or with new knowledge and skills was a pattern across participants with regard to emancipatory learning. One student explained "I feel like there's a lot of information and if I need it, I can always go there." Another student who was starting a business back home described: "I would love to bring this knowledge back to Latvia together with environmental education. Through this event

[his emancipatory learning experience] and EDE I gather motivation and strength to continue being a pioneer!" These, and other examples explaining a capacity or willingness to use new skills were further elucidated by the administrator who explained:

> The EDE program is a platform to support students, and I think this is of many EDEs, is a platform to support students to test their skill level and evaluate where they need to skill up, especially for those people who want to be consultants of sustainability or want to be educators in sustainability or build communities. It's almost like a self audit on what they know, what they don't know, what their fears are, [and] fears aren't.

Emancipatory Processes

Relational

Surprisingly, the processes of emancipatory learning were similar to those of transformative learning. Perhaps this could be expected. Different learners have different ways of learning to the same thing, and similar pathways may lead to different outcomes for different students. In our study, relational processes also frequently led to emancipatory outcomes for EDE students. One student felt supported to step beyond his comfort zone through community relationships of trust. He explained:

> One of the things is that I trusted in that environment… I think only in a group you can really trust, you can go that deep and still find it enjoyable, unfortunately. But yeah, it was nice. I think I felt like in a community.

At other times, it was challenging relationships and power struggles that led to emancipatory learning for students. After being challenged in class by another student about her perspective, one student reflected on the anger she felt:

> It was painful… but I somehow connected to the [colonial history of my country], and [the colonizers] was telling the indigenous people that what they were doing was everything wrong. And then they were trying them to accept their god. You know, like their church was very like, no, you have believe in this god. Those other gods, those other things that you do, they're all wrong. So I could really feel this imperialism… somehow.

A faculty member also mirrored this tendency for relational pedagogies to elicit emancipatory outcomes. In her interview she explained the importance in the following way:

> I'm not speaking up for EDE in any way, really, in this moment, but there's a part that's like it kind of almost doesn't matter what's delivered in the room, it's more about… the interweaving of people, and creating the space for them to have the conversation. So all the dyads and triads and mixing of group and opportunity for talking with other people. …that's the ingredients, and then it's kind of like, the transformation is like, I'm going to go forwards to my, where I came from, and then that's where they say, okay, did I get all these tools, did I get enough of that exchange with those other people so that I do then feel like yeah, I've got the power to actually go do something.

Contemplative

Contemplative processes were also important to emancipatory learning outcomes. When asked to explain how he was able to gain courage through the EDE, one student explained:

> Contemplative experiences, they help me in general to be more present. Less in mind, more present and that for me goes together with deep listening and being present basically. And the more I can do that, the more I can interact with the world on another level.

Freire (2007) described his own "problem-posing" education as involving listening, dialogue, and action. Thus, the combination of the relational and the contemplative are potent ways to cultivate emancipatory outcomes for students of TSE. One student described the process through a contemplative ritual process where she clarified the importance of community:

> I think everyone that was there brought their own power into that circle, and I think that allowed me to bring my power, to just let go and let whatever wanted to flow come out. And I'm still in awe of what came out, you know, what actually came out… I got permission.

Disenchantment

The emergent theme of disenchantment is not surprising giving the intractable nature of sustainability issues that sustainability education attempts to address. Students often approach sustainability with a myriad of conceptualizations, often gleaned through social, non-formal, and even formal (but outdated) learning spheres. For example, Jickling and Sterling, make light of the fact that sustainability is still used to describe any sort of provocative activity: "sustainable mining,

sustainable tourism, sustainable consumerism, and even sustainable over-fishing" (2017, p. 2).

Realization of Social Complexity

Most often, students approach sustainability with a materialist or anthropocentric worldview that advocates for technocratic solutions. Living in an ecovillage that utilizes modern technology at the community scale (solar, wind, and bio energy; ecological buildings, hybrid carshare, regenerative water treatment, etc.), but realizing that it still faced socio-political challenges related to sustainability seemed to burn away fantasies students might have had prior to arriving. This was a very strong category in the data – the realization of social complexity. One student explained:

> I think it was a pretty romantic imagination place and it's not, so. …I thought it's like, everybody has its role and everything's clear, who's doing what, and who's responsible for what, and if there's a problem, there's a system to solve it, and it's not just all fine, but there's a system how to deal with everything.

Another student of the EDE who had been living in the community for a longer period reflected on her own journey**:**

> I think the idealist in me has met some restrictions, not only in the course, but I think because I've been living here for eight months… but I think that even in the EDE course, after being here for eight months and seeing how a community works, … how slow the development can go, or how much frustrations it can be and how fragmented it is, how difficult it is for people to live together.

The realization that social systems and their material and symbolic structures (i.e., culture) are implicated in sustainability and that they are inherently complex was an important realization in one student's experience of emancipatory learning. She explained in her survey that "Talks to a young woman living here made me realise that life here is also about power, old/young, male/female, living here for a long time/newcomers, etc."

Conflict Avoidance

Equally disenchanting was the tendency of students and faculty to avoid conflict when it could be potentially messy, embarrassing, or controversial. After realizing the complexity of the social aspects of sustainable ecovillage life, one student commented:

> I wish there were more honesty in their failures. I feel like failure is a really powerful learning tool, and if they can acknowledge their failure and speak to it, then they can help the people coming here avoid the traps that they've made. …Let's [also] talk about what doesn't work. There's learning to be had there.

In recognizing the difficulty of navigating contested viewpoints successfully, one participant acknowledged the need, but also the challenge, when she said:

> I think what's needed at the helm of such a ship is somebody who's worked with a lot of conflict resolution stuff and has several methods available that they can do this, and not just patient listening and then, let's get to the next thing, and then the next thing, and the next thing.

Learning What I Already Know

Finally, both administrators and students noted a common form of disenchantment when they realize that the curriculum often focuses on information or skills that they have learned already. In an age of overabundant and readily available information, this is a common theme across most types of education. One administrator commented on the phenomenon in a positive way by saying:

> Those people who come here and get pretty pissed by what isn't here, and what isn't available, and what the curriculum isn't, find out learning what they already know and what they're super passionate about and what they stand for. …I also think it's really important for people in the world to go through processes where they actually can see how much they know and how they can influence and develop.

A student reflected: "what I guess I learned during the course is that I could probably be even more sure about what I'm into and what I'm not." These examples, combined with the tendency toward conflict avoidance, suggest just how hard truly transformative and emancipatory sustainability education is regardless of the setting, and how easy it is to fall into traps of delivering information-based learning that is already easily accessible via other sources, and too often repeated.

Hindrances/Constraints

Global North Bias

As students progressed through the EDE program, they began to meet hindrances and or constraints that they often expressed through their survey and interview data. Once such hindrance, that is also very likely to exist in many North American and European IHLs, is that of the Western bias. Often, the issue is not the

existence of a bias, but rather our blindness to it. As one student explained in her interview:

> The first thing that I would change about the course is to have more of the worldview dimension because I think was very, very poor and for me is one of the most important things. So, and also about the relationship between global north, global south, this kind of different perspectives, you know…. I think this was blank because it's still westerns bringing the perspective.

Another student similarly expressed, "I think instead it was very much about taking the principles of the modern world into a course." These limitations may not have been intentional; however, one faculty member was cognizant of the issue in trying to introduce non-Western perspectives. He mentioned in his interview:

> I don't want to idealize indigenous peoples, but I've learned a lot from indigenous people in that most of them in their true sense, they see the earth as sacred, and they see everything as having a right to exist. They see that there's something to be learned from whatever it is, whether it's a rock or a tree, and they become allies, and so there is this whole relationship with the world, so called Gaia… It's this big classroom, and basically it seems to be free.

Time Constraints

Another issue that was prevalent in the data that is also very common in higher education settings was the time constraint. Here, students themselves often recognized that loyalty to a schedule could compromise embodied learning. A student commented that "the things that I knew something about before I understood better and the things that I haven't had words on early on, I really felt

there was too little time to really get an understanding." A faculty member also realized the dilemma and stated in her interview:

> I think I'm still learning how to do it…. one of the unique challenges is time, because if you stand and do transmissive… you can cover a lot more ground. But is anyone actually learning anything?....So if you want to do something that's more participatory, you've gotta say less is more.

Content Focus

The previous two constraints (Western bias and time) often lead to another hindrance evident in this study – the tendency to over-focus on intellectual content and skills and ignore the body. This is very common in IHLs where content-related outcomes determine educational success. However, this theme was also evident in the EDE, where the conditioning of faculty to deliver and students to receive information may be strongly habituated. Here, many students expressed the desire for less intellectual information and more embodied learning. For example, one student who did not have a transformative or emancipatory learning experience claimed: "I think a lot of these principles that we were given a lip service, but they were not embodied experiences." Another stated the need for "more practical [learning]…to learn more through your body and not through your mind." Finally, a student who struggled with boredom explained: "There's things that I found so boring, or so kind of [pauses], nothing is happening in my body when we do this." These are all coming challenges in any education setting but are more important to resolve in the context of TSE, where holistic learning is deemed essential.

Discussion

The goals of this study were firstly, to determine the extent to which a unique case of sustainability education outside of the traditional IHL could be transformative/emancipatory for learners, and secondly, to provide a rich description of the curriculum such that its elements might be applied to TSE in IHLs. Overall, the EDE course conformed with my conceptualization of TSE in that it led to outcomes that were either transformative or emancipatory for most students and included contemplative practices intended to be restorative and/or integrative (Lange, 2004). While my analysis provided resultant categories of transformative and emancipatory learning that were often linked to multiple elements of the curriculum, here I elaborate on several unique pedagogical elements that were particularly potent catalysts leading to transformative and emancipatory outcomes. Finally, I summarize the potential learning constraints and hindrances to utilizing these types of pedagogies for TSE within IHLs.

Ritual Pedagogies

Rituals as transformative pedagogies are an ancient concept in human culture (Moore, 2001). For millennia, premodern cultures have used rituals as experiential pedagogies for environmental sustainability (Cajete, 2000). Rituals often conform to a common structure that occurs in three phases: separation, transformation, and integration (Lertzman, 2002). Only relatively recently has Western civilization almost ceased to use rituals in the context of education (Moore & Gillette, 1991; Turner, 1995), opting instead for what Moore (2001) refers to as pseudo-rituals. They are described as "pseudo" because they often lack the integration phase, which can

leave learners with a sense of incompleteness. Examples of pseudo-rituals include birthdays, graduations, parties, proms, etc.

In descriptions of what led to their transformative and emancipatory outcomes, many EDE participants referred to activities that could be described as rituals. Indeed, the EDE faculty utilized many of types of rituals including blindfolded nature walks, communal games, and labyrinth building. One notable example, in which the class participated, was a ritual that took place at night, during full moon, in an earth lodge sanctuary. Beginning in silent darkness, participants were invited to quietly center themselves. A fire was lit, and a poetic narrative was recited regarding the genesis and evolution of the cosmos – and humanity's place within it. The facilitator then played various instruments, inviting participants into kind of meditative state. Finally, participants were invited, in turns, to speak about their own life within the context of this larger universal story. The activity was a potent pedagogy because it engaged all: relationality, context, soma/emotions, and contemplation. The contemplative aspect was particularly important in that the activity combined many elements that are considered contemplative practices (Figure 1.2) including: centering, meditation, visualization, music and singing, council, deep listening, and storytelling. This mixture of elements had a profound effect on several students. One noted:

> it also touched some origin feeling you know, like this tribe feeling or it was not just a good experience and fun, it was really like coming down and really connecting but not only with the people but with the place and with life.

Even a student whose survey indicated he did not undergo a transformative experience during the EDE mentioned:

> [It] was a really, really, powerful experience, and that doesn't really conform to any of the models that I would've had in my mind arriving here as a session, like just gathering in an earth lodge and having a talking stick and taking turns sharing whatever you're moved to say and put into the space, whether that's a poem or a song or a thought. It was really powerful.

Such descriptions provide insight into the powerfully transformative potential of the ritual pedagogies that were a hallmark of earlier forms of human education, and which are still a common feature in ecovillage education today.

Pedagogies of Story

Today, the practice of storytelling is as important as it has ever been. Much like rituals, storytelling as pedagogy has been around for millennia and was an essential tool for the sustainability of cultures with strong oral traditions. However, its application to modern sustainability and sustainability education has only more recently begun to draw attention (Haven, 2007; Leinaweaver, 2015; Veland et al., 2018). For example, Veland et al. (2018) argue that we should not underestimate stories, as they essentially "constrain and enable what is thinkable and sayable about the past, present, and future" (p. 42). Further, as Cron (2012) articulates, humans are essentially wired for stories: "we think in stories, and this allows us to envision [and create] a future" (p. 6). Thus, stories and storytelling are incredibly powerful pedagogies that allow us to connect and envision desirable pathways toward sustainable futures.

By combining important processes of transformative and emancipatory learning, storytelling is another potent pedagogy for TSE. Similar to rituals, stories weave together many of the resultant categories of transformative and emancipatory

learning processes found in this study. They are inherently relational, contemplative, contextualized, and emotional (if told well). Storytelling also requires us to be good listeners and require us to be aware of more than the words. Good storytelling is performative – requiring an actor and an audience.

The EDE utilized many storytelling pedagogies during the length of the course. Many were intended to build trust, interpersonal connection, and multi-perspectivism through personal interaction. A noteworthy example of a storytelling pedagogy used during the 4th week of the course was an exercise called "council of beings." With elements similar to the earth lodge ritual, this activity began with a silent nature walk where students were encouraged to find a non-human "ally" and communicate with that ally, allowing it to share its wisdom and communicate its desires for humanity. Afterward, we convened indoors to create masks (representing our ally) that would be worn during a final council gathering. Upon entering the council gathering, each student put on their mask and "became" their ally being. The act of telling story from the perspective of the ally was also a noteworthy aspect of the activity. A student explained how this particular element empowered her:

> It was the mask. That I had something to hide behind, even though everyone knew who was behind the mask. And it's kind of a metaphor. I wear a mask, but I put on a mask to let myself out.

Thus, storytelling can be powerfully transformative and emancipatory pedagogies for TSE. According to Cron (2012), we are made to hear and to tell stories. As she describes, "the brain uses stories to simulate how we might navigate difficult situations in the future" (p. 166). This makes them particularly suitable to sustainability education, where navigating uncertain futures is a central theme.

Pedagogies of Collaboration

Recently, scholars from multiple fields have begun to view sustainability, and therefore sustainability education, through relational ontological frameworks. For example, Morton (2017) argues for a shift from humanity with a sense of "omnipresence, omniscience, and omnipotence" to humankind embedded in the "symbiotic real" (p. 2). He defines the symbiotic real as a mutual "reliance between discrete yet deeply interrelated beings" immersed in a phenomenology of "solidarity" (p. 2). Similarly, both Lange (2018) and O'Neil (2018), draw from Barad's (2007) work with agential realism to articulate ontologies of relationality where human-human and human-non-human interactions are inseparable. Within these, frameworks, agency emerges through a performance of intra-actors – all beingness is collaborative.

The categories resulting from my analysis suggested patterns consistent with the emerging relational frameworks for TSE. Outcomes of connection, emerging through interpersonal processes embedded in a community of actors were frequently described by EDE students. These kinds of outcomes were similarly described by EDE faculty and administrators who recognized that practicing skills for better collaboration is tantamount to TSE.

Collaborative pedagogies were integrated into the course through a group design project that began in week 2 and lasted until the final week. The goal of the project was to design a development project for an ecovillage. The project was unique in that, unlike participatory learning that often occurs in IHLs, groups designed and approved to their own working agreements. For example, at the end of every week, each group held a retrospective, where members held council about what was and wasn't working in the group process and evaluated whether new

agreements were needed, or existing ones required modification. Thus, during the EDE, emphasis was frequently placed on the process of collaboration, as opposed to outcome of collaboration. Another unique element of the course was that collaboration was conceptualized as a more-than-human process. In other words, group participants were encouraged to think of ways in which they could collaborate with non-human beings in their projects, thus embodying relational ontologies beyond anthropocentrism. While the planet may house 7 billion human inhabitants, it's also home to billions of other beings. Pedagogies that focus on the processes rather than only the outcomes of collaboration are needed to develop the skills required for a sustainable and just existence within the symbiotic real.

Where to Now? – Hindrances, Constraints, and Cautionary Tales

Seeking examples of unique cases is a common strategy in applied sustainability, where researchers often articulate pathways of transformation by triangulating theory, practice, and real-world examples (Brundiers et al., 2010; Yin, 2014). Further, this approach acknowledges that IHLs do not have all the answers to society's problems, and that innovative approaches can often be found in contemporary cultural (or extra-cultural) settings. However, when taken out of context, these real-world learnings need to be re-assessed for their relevance, appropriateness, and applicability.

Time constraints and over-emphasis on knowledge and skill-oriented outcomes emerged in my analysis of learners' experiences of the EDE; however, these constraints are even more intense in IHLs, where skill- and knowledge-orientation drives a mostly vocationalized education focused on labor provision (Sterling, 2017; Sterling et al., 2018). Students experiences also tend to be more

fragmented, a result of widely varied coursework and overloaded schedules. True TSE is difficult, if not impossible, to measure and assess. Therefore, such approaches are bound to clash with curricula focused on measurable skill and knowledge outcomes that conform to predetermined standards. Emancipatory pedagogies can be even more challenging because they encourage entanglement with power structures. hooks (1994) suggests we must be prepared for antagonism and be willing to dissent from norms. She also reminds us just how "deep seated is the fear is that any decentering of Western civilization… is really an act of cultural genocide" (p. 32).

Nevertheless, rituals, stories, and collaborative action are powerfully transformative and liberating relational practices. So much so perhaps, that we should be aware that they can be used in other ways too. For example, the proliferation of authoritarian and dystopian narratives is frequently found in modern cinema (Veland et al., 2018) and rituals can also be used to dismantle desirable pathways of change (Collins, 2005). Thus, in implementing innovative pedagogies for sustainability, we should proceed with care. Powerful pedagogies for change should lead us to an increasing diversity of thought. They should avoid standard setting and encourage standard seeking. In doing so, IHLs can contribute to the goal of creating, rather than prescribing, future possibilities, and play their increasingly important role in transitioning humanity toward a just and sustainable future.

Chapter 4 – Teaching from the Chrysalis: An Autoethnographic Guide for Traversing the Paradoxical Terrain of Contemporary Sustainability Education

par·a·dox | \ ˈper-ə-ˌdäks \

Definition: one (such as a person, situation, or action) having seemingly contradictory qualities or phases

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I visualize myself on the front steps, in a lawn chair, with a cooler of cold beverages. I'm welcoming the newly matriculated, energetic, and highly anticipatory sustainability students to our college – and I'm sporting a mischievous grin.

"Welcome!... but I hate to break it to 'ya…"

Many of the students have come from other continents. Others are from down the road. Nonetheless, we are all here because we care, we are inspired to learn, and we want to act. Some of us have modest ambitions of "doing our part." Others have grandiose fantasies of "saving the world." But regardless of our origins or motivations, if we probe deeply and reflect boldly, many of us are destined for a common experience – the frustrating contradictions of sustainability education. This is not a "dead-end" sign; rather, it's a portent of transformation, and a prerequisite for transcending the inevitable paradoxes of contemporary sustainability education in higher education.

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The late Donella Meadows (1999) spoke of twelve leverage points for intervening in systems. As a scholar of systems dynamics, and the founder of the Academy for Systems Change, she understood complex systems, including socio-cultural systems, very well. According to her, the most powerful ways to intervene in

systems were by transforming our dominant perspectives. She argued that, rather than material (e.g., energy, transportation, food) systems, *paradigms* held the most leverage. Historian Yuval Harari agrees and adds that these symbolic entities, what he calls "fictional stories" (Harari, 2015), have become the most powerful forces in the world today. If we assume that these stories are learned, at least in part, during schooling, then we can begin to understand the potential that formal education has in mediating social transformation.

Humanity now faces multiple crises that suggest a social transformation will be essential to our survival. Overwhelming evidence points to a shrinking "safe-space" for both non-human and human inhabitants of this planet (Rockström et al., 2009). Climate change, biodiversity loss, over-population, and other large-scale phenomena all appear to be working against the regenerative and life-sustaining processes that characterized the Holocene. A recognition of the complexity and scale of the problems at hand, the likes of which have never been seen in human history, has reinforced the argument that attempts to address social and environmental issues must include innovative approaches – incorporating novel epistemologies and ontologies (i.e., paradigms; Lange, 2018; O'Brien, 2018; Sterling et al., 2018).

Today, most scholars of sustainability advocate for broad social transformation and the revolutionary (O'Brien et al., 2013) educational frameworks that can support it through expansive learning (Engeström & Sannino, 2010), transformative learning (Macintyre et al., 2018; Lange, 2018), and emancipatory learning (Wals & Jickling, 2002; Chapter 2) approaches. While such learning approaches hold promise for using education as a leverage point for social transformation, there are multiple contradictions, or paradoxes that require illumination along the path. These paradoxes of sustainability education should not be seen as omens of misdirection;

rather, they should be perceived as portents of imminent transformation and regeneration. In developing his theory of transformative learning, Mezirow (1991) elaborated a ten-step process of transformative learning, the first step which was a "disorienting dilemma," potentially resulting from "contradictions between meaning systems" (pp. 168-173). Others have noted the prevalence of grief and despair and periods of disenchantment (Moore, 2005; Sterling, 2001; Eaton et al., 2012, Chapter 3). Thus, frustration and disenchantment are likely precursors to paradigmatic revision, with grief and despair signaling the loss of a formerly concrete paradigm for meaning-making and orientation in the world. Together, however, these stages become the signposts of what Sterling (2001) refers to as third-order learning – learning that is "creative and involves a deep awareness of alternative worldviews and ways of doing things" (p. 15).

The purpose of this chapter is to elucidate paradoxes of contemporary sustainability education in higher education settings in order to bring awareness and change. I've chosen the medium of analytic autoethnography because it follows a cyclical pattern of narrative, analysis, and interpretation (Chang, 2013) in hopes of creating a map for those (both students and teachers) eager to navigate these paradoxes. Thus, I intend to use the power of story and personal experience, mirrored by theoretical analysis and interpretation, to critique a very specific kind of cultural practice (sustainability education) hoping to "create reciprocity in order to compel a response" (Jones et al., 2013, p. 24). Further, I have chosen autoethnography because, like transformative and emancipatory learning approaches, it acknowledges the importance of power, emotions, soma, and spirituality, all of which are relevant to my experiences of sustainability education.

But while autoethnography is often promoted as a method of critiquing paradoxes (Adams, 2010; Adams et al., 2015), I am also aware that the narrative I am putting forth is one of my own white, male, academic privilege. As Galman states: "too often the perspectives and discourses of dominant groups have been privileged in autoethnographic texts, and, as such, great scrutiny must be paid to whose interests are served by the analytic and interpretive frames developed using these narratives" (2011, p. 35). Here, I acknowledge my privilege, and suggest readers account for the narratives of scholars and practitioners from diverse ethnic, racial, class, and gender backgrounds – particularly those whose voices have been marginalized in discourses surrounding education (see Freire, 2007; hooks, 1994).

Modernity in Postmodern Clothing: The Disciplinary Paradox

"Autoethnography is a joke." I laughed nervously when he said it. I was in an initial meeting with a likely advisor. We were exploring potential topics for my research and the likely methods that would inform that research. We were also planning and listing methods courses that I would need to take. As I reflect on those words now, I must confess that at the time – I agreed. I had been trained for years to suppress subjectivity and exalt objective empiricism. I had just completed my master's degree in conservation biology, and my research had followed a quantitative, objective, and reductionist approach typical of the natural sciences. It was all I knew – and my proficiency at it gave me confidence.

But there was something about that approach that left me troubled, and that was the reason I had decided to pursue sustainability in the first place. I was passionate about addressing environmental sustainability challenges, but I knew they would never be addressed by studying natural phenomena removed from their

interactions with humans. How could humans live outside their environment? How could we not be intertwined in systems of complex relationships? I had become wary of the objectivist paradigm of separation and what I had come to view as a managerialist ethos in the natural sciences. The logic went something like: (1) we're separate from nature and it's our job to manage it, (2) we won't have environmental problems if we can manage nature better, and (3) we can manage nature better if we have reliable, accurate, and predictive numerical models. Eventually, my wariness turned to disenchantment, and resulted in my departure from the natural sciences.

Now I can see that my interaction with the positivist, anti-qualitative researcher during my first semester was my own tendency to grasp at familiar, well-worn, and comfortable approaches to research. It was my own conditioning and tendency to remain in familiar territory. It was also my resistance to the grief and despair of my complicity in issues of sustainability. The path from sustainability as a managerialist endeavor to sustainability requiring a paradigm shift, and from "autoethnography is a joke" to autoethnography as a chapter of my dissertation, was no easy journey, and reflects my own personal transformation during graduate school. However, the journey was made possible by attending to the disenchantments of separation, anthropocentrism, and managerialism. It was a curiosity with these contradictions that allowed me to explore my edges, traverse unfamiliar terrain, and explore new methods of inquiry.

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A notable contradiction in contemporary Western sustainability education is that, despite widespread calls for inter- and transdisciplinary learning and research approaches (Brundiers et al., 2010; Wals, 2012; UNESCO, 2018), these approaches are often habitually discouraged in institutions of higher learning that promote

sustainability. Further, the institutions themselves are typically organized along disciplinary boundaries. This is an unfortunate reality, given the pressing nature of sustainability challenges, the realization that sustainability implies a "post-normal revision of ontological, epistemological, and methodological paradigms" (Brundiers et al., 2010, p. 309), and that these paradigmatic shifts are just as relevant to sustainability education as they are to sustainability research and practice.

Indeed, scholars have long understood that sustainability problems are exceptional. Their unofficial designation as "wicked problems" (Churchman, 1967, p. 141) grants them unique status among humanity's challenges. While this moniker helps distinguish them from "normal" problems, it only hints at the complex and intractable features inherent to sustainability challenges. Sustainability challenges are also multitudinous, path-dependent, and resilient. Unsustainable behavior is often stabilized by deeply entrenched social paradigms (Heberlein, 2012); therefore, government institutions are often unable (or unwilling) to address sustainability challenges (Seager et al., 2012). Finally, learning that addresses sustainability challenges must involve combining normally distinct academic domains and methodologies (Kates et al., 2001) despite institutional disciplinary boundaries (Scholz & Marks, 2001; Scholz et al., 2006).

In order to transcend the disciplinary paradox of sustainability education, facilitators and students must be willing to challenge our own ontological, epistemological, and methodological framings. Responding to this challenge, some have begun highlighting the contradictions that are characteristic of the dominant objective empiricist paradigm (Benessia et al., 2012). While I do not advocate for abandoning learning skills and competencies consistent with scientific empiricism, I do encourage a re-balancing of objective learning with skills oriented toward framing

and analyzing sustainability problems, becoming aware of and revising our onto-epistemological paradigms, and envisioning and implementing actions based on the revised paradigms. As Benessia et al. (2012) suggest, we can begin by hybridizing sustainability through the integration of arts, indigenous culture, and even non-human culture (thus addressing the ontology of anthropocentrism). Both students and teachers of sustainability must bravely wander into departments that have never heard of sustainability, building transdisciplinary relationships outside the "bubble." We must then continue by integrating into sustainability curricula diverse elements that focus on, and endorse, a broader array of methodological approaches, including embodied approaches common to the performative arts and narrative forms like autoethnography. Such strategies will require us to be courageous, rebellious, and willing to leave our comfort zones, moving beyond boundaries of comfortable learning.

Stand and Deliver: The Information Paradox

In 2017, I co-facilitated a class titled "Cultivating Inner Sustainability." The class was a pilot, a kind of lived educational experiment, to see if sustainability students would be willing to adopt contemplative practices as ways of knowing their internal realities and helping them make meaning from their time in college. Each week, students were introduced to a different type of contemplative practice including yoga, tai chi, sitting meditation, eating meditation, and others. After learning a particular practice, we would discuss the implications of the practice with regard to sustainability. In 2018, I facilitated a similar course titled "Decolonizing the Unsustainable Mind." That course also introduced students to a suite of practices that would be considered contemplative (Figure 1.2).

After the completion of one of the courses, a student questioned the intent of the class when she said, "I enjoyed the class, and learning the different practices, but I still don't understand what any of it has to do with sustainability!" Her comment surprised me, and I wondered if others had experienced the class in the same vague way that she did. Her question stuck with me for days, causing me to doubt the path I was taking to sustainability and sustainability education. What does *this have to do with sustainability? Perhaps I had it all wrong!*

In trying to reconcile her evaluation, I spent significant time reflecting on the course and other courses in the curriculum. At one time, my reflection focused on a course I was assistant teaching (TA'ing) at the time – another course in sustainability. It was a class with 40 undergraduate students, which met twice per week for 75-minute lectures via projected slides. I recalled the dwindling attendance each week, the texting, and the student in the back of the class playing video games. I recall the yawning, the disconnection, and the alienating format (i.e., no collaboration, no discourse). I recall my longing to connect with someone. We never talk to each other – we *never talk at all! Finally, I thought of the instructor, disseminating information from the podium, one slide after another. Indeed, what does this have to do with sustainability?*

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A second paradox in sustainability education is that the pedagogical norm is information delivery, even though it remains unclear which information is most appropriate, since solutions to sustainability problems are unproven (van der Leeuw et al., 2012; Engeström, 2016). Most attempts to address urgent, large-scale sustainability challenges have failed, leading scholars to ask, "what sustainability problems have we solved over the last decade?" (cited in van der Leeuw et al. 2012, p. 117). If human development is a desirable outcome of effective sustainability

education, there is ample evidence that information-based approaches are inadequate (McKenzie-Mohr, 2000; Frisk & Larson, 2011; O'Neil, 2018). However, this has not deterred educators from continuing the habit of content delivery in sustainability classrooms. Even for those educators aware of the myth of information-driven behavior change, there is a strong incentive to continue old habits – in the competitive "publish or perish" culture of IHLs, who has time to redesign a lecture, a course, or an entire curriculum?

The probable outcomes of information-based approaches to sustainability education are doubly contradictory when by transmitting existing knowledge to students, we very likely succeed in *perpetuating* the status quo, rather than challenging it. Scholars have noted the tendency of IHLs to function as materially and symbolically reproductive entities in society (Sterling, 2001; Frisk & Larson, 2011; Papstephanou, 2014). Others have noted the tendency of educational policymakers to favor a neoliberal thought agenda (Sterling et al., 2018). The combination of these factors may help to partially explain our track record of addressing sustainability challenges. Economist E.F. Schumacher wrote, "The volume of education has increased and continues to increase, yet so do pollution, exhaustion of resources, and the dangers of ecological catastrophe" (1997, p. 208). There seems to be an educational analogue to the technological rebound effect (Bingswanger, 2001; Westley et al., 2011); the more educated we become, the further we find ourselves from sustainability.

In order to successfully transcend the information paradox in sustainability education, we must revise our learning goals and approaches to include more than information transmission. Rebel students and teachers should experiment with the

transformative, emancipatory, and contemplative pedagogies that engage students holistically, explore (and possibly challenge) hegemonic structures, and cultivate empathy, creativity, and greater reflexivity (Chapter 2). Although these pedagogies help develop critically engaged, empowered, and self-aware learners, they are not a replacement for the competence-oriented learning approaches that are foundational in many sustainability education programs. Students also require the basic information and skills needed to perform in future jobs. Therefore, I envision curricula that *hybridize* these different learning paradigms. I believe that when hybridized with traditional approaches, sustainability education that incorporates transformative, emancipatory, and contemplative approaches can be a powerful (albeit challenging) intervention point. The ideal outcome, or measure of success of these teaching approaches, is therefore not only the information transmitted to learners, but also the degree to which they question their patterns of being/relating in the world. The problems we face can't be solved by knowledge alone, they also require new paradigms of meaning-making in the world.

Education and the Practice of Freedom: The Power Paradox

During the second year of my master's thesis, I was invited to TA a class titled Society and Sustainability. I already had a full research-assistantship; nevertheless, I accepted the job for two reasons. First, I had become very interested in sustainability and the position would allow me to explore the topic without the burden of the coursework (while also getting paid). Second, I had been told by my advisor that the experience would help with future PhD applications. The path seemed clear – with one caveat. I would have to facilitate a couple mid-semester classes while the instructor was away at a conference. As someone who struggles

with performance anxiety, the thought of facilitating a class of 75 students terrified me. I spent days preparing for a single lecture on the "tragedy of the commons." The lecture was a torrent of slides with brief pauses for questions. The students were attentive, perhaps engaged by the content, but more likely attuned to my own excitement/fear. I can still recall, during the walk back to my office with a friend, the way my body felt after the lecture – alive, energized, and euphoric. I felt powerful.

I now realize that this experience of power in the classroom was my entry point into teaching. I had been the on the receiving end of transmissive learning approaches for decades, quietly absorbing information in the back of the classroom. The alienating pedagogies I had become conditioned to had created an unconscious habit of remaining quiet and going unnoticed in educational settings. Thus, to finally be seen, heard, and respected by others in the classroom was completely new to me. In hindsight, this moment was a likely inflection point for me, marking my turn towards education as a professional goal.

Reflecting now, however, I see that my desire to be an educator was an unconscious attempt to heal my own silenced voice. Further, I understand that the power I felt during that first lecture was not my own; rather, it was power granted to me by the objects of my transmissive approach. This is the purpose of what Freire (2000) refers to as the "banking model" of education, and what hooks (1994) calls "learning obedience to authority." The students' beliefs in a system of education where knowledge is deposited by a knowledgeable other, from someone in authority, and their willingness to participate and conform to that system, granted their power to me.

Recently, I co-facilitated a class titled Decolonizing the Unsustainable Mind that was intended to engage pedagogies of transformation and emancipation and

deconstruct the power asymmetries that emerge in the 'banking' classroom. During one lecture, my co-facilitator and I were describing a model for decolonization that inspired us, and that we thought would inspire the class. A student who had not spoken up to that point (perhaps conditioned to silence like myself) interrupted, "I don't understand why we're not talking about race here! Why aren't we talking about race!!" There was anger in her voice; I was so rattled that I stumbled to verbalize a response. The next day she quit the class and never returned, leaving me to wonder how I could have responded appropriately, in a way that would address her (and the others'?) needs while empowering her at the same time. I now see that I used my power in that class to impose a model that may not have been appropriate or accommodating of the diverse perspectives present. As it turns out, I'm still learning not to abuse my teacher's authority in the classroom – and stumbling along the way.

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Many scholars now view social transformation toward a sustainable future as impossible without engaging socio-political power structures (Wals & Jickling, 2002; Manuel-Navarrete, 2010; O'Brien et al., 2013). Undesirable planetary-scale trends, ranging from climate change to the sixth-mass extinction, are entangled with dominant paradigms of neo-colonial and neo-liberal politics that also inform contemporary sustainability education. These paradigms manifest in educational policy as learning that is results-oriented, outcome-based, and standards-driven (Jickling, 2017). There are also instrumental forms of transformative learning, where learners are presumably transformed "into" a pre-determined state by a more-knowledgeable and ethically superior other (Chapter 2).

A paradox in sustainability education emerges then, when by didactic conditioning, both teachers and students accept and reinforce learning processes that maintain power structures, unconsciously promoting the status quo. This is

accomplished through power asymmetries existing in traditional lecture-based classrooms, where the instructor teaches and the students are taught, the teacher is the subject and the students are objects, and (related to my own mis-steps above regarding the student's need to discuss race in a course about decolonization) where the teacher chooses the content and the students adapt to it (Freire, 2007).

Although this form of education can still be transformative in the sense that students' worldviews may shift, it is an instrumental form of transformation. Story is the medium of the banking approach – and stories are powerfully transformative (Chapter 3). Yet, while those stories may lead to the transformation of consciousness of learners, it cannot lead to the transformation of the situation within which they are embedded as long as it maintains an ethos of domination. Thus, for education to be a leverage point for social change, it must be education by the learners themselves, or what Freire (2007) refers to as *conscientization* and what hooks (1994) calls "education as the practice of freedom" (207).

In order to accomplish this goal and transcend the power paradox persistent in contemporary sustainability education, educators and students must both be willing to rebel from the norms of neo-liberal, vocational, and instrumental education. As Blenkinsop and Morse (2017) point out in their analysis of Camus's (1951) book *The Rebel*, rebellion is in sharp contrast with revolution. Rebellion is a paradox in itself because, while revolution is only negation, rebellion is both a negation *and* an exaltation at the same time – "it says yes and no simultaneously" (Blenkinsop & Morse, 2017, p. 52). Therefore, in our acts of rebellion, we must also have a vision to strive toward.

Instilling 'education as the practice of freedom' will require students and facilitators to address other paradoxes as well. Rather than reacting to

uncomfortable and disorienting information, emotions, and relational encounters, students and teachers can also use the paradoxical qualities of silence, stillness, and reflection as generators of insight, empowerment, and responsiveness (Eaton et al., 2016). We must also strive to build curricula where transformation and emancipation can interact (Chapter 2). Such approaches nurture emergent and relational learning that can transcend the power asymmetries of banking approaches. As Vare and Scott (2007) describe, a liberating sustainability education involves "a process of making the emergent future ecologically sound and humanly habitable as it emerges, through the continuous responsive learning which is the human species' most characteristic endowment" (p. 3).

The Loss of the Sacred: The Ritual Paradox

Two months prior to starting my PhD in sustainable economics, I attended a 2-week silent Vipassana retreat near Barre, Massachusetts. Although I had been practicing daily meditation for over a decade, this was my first retreat and I was unsure of what to expect. I had read stories about retreats from meditation teachers and heard tales from other practitioners whose experiences had ranged from sublime to distinctly unpleasant. I was feeling the tension between anxiety and excitement about what was coming. I was entering a sacred retreat container – one which held the possibility of my own transformation.

The daily routine of the retreat was intense, beginning with a bell and morning sitting meditation at 5:45 AM and continuing with alternating sitting and walking meditations until 9:00 PM. Meals were also taken in silence during which retreatants were encouraged to engage in mindful eating practice. Being a normally introverted person, I fell into the rhythms of retreat life easily, occasionally sneaking away for an

afternoon nap or walk in the nearby forest. The Massachusetts summer was in full swing and the timing of the retreat was perfect for mindful hikes in the woods.

Overall, the retreat was fairly uneventful, until the 4th day during a morning meditation in the main hall. Words still escape me for what I experienced then – something ineffable. What emerged during that time was a deeply relaxed, yet concentrated state of the mind, absent of any planning, organizing, or problem-solving consciousness. It felt like an expansion of awareness, more inclusive, sensitive, and exposed. I could hear a lawnmower in the distance, smell the scent of freshly cut grass, and hear birds singing nearby. At the risk of sounding cliché, I felt deeply connected to all these things, the mower, the grass, the breeze, and the birds. I sat in this state for many minutes, peaceful and serene. Suddenly, the mind's analyzing habit kicked in and the blissful state collapsed into a more normal and contracted form of consciousness. I tried to recreate the serenity, but it would not return. What had happened, what did I witness, and where had "I" gone? The questions repeated in my mind for months, and the experience was difficult to understand and integrate. After practicing for over a decade, I had never experienced that before.

Reflecting on the experience of deep interconnection, I couldn't help but think of its relevance to sustainability education. A few months later, after entering my PhD program, I began to ask faculty in my department if any had interests in mindfulness, or in the relationship of contemplative practice to sustainability. I came up mostly empty and expanded my search to other departments… and then to other schools. People seemed perplexed by my assertion that contemplative practice could have a profound effect on a person's sense of interconnection with nature, both human and non-human. One professor suggested I switch departments, from

sustainability to social psychology, so that I could approach my questions in a more rigorous and scientific way. Another suggested I refer to the literature relating economics and religion. Their suggestions left me feeling alienated and doubtful – what would a profound phenomenological experience of meditation have to do with serious scholarly inquiry anyway? Perhaps I should stop thinking about it and move on.

This was a period of great confusion, torment, and disenchantment for me. I had just moved my family 1800 miles to go to grad school, and I was already lost. I had no experience, no mentor, or guide to help me integrate my mysterious meditation experience, to help me get back to the profane, everyday things of life. But the experience had transformed me, and I could not go backward. I decided to leave economics and set out on a new scholarly path to understand the relationship between contemplative practice and sustainability. I had been asking the big questions of sustainability for some time – where are we coming from, who are we, and where are we going? I understood that humanity is entering a period of relative instability, where transformation on a large scale was necessary and inevitable. Yet, in all my studying, in all the books, lectures, and other forms of knowledge accumulation, nothing, not one thing, had ever transformed me as much as those few brief expansive moments in a silent meditation hall on a mundane Tuesday morning in Barre, Massachusetts.

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In order to fully understand the ritual paradox of sustainability education, one must first understand Eliade's (1958) notion of the heterogeneity of space, and its relevance to ritual and social transformation. Spatial heterogeneity refers to the presence of both *profane* and *sacred* space in human culture. Profane space is the domain of the usual, structured, daily rhythm of modernity. It is going to work,

coming, home, and doing the dishes – repeat. Profane space lacks both a central axis and a container for the transformative process. It is characterized by the absence of both true ritual and those who can lead it. Alternatively, sacred space emerges through a "tearing of the fabric" of profane space (Moore, 2001, p. 24). It is contained, but not controlled, and within the container conditions are conducive to transformation and regeneration (Moore, 2001). Sacred space also requires a ritual leader, one who can help us navigate the transformative process, and help us to explain and re-integrate upon return to profane space.

Contemporary Western culture is overwhelmingly profane and lacking in sacred space (Turner, 1995; Miller, 2000; Moore, 2001). While we often conceive of and act out sacred endeavors like vacations to the ocean, or mission trips to South America, Turner (1995) claims these tend to be pseudo-rituals, lacking true transformative and regenerative power. Without a proper containment system, or leader to guide us, these experiences rarely generate the necessary 'heat' for transformation to occur. Also, those who embark on these pseudo-rituals always maintain an element of control and predictability in their endeavors which tends to stunt the transformative process. As Moore (2001) explains, "the person who must always be in control and autonomous will not be able to access healing and transformative process" (p. 47).

The absence of sacred space is especially notable in institutions of higher education, where secularism has catalyzed the ascendance of objective empiricism and marginalized (or nearly extirpated) sacred spaces (Miller, 2000; Poplin, 2011). According to Taylor (2007) secularism has been unofficially declared the "hegemonic master narrative" (p. 534). This is ironic, given the monastic origins of Western universities (Poplin, 2011). Yet, secularism is its own ideology, and while attending

to this ideology has given rise to presumably more pluralistic institutions, it has also had consequences.

Sustainability education is inherently normative (Frisk & Larsen, 2011; Wiek et al., 2011; Nolet, 2016); accordingly, it attends to moral and ethical questions that transcend the limits of objective empiricism. Sustainability education is also a visionary or future-oriented (Wiek et al., 2011) discipline that contends with existential questions about human purpose and direction. Thus, it is particularly unfortunate that the rise of secularism in education has paradoxically marginalized the sacred, transformative, and regenerative spaces that can give meaning to the profound questions that are now called to humanity's attention through sustainability education.

An appropriate (albeit challenging) response to this paradox may be for facilitators and students to seek pathways of secular re-sacralization of educational spaces, particularly formal and non-formal approaches to sustainability education. Whole institution examples of this approach already exist in higher education (Sterling et al., 2018) and can be used to guide other, properly contextualized endeavors. Ritual-based pedagogies are powerfully pedagogical tools leading to both transformative and emancipatory outcomes (Chapter 3). Education facilitators (i.e., ritual leaders) willing to rebel against the "secular imperative," and the sustainability students who will inherit the world's mounting ecological and social crises, may find the pathways of transformation and regeneration available within sacred spaces useful on their journey toward a sustainable future.

Conclusion

Despite the prevalence of paradoxes in sustainability education, there persists a deeply embedded rational solutions-oriented consciousness that insists that paradox is a phenomenon to be concluded or solved. However, I believe the above-mentioned paradoxes are not problems to be reconciled by solutions, but rather portents of imminent transformative and regenerative processes that have been characteristic of human evolution for millennia (Moore, 2001) and more recently organized out of learning institutions through secular imperatives. Transcending the paradoxes of discipline, information, power, and ritual will be very challenging and require us to look beyond solutions, embracing the new paradigms that Meadows (1999) referred to when she spoke of powerful leverage points. As we experience the frustration and disenchantment that are the hallmarks of these paradoxes, we should try to remain vigilant. Hopefully, the narrative, analysis, and interpretation format of this autoethnographic method provides a useful map for those students, facilitators, scholars, and practitioners on their journey toward creating a sustainable and just world for all earth's inhabitants.

Chapter 5 – General Conclusions

In the midst of anachronistic pedagogy resulting from a neoliberal/neocolonial educational ethos, what are the visionary elements of a 4th wave of sustainability education, one that engages novel pedagogies, and integrates the paradoxes of sustainability? In a report on world futures, Raskin (2008) reported that "The shape of the global future rests with the reflexivity of human consciousness – the capacity to think critically about why we think what we do – and then to think and act differently" (p. 469). Similarly, in a report on learning for sustainability, Williams (2004) wrote "This century may well be one of relearning on a grand scale… This learning … needs to be a core part of learning across society, necessitating a metamorphosis of many of our current education and learning constructs" (p. 4). Accordingly, the visionary elements I propose are reflexivity of learners and facilitators mirrored by an institutional reflexivity that questions the purpose of our current education systems.

Sustainability learners and learning facilitators should thus engage with transformative, emancipatory, and contemplative pedagogies that reflexively alter our ways of being and lead to shifts in power within and beyond IHLs. In chapter 2, I conceptualized these approaches, describing a framework for the important ways in which they complement each other. I propose that their interactions can lead to emergent patterns in classrooms where both facilitators and students engage in "learning what is not yet there" (Engeström, 2016). This type of learning is paramount in sustainability education, where the kinds of knowledge and skills required to "solve" sustainability challenges remain unproven.

In Chapter 3, I conducted a case study of course for sustainability education that was set outside the context of traditional Western higher education. Situated in an ecovillage in Scotland, the Ecovillage Design Education course, was unique in that it was free of most (but not all) of the constraints of IHLs that tend to problematize the planning and facilitation of transformative, emancipatory, and contemplative learning. In ecovillage education settings, curriculum designers are free to design pedagogical laboratories for experimentation with sustainability education and its varied learning approaches. In my study, I discovered three important themes for cultivating transformative and emancipatory learning spaces: pedagogies of ritual, pedagogies of story, and pedagogies of collaboration. I provided rich descriptions of these pedagogies in use and offered suggestions for their context-appropriate application to sustainability education within IHLs.

Finally, in Chapter 4, I explored my personal history of sustainability education using the methodological lens of autoethnography, describing the many paradoxes I have faced as both a student and classroom facilitator. Since these paradoxes are likely ubiquitous across IHL sustainability programs, I propose that learners and facilitators accept them as portents of transformation and emancipation and not as "problems to be solved." As we enter phases of disenchantment resulting from frustration and contradiction, we are likely nearing the transformative precipice. If we can recognize this process as it unfolds in real time, we might traverse it with more ease and grace. A way to help with these transitions is to reintroduce sacred space to higher education contexts, thus returning (at least in part) elements of a spiritual curriculum that were intrinsic to the university setting for millennia.

Therefore, this dissertation contributes to the field of sustainability education in three distinct ways. First, it provides a framework that facilitators in the field can

use to design and implement curricula, promoting the development of programs along a pathway from transmissive/instrumental to transformative/emancipatory. Second, it provides explicit examples of pedagogies that can be implemented that have been shown to be both transformative and emancipatory in a non-IHL context. These, pedagogies encourage the use of ritual, story, and collaboration as elements essential to the task of sustainability education. Third, this dissertation provides examples of paradoxes that learners and facilitators are likely to encounter on their journey towards (or within) transformative and emancipatory sustainability education, suggesting that they are omens of progress.

Evoking systemic changes in sustainability education on an institutional scale will require dissent, patience, perseverance, and courage. Yet, the global crises facing humanity require nothing less of us if learning-based change on a societal level is required. As Wals et al. (2017) state in their introduction to "Envisioning Futures for Environmental and Sustainability Education," we are being called to answer new kinds of questions regarding education. These include:

> Do the encounters educator create and the learning spaces they design or utilize allow for students and the structure of which they are part of to become more sustainable in the first place? Does the learning environment invite people to reflect on values?... and to take action when necessary? (Wals et al., 2017, p. 27)

Implementing "inside-out" pedagogies can hopefully inspire the vision of a future worth striving for and help educators and learners to answer these essential questions.

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APPENDIX A

PREVIOUSLY PUBLISHED MATERIAL AND CO-AUTHOR PERMISSION

- Chapter 2 is in-press in the peer-review Journal of Sustainability Education.
- Chapter 3 is in preparation for submission to the peer-reviewed journal Sustainability.
- Chapter 4 is in preparation for submission to the peer-reviewed Journal of Transformative Education.
- All co-authors have granted their permission for the use of this material in this dissertation.

APPENDIX B

INSTITUTIONAL REVIEW BOARD (IRB) APPROVAL FORMS

ASU Knowledge Enterprise Development

EXEMPTION GRANTED

Eileen Merritt
Division of Teacher Preparation - West Campus
602/543-9832
Eileen.Merritt@asu.edu

Dear Eileen Merritt:

On 9/24/2018 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	Eco-Village Design Education Course Case-Study
Investigator:	Eileen Merritt
IRB ID:	STUDY00008875
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	• Consent Form Faculty ver 2.pdf, Category: Consent Form; • Consent Form Admin Ver 2.pdf, Category: Consent Form; • Consent Form Students ver 2.pdf, Category: Consent Form; • InterviewSampleQuestionsforSubmission.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • HRP-503a - Findhorn IRB protocol for submission ver 2.docx, Category: IRB Protocol; • Demographic Survey - Admin and Faculty ver 2.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • Student survey submitted ver 2.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • Enrollment Letter ver 2.pdf, Category: Recruitment Materials;

The IRB determined that the protocol is considered exempt pursuant to Federal Regulations 45CFR46 (2) Tests, surveys, interviews, or observation on 9/24/2018.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

IRB Administrator

cc: Jason Papenfuss
Jason Papenfuss

ASU Knowledge Enterprise Development

EXEMPTION GRANTED

David Manuel-Navarrete
Sustainability, School of
480/727-9235
davidmn@asu.edu

Dear David Manuel-Navarrete:

On 2/8/2018 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	Autoethnographic Study of Facilitating a Class: SOS 591 Decolonization
Investigator:	David Manuel-Navarrete
IRB ID:	STUDY00007682
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	• HRP-503a-TEMPLATE_PROTOCOL_SocialBehavioralV02-10-15 resubmittedx2.docx, Category: IRB Protocol;

The IRB determined that the protocol is considered exempt pursuant to Federal Regulations 45CFR46 (1) Educational settings, (2) Tests, surveys, interviews, or observation on 2/8/2018.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

IRB Administrator

cc: Jason Papenfuss

David Manuel-Navarrete
Jason Papenfuss

APPENDIX C

CASE STUDY ENROLLMENT LETTER

Dear [student, faculty, or administrator] of the 2018 Eco-village Design Education Course:

My name is Jason Papenfuss and I am a 4th-year PhD student in the School of Sustainability at Arizona State University working under the supervision of Dr. Eileen Merritt. I am contacting you because I intend to conduct a mixed-methods research study (both quantitative surveys and qualitative interviews) at Findhorn's Eco-village Design Education (EDE) course this fall. My research interest is in studying novel approaches to sustainability education like those offered in Findhorn College's EDE. Specifically, I am interested in learning approaches that lead to transformative outcomes for students, and whether such approaches can be introduced and integrated into college-level sustainability education in North America. I am also interested in the ways that innovative approaches empower students to become agents of positive and ethical change.

This fall while also participating in the EDE (October 6 – November 9), I will be making observations, and conducting and interviews for my research. I am contacting you because of your involvement with the course as a [student, faculty member, administrator], and to ask if you will consider participating in this research. Participation will require completing a 30-minute survey (students only) and a 1-hour interview (approximate time, to be completed on a separate day) near the end of the course. Your participation in the study is completely voluntary and is not a requirement of the EDE course. If you are willing to participate or would like to learn more about this research, please contact me by email at jason.papenfuss@asu.edu or by phone at 612-235-1579. I can then provide you with more information. I will also be participating in the Eco-village Design Education course and would be happy to answer questions about the research during course free-time.

I will be sending out this invitation again later during the course as a reminder that you are invited to participate. This study, including the survey and the interview protocol, has been reviewed and approved by Arizona State University's Institutional Review Board (IRB). The purpose of the IRB is to ensure respect for persons, beneficence, and justice in research.

We are extremely grateful for your time and willingness to contribute to the success of this study.

Sincerely,

Jason Papenfuss

Dr. Eileen Merritt
eileen.merritt@asu.edu
001 (434) 806-9664

Jason Papenfuss
jason.papenfuss@asu.edu
001 (612) 235-1579

APPENDIX D

CASE STUDY CONSENT FORMS

STUDENT CONSENT FORM

School of Sustainability
Arizona State University

Transformative Learning for Sustainability – Consent Form

We (Prof. Eileen Merritt and Jason Papenfuss) are conducting a study of your experiences in this class (Ecovillage Design Education). The purpose of the study is to improve the teaching methods used in sustainability education. We are also interested in how different teaching methods affect learning for sustainability.

I am requesting your verbal consent to participate in the study, which involves completing this survey and being interviewed. You must be 18 years or older to participate. Your participation is voluntary. You may choose not to participate, stop the survey or interview, or withdraw from the study at any time. The survey will take approximately 30 minutes to complete. After taking the survey, I will contact you to schedule an interview prior to your departure from Findhorn. The interview will take approximately 60-75 minutes. We are also asking your permission to audio record the interview.

There are no foreseeable risks to your participation. I will use an anonymous subject ID# to connect survey responses with interview responses. Additionally, all data including interviews, recordings, transcriptions, and demographics will be kept secure and confidential. Your interview responses may be quoted in reports, presentations, or publications; however, your name will never be used. Your identity will remain anonymous.

If you have any questions concerning this research study, then please contact me, Jason Papenfuss (jason.papenfuss@asu.edu), or my advisor Eileen Merritt (eileen.merritt@asu.edu). If you have any questions about your rights as a subject/participant in this study, or if you feel you have been placed at risk, then you can contact the ASU Office of Research Integrity and Assurance at +1(480) 965-6788. The reference number for our study is STUDY0008875.

Reminder: your name will be kept confidential and will not be used in reports, presentation, etc.

Dr. Eileen Merritt
eileen.merritt@asu.edu
001 (434) 806-9664

Jason Papenfuss
jason.papenfuss@asu.edu
001 (612) 235-1579

Anonymous Subject ID: _____

FACULTY CONSENT FORM

School of Sustainability
Arizona State University

Transformative Learning for Sustainability

We (Prof. Eileen Merritt and Jason Papenfuss) are conducting a case-study of your facilitation of this class (Ecovillage Design Education). The purpose of the study is to improve the teaching methods used in sustainability education in higher ed. We are also interested in how different teaching methods affect learning for sustainability.

I am requesting your verbal consent to participate this study, which involves being interviewed. You must be 18 years or older to participate. Your participation is voluntary. You may choose not to participate, stop the interview, or withdraw from the study at any time. The interview will take approximately 60 minutes. We are also asking your permission to audio record the interview.

There are no foreseeable risks to your participation. I will use an anonymous subject ID# to connect survey responses with interview responses. Additionally, all data including interviews, recordings, transcriptions, and demographics will be kept secure and confidential. Your interview responses may be quoted in reports, presentations, or publications; however, your name will never be used. Your identity will remain anonymous.

If you have any questions concerning this research study, then please contact me, Jason Papenfuss (jason.papenfuss@asu.edu), or my advisor Eileen Merritt (eileen.merritt@asu.edu). If you have any questions about your rights as a subject/participant in this study, or if you feel you have been placed at risk, then you can contact the ASU Office of Research Integrity and Assurance at +1(480) 965-6788. The reference number for our study is STUDY0008875.

Reminder: your name will be kept confidential and will not be used in reports, presentation, etc.

Dr. Eileen Merritt
eileen.merritt@asu.edu
001 (434) 806-9664

Jason Papenfuss
jason.papenfuss@asu.edu
001 (612) 235-1579

Anonymous Subject ID:_____

ADMNISTRATOR CONSENT FORM

School of Sustainability
Arizona State University

Transformative Learning for Sustainability

We (Prof. Eileen Merritt and Jason Papenfuss) are conducting a case-study of your administration of this class (Ecovillage Design Education). The purpose of the study is to improve the teaching methods used in sustainability education. We are also interested in how different teaching methods affect learning for sustainability.

I am requesting your verbal consent to participate this study, which involves being interviewed. You must be 18 years or older to participate. Your participation is voluntary. You may choose not to participate, stop the interview, or withdraw from the study at any time. The interview will take approximately 60 minutes. We are also asking your permission to audio record the interview.

There are no foreseeable risks to your participation. I will use an anonymous subject ID# to connect survey responses with interview responses. Additionally, all data including interviews, recordings, transcriptions, and demographics will be kept secure and confidential. Your interview responses may be quoted in reports, presentations, or publications; however, your name will never be used. Your identity will remain anonymous.

If you have any questions concerning this research study, then please contact me, Jason Papenfuss (jason.papenfuss@asu.edu), or my advisor Eileen Merritt (eileen.merritt@asu.edu). If you have any questions about your rights as a subject/participant in this study, or if you feel you have been placed at risk, then you can contact the ASU Office of Research Integrity and Assurance at +1(480) 965-6788. The reference number for our study is STUDY0008875.

Reminder: your name will be kept confidential and will not be used in reports, presentation, etc.

Dr. Eileen Merritt
eileen.merritt@asu.edu
001 (434) 806-9664

Jason Papenfuss
jason.papenfuss@asu.edu
001 (612) 235-1579

Anonymous Subject ID:_____

APPENDIX E

CASE STUDY FIELD NOTE TEMPLATE

General Info

Date:

Time:

Location:

Recorded:

Initial Observations

Students Absent: none

Faculty Present:

Session Observations

Student information (appearance, mannerisms, etc.):

Dialogue (what do students say to each other? To teachers? To the researcher?):

Specific events (who, what, when, where, how, etc.):

Observer behavior (interactions with participants, reactions, etc.):

Activity information (what were the students and teachers working on? Upload relevant handouts if provided):

1.

Post-Observation Reflection

(Researcher's thoughts about the observation, to be completed within 24 hours of observation):

Speculations on analysis (what are you learning, seeing?):

Some themes during reflection:

Are any problems arising?

Were there any conflicts or ethical dilemmas? How did you handle them?

Random memorable moments

-

APPENDIX F

CASE STUDY SURVEY INSTRUMENT FORMS

Survey Information

We (Prof. Eileen Merritt and Jason Papenfuss) are conducting a study of your experiences in this class (Ecovillage Design Education). The purpose of the study is to improve the teaching methods used in sustainability education. We are also interested in how different teaching methods affect learning for sustainability.

You have been invited to participate in a study, which involves completing this survey. You must be 18 years or older to participate. Your participation is voluntary. You may choose not to participate, stop the survey, or withdraw from the study at any time. The survey will take approximately 30-45 minutes to complete.

If you have any questions concerning this research study, then please contact me, Jason Papenfuss (jason.papenfuss@asu.edu), or my advisor Eileen Merritt (emerrit2@asu.edu).

If you have any questions about your rights as a subject/participant in this study, or if you feel you have been placed at risk, then you can contact the ASU Office of Research Integrity and Assurance at +1(480) 965-6788. The reference number for our study is STUDY0008875.

Student's subject ID# _____

Reminder: your name will be kept confidential and will not be used in reports, presentation, etc.

DEMOGRAPHIC INFORMATION

Q1 What is your gender?

- ○ Male
- ○ Female
- ○ Non-binary/third gender
- ○ Prefer to self-describe _____

Q2 What is your age? _____

Q3 What is your highest level of education?

- ○ High school/GED complete
- ○ Some college/university
- ○ Associate degree or diploma
- ○ Bachelor's degree
- ○ Graduate degree

SURVEY FOLLOW-UP

Q4 Are you willing to participate in a follow-up survey within six months of completion of the Ecovillage Design Education course?

- ○ Yes – you may contact me after the course

  Email address/phone number:

  _____

- ○ No – you may not contact me after the course

Q5 During your time at Findhorn (both inside and outside of class), did you undergo a significant personal change? Examples could include changes to your values, beliefs, goals, dreams, or opinions.

- ○ Yes
- ○ No (if not you may stop the survey)

Q6 If you had multiple personal changes, think of the one that changed you the most. Thinking about this personal change, check any statements that may apply :

- ☐ I had an experience that caused me to question the way I normally act.
- ☐ I had an experience that caused me to question my ideas about social roles (examples of social roles include how an instructor or a student should act).
- ☐ As I questioned my ideas, I realized I no longer agreed with my previous beliefs or role expectations.
- ☐ As I questioned my ideas, I realized I still agreed with my beliefs or role expectations.
- ☐ I realized that other people also questioned their beliefs.
- ☐ I thought about acting in a different way from my usual beliefs and roles.
- ☐ I felt uncomfortable with traditional social expectations.
- ☐ I tried out new roles so that I would become more comfortable or confident in them.
- ☐ I tried to figure out a way to adopt these new ways of acting.
- ☐ I gathered the information I needed to adopt these new ways of acting.

☐ I began to think about the reactions and feedback from my new behaviors.

☐ I took action and adopted these new ways of acting.

☐ I do not identify with any of the statement above.

Q7 Please describe the personal experience. When did it happen? Who was involved? Where did it happen? What happened? Was the experience related to any specific activity (inside or outside of class)?

_____

_____

_____

_____

_____

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_____

Q8 In what ways did this event change you personally? Does the personal change relate to sustainability? If so, how?

_____

_____

_____

_____

_____

_____

_____

_____

_____

Q9 Which of the following influenced or contributed to this change? (check all that apply)

- ☐ A friend's support
- ☐ Facilitator/Instructor's support
- ☐ A challenge from the facilitator/instructor
- ☐ A classmate's support
- ☐ Administrative support
- ☐ A class activity? If so briefly describe: _____

_____

_____

_____

☐ A life event outside of class? If so briefly describe: _____

_____

☐ Other: _____

_____

Q10 If you clicked more than one influence, briefly describe which was the most influential, and why?

_____

_____

_____

Q11 Would you characterize yourself as one who usually reflects over past decisions or past behaviors?

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
○	○	○	○	○

Q12 Would you say that you frequently reflect upon the meaning and application of this course for yourself, personally?

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
○	○	○	○	○

Please read the statements listed below with your specific significant personal change in mind.

Q13 As a result of my personal change:

	Strongly Disagree	Disagree	Agree	Strongly Agree
Something I previously believed about myself or my world no longer held true	○	○	○	○
I am more authentic than I once was	○	○	○	○
I am more open to views of others than I was before	○	○	○	○
I see different sides of a controversial issue	○	○	○	○
When I have a problem now, I see different solutions	○	○	○	○
I feel empowered to act in ways I once never would have imagined	○	○	○	○
I feel more confident acting on my beliefs	○	○	○	○
Over time, I have become better able to articulate my values	○	○	○	○
I have changed the way I learn something new	○	○	○	○
I am okay with uncertainty	○	○	○	○
I have experienced a deep shift in the way I see some things in the world	○	○	○	○
I have greater empathy for others' positions than I used to have	○	○	○	○

Q14 As a result of my personal change:

	Strongly Disagree	Disagree	Agree	Strongly Agree
I have made a deep shift in the way I see myself	○	○	○	○
I have stopped going along with everyone else and have my own sense of who I am	○	○	○	○
I now seek out people who are different from me	○	○	○	○
I question what experts say	○	○	○	○
I realize that I am a different person now than I used to be	○	○	○	○
I am aware that my beliefs are both the same as and different from others' beliefs	○	○	○	○
It would be impossible for me to go back to being the way I once was	○	○	○	○
My beliefs are now more flexible and open to change	○	○	○	○

Before responding to the statements below, please think again about your personal change experience here at Findhorn, but this time think about the processes you go through as you change.

Q15 During the process of my personal changes:

	Strongly Disagree	Disagree	Agree	Strongly Agree
A traumatic event often leads me to question my values	○	○	○	○
An unexpected event leads me to think about who I am and what I believe	○	○	○	○
When I have a new understanding of something, I act on it	○	○	○	○
When I hear a different point of view, I question myself	○	○	○	○
Attending church, synagogue, temple, or other spiritual place is important when I am facing a difficult dilemma in my life	○	○	○	○
Being exposed to a different culture leads me to question my own culture, and act differently	○	○	○	○
It is liberating for me to question the views of those in authority	○	○	○	○
Challenging events lead me to question my beliefs about who I am	○	○	○	○
Creating art during a life-changing experience that helps me to understand myself	○	○	○	○
Encountering a disorienting event leads me to see myself in a different way	○	○	○	○

Q16 During the process of my personal changes:

	Strongly Disagree	Disagree	Agree	Strongly Agree
When I change my point of view, I act on that change	○	○	○	○
I become aware that some people have more advantages in life and others have few	○	○	○	○
I am led to question my own perceptions through art	○	○	○	○
I am the type of person who uses my imagination to deal with difficult circumstances	○	○	○	○
I call upon a higher power to help me get through a difficult situation	○	○	○	○
I react emotionally when my beliefs are challenged	○	○	○	○
My feelings show when I talk about my values	○	○	○	○
When I am making a change, I can see in my imagination how things should be	○	○	○	○
During a social change, I challenge what I see and hear on television, in print and on the Internet	○	○	○	○

Q17 During the process of my personal changes:

	Strongly Disagree	Disagree	Agree	Strongly Agree
To address injustice, I confront those in authority	○	○	○	○
I connect to my experiences through deep emotions or feelings	○	○	○	○
I survive a traumatic event through the support of other people	○	○	○	○
I seriously question my beliefs and actions	○	○	○	○
I question my beliefs and how they are shaped by those in power	○	○	○	○
I engage in spiritual experiences to help me to see things differently	○	○	○	○
Some events shake up my beliefs and values	○	○	○	○
I feel a strong need to be active in giving back to my community	○	○	○	○
I feel free from social expectations as a result of the changes I make	○	○	○	○
I find my life's purpose and direction in my religion or spirituality	○	○	○	○
The best conversations happen when everyone is well informed	○	○	○	○

Q18 During the process of my personal changes:

	Strongly Disagree	Disagree	Agree	Strongly Agree
I move away from the beliefs of my family and culture that are related to gender, race, ethnicity, and sexual orientation	○	○	○	○
I participate in social movements	○	○	○	○
I see the world through images	○	○	○	○
I need support from others when something has unsettled me	○	○	○	○
I need to talk to a supportive friend when I encounter something confusing or troubling	○	○	○	○
When I see unfairness in society, I realize the advantages I have	○	○	○	○
In productive discussions, I value people presenting the evidence for their point of view	○	○	○	○
I question whether equal opportunity is possible	○	○	○	○
I realize that my past experiences shape the decisions I make	○	○	○	○
I practice prayer or meditation to help connect to my inner self	○	○	○	○
I rely on discussion with others when I am going through a difficult experience	○	○	○	○

Q19 During the process of my personal changes:

	Strongly Disagree	Disagree	Agree	Strongly Agree
I talk to others to understand my experiences	○	○	○	○
I try to pull others together to address the needs of people from a different culture or class	○	○	○	○
I use art or music to help me understand myself and my experiences	○	○	○	○
I use metaphors and images when I am working through a dilemma	○	○	○	○
I use poetry or fiction to help me understand myself and my experiences	○	○	○	○
Dreams give me insight into my soul	○	○	○	○
I look for opportunities to act to make the world a better place	○	○	○	○
When I change the way I think, I act differently	○	○	○	○
To make sense of things, I need to question my beliefs and actions	○	○	○	○
Making art changes the way I see the world	○	○	○	○

Q20 During the process of my personal changes:

	Strongly Disagree	Disagree	Agree	Strongly Agree
Making changes in my life is an emotional experience	○	○	○	○
New experiences lead me to understand my past experiences in a different way	○	○	○	○
My learning is not complete without action	○	○	○	○
I understand my own point of view when I test my ideas with others	○	○	○	○
Reflection about others who have less privileges leads me to question my lifestyle	○	○	○	○
Self-reflection leads me to revise some of the assumptions I used to hold	○	○	○	○
Things that I read lead me to question myself	○	○	○	○
When I am confused, I talk with others to get more accurate and complete information	○	○	○	○
When I become immersed in a different experience, I start to question myself	○	○	○	○
When I see unfairness in society, I help others get access to resources	○	○	○	○

Q21 During the process of my personal changes:

	Strongly Disagree	Disagree	Agree	Strongly Agree
I no longer feel constrained by what is socially expected of me	○	○	○	○
When my beliefs and values are shaken up, it is an emotional experience	○	○	○	○
I find that the more knowledgeable people are about an issue, the more successful the communication will be	○	○	○	○
New experiences lead me to think about my beliefs	○	○	○	○
When the opportunity arises, I act to protect the freedom of others	○	○	○	○
Whenever I read or see the news, I think about how groups, classes, or cultures are represented	○	○	○	○
When my beliefs change, my behaviors change	○	○	○	○
Having new experiences leads me to reflect on my past	○	○	○	○
I challenge others to become aware of unfairness among people	○	○	○	○

Q22 Please provide any additional comments regarding this survey here.

_____

_____

_____

_____

_____

APPENDIX G

CASE STUDY SAMPLE INTERVIEW QUESTION FORMS

OVERVIEW: Transformative Learning Case-Study Protocol for Findhorn Subjects

Subject levels: Administrator, faculty, and student (will take survey prior to interview)

1. Invitation: Recruitment letters (invitations) will be sent to all participants (students, faculty, and administration) before the start of the course (late-September).
    a. A copy of the invitation will also be provided at the start of the interviews for faculty and administrators - and both surveys and interviews for students.
    b. A copy of the consent form will be attached to the letter.
    c. Introduce myself and the study by asking them to read the invitation and read and sign the consent form.
    d. Ask if they have any further questions.
    e. Ask for permission to record the interview.
2. Semi-structured interviews
    a. Administrators – these interviews can take place anytime during the course.
        i. Goal/objective – the goal for the administrator interview is to understand the intent of the course, what they hope to achieve, and what elements of the course are particularly novel and effective.
    b. Course facilitators/faculty – these interviews can take place anytime during the course.
        i. Goal/objective – the goal for the faculty interview is to determine why and how they use transformative/emancipatory pedagogies, what elements of the course curriculum create transformative/emancipatory potential, and what the major challenges are to these types of pedagogies.
    c. Students – these interviews should take place near the end of the course, and after the students have taken the survey. This allows for follow-up from the survey questions.
        i. Goal/objective – the goal for the student interviews is to determine if the course is transformative/emancipatory, and how by paying particular attention to the student's prior survey responses and probing along particular mechanisms of transformation (rational, emotional, embodied, or spiritual)
3. Thank subjects and ask permission to follow-up after the course.

The Transformative Learning Interview - Protocol for Administrators (45-60 min)

Hello, thank you for taking the time to talk with me today. I am doing research on teaching methods for sustainability education at the college level. I am interested in the course that Findhorn is offering because it is a unique example of sustainability education in the world today. I'm attempting to describe the course in as much detail while I'm here so that those of us teaching sustainability in North America can learn from this example.

Everything that you tell me is confidential. If I ask you anything that you do not feel comfortable answering, please feel free to tell me that you do not want to answer that question. Do you have any questions for me before we begin?

I would like to ask your permission to record this interview, is that alright with you?

Administrator's research subject ID#:_____

I want to start by asking some general questions about you and your work at Findhorn.

1. Tell me about your role here at Findhorn – what is your job?

2. Can you describe your background? How did you come to Findhorn?

3. Do you have a spiritual or contemplative practice?

Now I want to ask some questions about the Findhorn College and the EDE course.

4. Describe the mission of Findhorn College. Has the mission changed over time? Why? Why not?

5. Can you tell me what transformation means here at Findhorn? Is it important for sustainability education to be transformative? Why or why not?

6. Findhorn's website claims to deliver transformative education. How does that goal relate to the mission?

7. Describe the EDE in your own words. What are the unique features, activities, or methods of the EDE and/or other Findhorn courses that make them transformative?

8. Do you think the EDE is transformative for students?

9. Findhorn's website also claims to empower students and their communities. What does that empowerment mean for students? Why is it important for sustainability education to be empowering?

10. What are the unique features of the EDE and/or other courses here that make them empowering?

11. Can you describe specific teaching methods that you believe lead to empowering students?

12. Is it important for students to engage in some sort of contemplative practice?

Probes:
Do any of the courses use contemplative pedagogies?
Do the EDE students take part in the daily practices of the community?
If so, do you believe these students have a different experience of the EDE?

13. Why does Findhorn offer the EDE specifically? How does this course relate to the Findhorn mission?

14. How has the course evolved or changed over the last few years?

15. What elements of the course set it apart from other similar courses, in higher ed for example?

16. To what extent does the eco-village factor into the EDE experience? How important of a factor is it in the transformative and empowering aspects of the course?

17. What questions do you have for me?

18. re you available for follow-up at a later time?

Email: _____

The Transformative Learning Interview - Protocol for Faculty (45-60 min)

Hello, thank you for taking the time to talk with me today. I am doing research on teaching methods for sustainability education at the college level. I am interested in the course that Findhorn is offering because it is a unique example of sustainability education in the world today. I'm attempting to describe the course in as much detail while I'm here so that those of us teaching sustainability in North America can learn from this example.

Everything that you tell me is confidential. If I ask you anything that you do not feel comfortable answering, please feel free to tell me that you do not want to answer that question. Do you have any questions for me before we begin?

I would like to ask your permission to record this interview, is that alright with you?

Facilitator's research subject ID#: _____

I want to start by asking some general questions about you and your work at Findhorn.

1. Tell me about your role here at Findhorn during the EDE course.

2. Can you describe your background? How did you come to teach at Findhorn?

3. Can you describe any previous experience or training in sustainability education?

4. Do you have a spiritual or contemplative practice?

Now I want to ask some questions about the EDE course.

5. Why do you teach the EDE course? What are your hopes, teaching goals, or objectives?

6. Can you describe the EDE in your own words? What makes it unique, special, or different from other sustainability courses.

   Probes:
   Do you think the course is transformative for students?
   In what ways is it transformative? For all students or just some? Which ones?

7. Describe some of the challenges of transformative learning in your own words. How does it compare to other types of learning environments that you have taught in.

8. Please talk about some of the most significant elements of the course that you believe help to cultivate transformative experiences for students?

9. Describe the benefits of the specific pedagogies that you use that are transformative. What about them makes the learning transformative for students?

10. Do you advocate for contemplative practices for students? Why or why not?

11. What are some of the unique challenges of being a facilitator of transformative learning.

12. Can you talk about the elements of the course that you think lead to student empowerment?

13. Describe the challenges of empowering students of sustainability. What are we empowering them to do? Why is this so challenging?

14. Describe some specific pedagogies that you use that are empowering to learners of sustainability. What about these pedagogies makes them empowering?

15. How important are transformative and empowering pedagogies for sustainability? Why?

16. What would you change about this course? Why?

17. What questions do you have for me?

18. Are you available for follow-up at a later time?

Email: _____

The Transformative Learning Interview - Protocol for Students (60 -75 min)

Hello, thank you for taking the time to talk with me today. I am doing research on methods of teaching sustainability at the college level. I am interested in your experience of learning here at Findhorn during the Eco-village Design Education course. I am particularly interested in your learning experiences that you felt were transformative – meaning that they changed you in a deep way. This could mean that they changed the way you think, behave, or feel. It could also mean that they changed you spiritually. These experiences could have happened both during and outside of "official" class-time.

Everything that you tell me is confidential. If I ask you anything that you do not feel comfortable answering, please feel free to tell me that you do not want to answer that question. Do you have any questions for me before we begin?

I would like to ask your permission to record this interview, is that alright with you?

Student's subject ID#: _____

I want to start by asking some general questions about you and your enrollment in this course.

1. Tell me about yourself. Describe yourself to me.

Probes:
What do you do for a living?
What kinds of projects are you working on?
What are your interests?

2. Can you describe your background?

3. Give me the 5 words that you think describe you best.

Follow-ups:
Tell me a little bit about what these mean to you.
Which of these are the most important to you?

4. How do you think you will use what you've learned here during the EDE? What lessons will you take back with you? How do you think these lessons will affect your life?

Follow-ups:
Where will you work?
What do you hope to achieve with your work?

5. Do you have a contemplative or spiritual practice? Can you describe that to me?

Next, I'm going to ask you some general questions about your experience of the course itself.

6. Why did you choose Findhorn to take this course?

Probes:
What are the underlying reasons for your enrollment?
Why do you do the work you do?
What is your motivation or reason for interest in sustainability?

7. What did you hope to learn during the Eco-village Design Education course?

8. How did the course compare with your expectations?

Follow-ups:
If it did not meet expectations, why?
If it met expectations, what could have been better?
If the course exceeded expectations, what was unique, or exceptional?

9. What would you change about the course? Why?

Next, I'm going to ask you some specific questions related to the survey you completed.

10. In the survey, you mentioned that during this course there **was/was not** a time that you underwent a significant personal change…

If NOT,then

11. Can you describe the most significant event that you remember during the EDE course in detail?

Probes:
Where did the event take place?
Who was present?
What was said or done?
Did you reflect on this event afterward?

12. Do you think that the course has inspired you to make changes in your life after you leave? If so, what kinds of changes?

13. Do you feel more empowered to act after you leave the course? If so, what kinds of actions will you take? Also, what led to this empowerment?

Probes:
Was is a specific event?
Who was present?
What was said or done?
Did you reflect on this event afterward?

If YES, then

14. Can you describe the change that you underwent in as much detail as possible?

Probes:
Was is a specific event? Who was present?
What was said or done?
Did the change come immediately, or with reflection/integration?

15. What specifically was it about the circumstances of the course that led to the change?

Probes:
Was it a specific activity?
Was it a specific teacher?
Was it the environment?

16. How will this change affect your work after the class?

17. As a result of this change, or the course in general, do you feel more empowered to take action in the world? If so, what has led to this feeling of empowerment?

Probes:
Was is a specific event?
Who was present?
What was said or done?
Did you reflect on this event afterward?

18. Describe your experience of living with the Findhorn community.

Probes:
Did living at Findhorn lead to your sense of change or empowerment?

19. What was the single most important thing that happened while you were at Findhorn?

20. Did you partake in the daily contemplative practices offered at Findhorn? Why/why not?

Probes:
Do you feel that the practices led to any changes you went through while in the EDE?
Did they help you to navigate difficulty, confusion, or grief?
Did they help you to integrate the changes?

21. What questions do you have for me?

22. Are you available for follow-up at a later time?

Email: _____

APPENDIX H

CASE STUDY SAMPLE CODING THEMES

Round 1 (Preliminary) Parent Coding Themes

Deductive Codes

1. Transformative outcomes
2. Transformative pedagogy/process
3. Emancipatory outcomes
4. Emancipatory pedagogy/process
5. Personal description – answers 'for whom' question
6. Contemplation
7. Emergent Learning

Inductive Codes

1. Storytelling
2. Disenchantment

Round 2 Coding Themes (Re-Organizing, Parent, and Some Child Codes)

Deductive Codes

1. Transformative outcomes
    a. Multi-perspectivism
    b. Self-knowledge
    c. Interconnection
2. Transformative pedagogy/process
    a. Relational
    b. Somatic/Experiential
3. Emancipatory outcomes
    a. Less fear
    b. Self-empowerment
4. Emancipatory pedagogy/process
    a. Experiential learning
    b. Skills attainment
5. Personal description – answers 'for whom' question
6. Contemplation
7. Emergent Learning

Inductive Codes

1. Disenchantment
    a. Disenchantment as transformative process
2. Challenges to transformative learning
3. Challenges emancipatory learning

Round 3 Coding Themes (Re-organizing, Parent, and Child Codes)

Deductive Codes

1. Transformative outcomes
    a. Self-awareness/growth
    b. Connectedness
    c. Resilience
    d. Worldview/paradigm shift
2. Transformative processes
    a. Relational
    b. Contextual
    c. Somatic/Emotional
    d. Contemplative
3. Emancipatory outcomes
    a. Multi-perspectivism
    b. More courage/less fear
    c. Ability to act with new knowledge/skills
4. Emancipatory Processes
    a. Experiential
    b. Relational (power struggles, trust, encouragement, empathy, cultural awareness)
    c. Contemplative

Inductive Codes

1. Disenchantment
    a. Realization of social complexity
    b. Conflict avoidance

    c. Learning what I already know

2. Hindrances/constraints to TL and EL
    a. Western bias
    b. Time constraints
    c. Intellectual content focus