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## **Abstract**

This study used action research methodology to examine the development of sustainability leadership in a graduate leadership course. The research investigated the impact of this leadership course, which was designed using transformative learning theory with attention to integrating thematic content, multiple and non-dominant perspectives, a participatory process, and a contextual place-based approach. Grounded theory was used to explore if and how students' understanding of sustainability leadership changed, and the pedagogical strategies that were most influential to their learning. Results revealed that students came to understand sustainability leadership as: the facilitation of a shared process, a process of emergence, and a way of being. Key pedagogical strategies that stood out as being most influential to students' learning of sustainability leadership including: creating a sense of community, learning from peers, and case-in-point experiential learning. These results point to key pedagogical elements that may support the development of sustainability leadership in higher education courses.

## **Keywords**

sustainability leadership development, sustainability pedagogy, pedagogical strategies, experiential learning, transformational learning

## **Cover Page Footnote**

This article is dedicated to the memory of the buzz ringleader, Nicole Sangsuree Barrett. Her authentic and creative spirit will always be with us. And, special thanks to my research assistant for this project, J.R. Wolf, a dedicated, caring, and exuberant sustainability leader.

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# Learning sustainability leadership: An action research study of a graduate leadership course

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This study used action research methodology to examine the development of sustainability leadership in a graduate leadership course. The research investigated the impact of this leadership course, which was designed using transformative learning theory with attention to integrating thematic content, multiple and non-dominant perspectives, a participatory process, and a contextual place-based approach. Grounded theory was used to explore if and how students' understanding of sustainability leadership changed, and the pedagogical strategies that were most influential to their learning. Results revealed that students came to understand sustainability leadership as: the facilitation of a shared process, a process of emergence, and a way of being. Key pedagogical strategies that stood out as being most influential to students' learning of sustainability leadership including: creating a sense of community, learning from peers, and case-in-point experiential learning. These results point to key pedagogical elements that may support the development of sustainability leadership in higher education courses.

## INTRODUCTION

Higher education can play a key role in preparing leaders to be active citizens who address complex and pressing sustainability challenges. The sustainability movement is a response to devastating ecological and social trends such as climate change, toxic pollution, and vast social inequities. While sometimes referred to simplistically as "greening," sustainability here refers to changing our ways of being and working collaboratively to create regenerative, interconnected, just, and thriving systems and communities. Within higher education, sustainability education is a framework in which learners engage in the tensions created by the interconnectedness of social, ecological, economic, and political issues (Nolet, 2009), and work collaboratively to create solutions to the problems in their own communities (Weissman, 2012). Leadership is a vital ingredient for sustainability work (Parkin, 2010), implying that successful sustainability education will also include elements of leadership education, preparing future sustainability leaders to be effective change makers in their communities (Shriberg & MacDonald, 2013).

Considering the enormity of sustainability challenges, higher education can and should play a significant role in developing sustainability leaders. However, more knowledge is needed about the leadership development process and how leadership identity emerges over time (Harding & Matkin, 2012; Komives, Owen, Longerbean, Mainella, & Osteen, 2005). Additionally, more clarity is needed about what sustainability leadership means and how it can be fostered in higher education in a variety of ways.

This article highlights the results of an action research study that focused on understanding how to teach sustainability leadership in a university course. In studying my own course, I was interested in knowing: 1) How does students' understanding of sustainability leadership and themselves change as a result of taking this course? 2) What pedagogical designs or strategies are most influential to their learning of sustainability leadership? Through an in-depth look at this graduate leadership course, this study helps to illustrate ways in which educators may effectively foster the development of sustainability leadership.

The following provides a review of literature related to sustainability leadership and leadership development, as well as the pedagogical model used in this study. This is followed by an

overview of the methodology and key results of the study, and concludes with a discussion of pedagogical implications for fostering the development of sustainability leaders.

## What is sustainable leadership?

Teaching and learning that fosters sustainability leadership will require an understanding of how this differs from more traditional views of leadership. Sustainability leadership reflects an emerging consciousness of living in ways that account for ecological and social impacts (Ferdig, 2007). Further, sustainability leadership rests on an understanding of the world as complex, interconnected, networked, and relational (Capra, 2002; Komives et al., 2005). Within a postindustrial, postmodern paradigm that is rooted in complexity science, there is more recognition that leadership should reflect reality that is: constantly changing, uncertain and unpredictable, nonlinear, emergent, self-organizing, adaptive, and existing as interconnected webs of relationships (Capra, 2002; Ferdig, 2007; Wheatley, 2006;).

Sustainability leaders address adaptive challenges--often messy, complex social or ecological problems with multiple systems (Daloz Parks, 2005; Heifetz & Laurie, 2001). Addressing complex challenges requires collaborative and relational models of leadership, rather than an individualistic approach (Ferdig, 2007; Komives et al, 2005). This is a significant shift from traditional models of leadership, which often involve looking to the top for an expert leader with vision and direction who can wisely guide followers through organized solutions. This traditional model assumes that there is a correct answer to a problem that can be arrived at with scientific objectivity. As such it does not reflect a complex and interconnected world and can be disempowering and exclusive.

In contrast, sustainability leaders are people from all walks of life who are empowered to work with others to make a sustainable difference in communities (Ferdig, 2007). This inclusive and relational model of leadership calls for an orientation toward process, purposefulness, and collaboration (Komives, Lucas, & McMahon, 1998), focusing on empowering leaders to work together to solve complex sustainability problems and transforming power dynamics to leading with rather than over others (Ferdig, 2007). Sustainability leadership embraces change which heals, regenerates, inspires,

connects, and offers hope. It is a mindful practice of dialogue, engaging collaboratively, and of restructuring an understanding of ourselves and our world (O'Sullivan & Taylor, 2004). In many ways, sustainability leadership requires a shift in both perspectives and practice. The complex sustainability challenges that we face require leaders who can both understand the world from a systems perspective and can enact leadership that is collaborative, inclusive, and empowering (Burns, Vaught, & Bauman, 2015). Teaching and learning that fosters sustainability leadership involves thinking systemically and learning to work collaboratively to create thriving communities.

### Key elements of leadership education

In light of this understanding of sustainability leadership, related literature on leadership education may help illuminate best practices for fostering sustainability leadership through teaching and learning in higher education. In order to best teach and model sustainability leadership, the leadership education itself can embody the values and principles of sustainability leadership. This includes an orientation toward a systems paradigm, as well as a reflective, collaborative, and experiential approach to teaching and learning.

De Guerre and Taylor (2004) specifically address this shift and stress the importance of leadership education that moves away from a modernist worldview, reflecting a postmodern living systems perspective. They offer a systemic socio-ecological approach to leadership education in which: 1) practice is primary and learning is embodied in practice; 2) a systems perspective is essential; 3) process is central; 4) leadership is a collaborative partnership; 5) learning is a process; and 6) knowing is reflexive. Designing leadership education based on these principles would reflect a consciousness that the way we design leadership education and teach it reveals our basic assumptions about the world (De Guerre & Taylor, 2004). This socio-ecological approach to leadership education reflects the new science paradigm of complexity and interrelatedness and as such is well suited to teaching sustainability leadership.

Learning leadership should also be an empowering process that provides opportunities to increase leadership capacity and for learners to help each other discover their leadership identities (Harding & Matkin, 2012). Effective leadership programs focus on doing this by creating learning challenges and by helping learners build self-knowledge, and skills in critical thinking (Allio, 2005). Effective leadership programs also place great emphasis on leadership competence and experience, because people become leaders by practicing leadership (Allio, 2005). Since we learn what we live (Laiken, 2004) developing leaders must be given the chance to experience leadership and to observe and reflect on the lessons learned from the experiences (Kolb, 1984). Heifetz & Laurie (2001) refer to this as "being on the dance floor" of leadership action, and refer to "getting on the balcony" as the opportunity to observe and reflect on what is happening. When learners think deeply about their actions and the implications of their actions, leadership development is advanced (Hughes, Ginnett, & Curphy, 1993). Both experience and reflection are needed to encourage systemic and holistic leadership (Daloz Parks, 2005). Certainly, experiential learning paired with critical self-reflection are key to the development of sustainability leaders, if they are to be effective at assessing and addressing complex challenges.

Additionally, learning collaboratively in cohort learning communities has been found to contribute to strong relationships between learners, greater interdependence, and transformative leadership learning (Donaldson, 2009). Authentic experiential learning opportunities and work in teams also create conditions for learners to explore their personal assumptions about leadership (Daloz Parks, 2005; De Guerre & Taylor, 2004; Donaldson, 2009). Indeed, one study of leadership development programs in higher education found that high quality leadership programs shared common factors including building and sustaining a learning community, and student centered experiential learning (Eich, 2008). Because sustainability leadership requires a collaborative approach and an ability to draw from diverse perspectives, emerging sustainability leaders must have ample opportunities to work collaboratively with others, and to learn from those experiences.

One way that leadership has been taught effectively and experientially in higher education is through "case-in-point" teaching, developed by Ronald Heifetz and colleagues at Harvard University. In case-in-point teaching, what happens in the classroom itself is an opportunity to learn and practice leadership with others (Daloz Parks, 2005). Within case-in-point teaching, the purpose of a leadership course is to practice and understand leadership, and the class is recognized as a complex social system. Everything that happens in the class is part of the leadership learning experience while students are also learning concepts and frameworks that help them interpret and name what is happening. The class becomes a case study in itself, as various issues of leadership arise from within the context of the group. In case-in-point teaching, the instructor allows disequilibrium (confusion, stress, frustration) to help the group consider their unexamined assumptions about leadership and to begin to understand and enact a practice of leadership that is more authentic (Daloz Parks, 2005). Case-in-point teaching allows for experiential and collaborative opportunities for learning leadership in community, which is essential for sustainability leadership.

There are many overlapping aspects of sustainability leadership and leadership education. In teaching sustainability leadership, the leadership education itself may be more effective if it models both the sustainable properties of living systems, and a learning process that is experiential, reflective, and collaborative.

### Pedagogy and sustainability leadership

This study was developed in part to understand how pedagogy can be used to foster sustainability leadership in higher education. Transformational learning is a key element in learning sustainability (Burns, 2009; Sterling, 2002) because it engages learners in a participatory process of re-constructing meaning, and helps learners question and reframe unconscious attitudes and values (Baumgartner, 2001; Sterling 2002). Sustainability leaders face incredible challenges including complex socio-ecological problems such as toxic air and water, climate change, urban slums, oil spills, big dams, and a widening gap between rich and poor (McDonough & Braungart, 2002; Norberg-Hodge & Gorelick, 2006; Ryan & Durning, 1997; Steingraber, 1997; Stibbe, 2009). The global free trade economy underpins these sustainability challenges because it restructures worldviews, values, and ways of living on a fundamental level (Shiva, 2001). For many learners, critically questioning and unpacking the underlying causes and various

aspects of sustainability problems provides an opportunity to re-frame their understanding of the world and to potentially transform their attitudes and ways of being. Transformative education is thus a key strategy for addressing complex sustainability issues because it challenges dominant hegemonic systems, and can be a form of liberation and transformative cultural change (Freire, 1998; hooks, 1994). However in order for transformative change to occur, sustainability teaching and learning must move beyond traditional methods of education in which individuality, intellectual rigor, rationality, and transfer of knowledge are privileged in the educational process (Burns, 2011; Sterling, 2002). Learners must be given the opportunity to examine uncritically assimilated, beliefs, values and perspectives, and to transform habits and act differently in the world (Cranton & Roy, 2003).

In the Burns model of Sustainability Pedagogy (Burns, 2009; Burns, 2011; Burns, 2013), transformational learning is central to sustainability learning. The Burns Model of Sustainability Pedagogy addresses the need for a practical way to teach sustainability and to teach it in a way that is potentially transformational. This model of Sustainability Pedagogy has five dimensions. First, the model emphasizes Content that is thematic, multidisciplinary, and co-created. The content dimension is rooted in systems theory (Capra, 2002; Meadows & Write, 2008) and social constructivism (Ernest 1993; Philips, 2004; Vygotsky, 1978). Second, the design includes Perspectives that are diverse and critically question dominant paradigms and practices. The dimension is grounded in critical theory and critical pedagogy (Freire, 1970; hooks, 1994). Third, the model incorporates a Process that is participatory, experiential, and relational. This dimension relies primarily on experiential learning theory (Dewey, 1938; Kolb, 1984;). Fourth, the model includes a Context that is place-based, with its foundation in place-based learning theory and situated experiential learning theory (Fenwick, 2001; Orr 2004; Sobel, 2004). Fifth, the Burns Model of Sustainability Pedagogy emphasizes an ecological Design for the purpose of transformational learning. (Baumgartner, 2001; Mezirow, 2000). An ecological course Design weaves the other dimensions of the model together with the purpose of creating learning that has the potential to transform learners' attitudes and values, and ultimately to transform unsustainable systems within unsustainable cultures. The intentional and purposeful intertwining of these elements together into a course constitutes its design.

I used this pedagogy explicitly in the design and implementation of the course for this study, with the alignment of best practices of leadership education such as practice, process, collaboration, reflection, and case-in-point teaching. My primary goal was to provide learners with opportunities for transformational learning, in order to support their development as sustainability leaders.

## METHODOLOGY

This study made use of action research methodology in order to examine the development of sustainability leadership in the graduate course *Advanced Leadership for Sustainability*. This course is part of the master's program Leadership for Sustainability Education (LSE) at Portland State University, a large urban public university, well known for its motto "let knowledge serve the city" and its corresponding emphasis on community based learning as well as a strong sustainability focus. The following research questions were posed: 1) How does students' understanding of

sustainability leadership and themselves change as a result of taking this course? 2) What pedagogical designs or strategies are most influential to their learning of sustainability leadership? Institutional Review Board approval was obtained for this research.

Action research has long been used in educational settings to improve practice, as reflective practitioners have sought to improve their own practice and solve problems within local educational settings (Herr & Anderson, 2005). Action research typically takes on complex problems, focuses on specific contexts, and focuses on the capacity to resolve problems in real life situations (Greenwood & Levin, 2007). Considering the complex, contextual nature of teaching sustainability leadership in higher education, and the need to solve the problem of how to effectively do so, action research became a clear choice for design. Having taught this course three times prior to this research, and with the ongoing responsibility to teach this class, I had a vested interest in learning more about how to best teach leadership for sustainability and about the impact of my teaching strategies on students and on our graduate program. I was also cognizant that as both the professor and the researcher, it was important to collect and triangulate data from a variety of sources, and to recognize my own position of influence as the designer and facilitator of this course.

## Course Design and Participants

This course is the initial course of the Leadership for Sustainability Education master's program, which all incoming students are required to take as a cohort each fall. This course is an 11 week course that meets once a week for two and a half hours, with an additional 30 hour community-based learning (CBL) requirement. A number of key themes related to leadership for sustainability are addressed in this course: The meaning of sustainability; approaches to leadership and strategies and skills used by sustainability leaders; whole systems thinking and design; economic systems and justice; the role of eco-spiritual values and Traditional Ecological Knowledge (TEK) in sustainability; ecological identity; and the importance of collaboration, creativity, relationships, listening and reflection. I designed and implemented the course using an ecological design process, paying attention to integrating thematic content, multiple and non-dominant perspectives, a participatory process and a contextual place-based approach (Burns, 2011). See Table 1 for an overview of weekly course themes, guiding questions, and a sample of pedagogical strategies. The assignments for the course were: attendance and participation; weekly small group discussion meetings, a mid-term and final paper on the topic of sustainability leadership; small group teaching presentations on leadership topics; personal reflection assignments including a visual autobiography, a personal care plan, and a pre and post personal leadership reflection; and a large group CBL project. Each class session included "opening circle" which entailed meditative breathing, movement, and community building activities. Other class activities typically included large and small group discussions, activities such as reflective writing, case studies, small group interactive presentations, and time to work on the group CBL project. Each class session ended with a poem and an opportunity to write a note to the professor. Each week had a particular theme that the readings and class activities were centered on (see table 1). Students read a number of articles and books for this course including *Leadership and the new science* (Wheatley, 2006),

and *Original instructions: Indigenous teachings for a sustainable future* (Nelson, 2008). I chose the weekly themes and readings in order to provide students with a variety of approaches to sustainability and leadership including indigenous, scientific, and educational perspectives.

Of major importance to this class is the large group community based learning project, which served as the primary case-in-point learning strategy. This assignment was for the class, as a whole, to address an issue that is rooted in a real need in the community. Usually this assignment is connected to the Learning Gardens Laboratory (LGL), a 4 acre garden-based community education site that is a part of the LSE graduate program. In this particular term, the assignment was for students to collaboratively “create and implement a plan for increasing awareness about and engagement with LGL at Portland State University and within the larger community in a way that is not burdensome to the small and mostly volunteer LGL staff.” While this theme and topic were assigned so as to create some initial structure, it was up to students to determine what the project would actually be, and then to create it. Students were also required to create a final presentation to showcase the project on the final day of class. As a case-in-point learning strategy, this project was designed to be somewhat ambiguous for the group so that they could grapple experientially with issues of organization, leadership, and relationships, while addressing a real need in a community organization. Students spent time each week in class working together on this project and also spent time out of class on the project.

This course had 23 students. 5 were male and 18 were female. 17 students were Caucasian, and six were not. These students identified as Native American (2), African American, Pacific Islander, Asian American, and Latina. There were a variety of ages in the class; students in their 20s, 30s, 40s, and 50s were represented. However, the majority of students, 21, were in their 20s and 30s.

### Data Collection and Analysis

The data collected for this study were qualitative and quantitative but because of the small number of participants and the descriptive nature of this research, only qualitative data is included here. This research is rooted in grounded theory, meaning that results arose from, or were grounded in, the data that was collected (Glaser & Strauss, 1967). Grounded theory generates a theory or analysis of phenomenon that is grounded in the experience and perceptions of the participants (Corbin & Strauss, 1998). Data were collected in a variety of ways including: pre and post reflective writing; pre and post surveys; course assignments; researcher memos and lesson plans; final student evaluations of the course, recordings and transcriptions of class sessions, a teaching methods survey, and a post-class focus group interview. All qualitative data were collected and coded on an ongoing basis, using the constant comparative method of analysis in order to continually review existing data and compare and categorize new data based on the coding of that data (Glaser & Strauss, 1967).

Additionally, a research assistant supported this research. His role was to observe, record, and transcribe class sessions and we discussed the research as it was unfolding, writing researcher memos of our observations and reflections. As such the research assistant served as another perspective on the unfolding and constant comparative analysis of the data. The research assistant

also conducted the focus group interview in order to provide space for students to speak more freely about the course and their own learning, without having the professor in the room.

The results that are presented here are the result of themes that emerged from the coded data. As such specific quotes highlight the themes and are representative of a larger process of open and axial coding. Pseudonyms have been used for all participants in order to protect their confidentiality.

## RESULTS

The key results of this action research study are organized around each research question and highlight: 1) Key changes in students’ understanding of sustainability leadership and themselves and 2) Pedagogical strategies that were most influential to student learning of sustainability leadership.

### How does students’ understanding of sustainability leadership and themselves change as a result of taking this course?

A key element of this course consisted of learning about sustainability leadership, both in theory and practice. Upon entering this course and master’s program most students could articulate what sustainability leadership meant to them. At the beginning of the course, based on their initial personal leadership reflections, students’ definitions of sustainability leadership fell into two main categories: Attitudes and values of sustainability leaders and what sustainability leaders do. Values were important to these students and were often written about as values that they themselves were committed to and espoused. Values that students wrote about included: Commitment to working for the benefit of a diverse community, empathy, compassion, love, harmony, interconnectedness, awareness of self, contemplation, sense of place, justice, and healing. There was also emphasis placed on what sustainability leaders do, and most responses emphasized lifestyle and leadership style. According to their written reflections, students felt that sustainability leaders lead lives that are holistic, balanced, connected to the earth and responsible. These leaders lead by example, are flexible, value learning, and work collaboratively and seek common vision and creative solutions through collective action. One student said that at the beginning of the course, she saw sustainability leaders as “engaging thoughtfully in the work of rejuvenating, restoring, and creating a just and thriving world” (Sophie). Over a third of the students dissected the term in their initial papers, writing about sustainability and leadership as separate terms, noting that they didn’t know exactly what these terms meant together.

At the end of the term, students were encouraged to reflect on their how their understanding of sustainability leadership may have shifted over the course of the term and indeed, every student had a changed understanding of sustainability leadership. This did not mean that they rejected their initial understandings. Instead, for most it was a socially constructed process in which their initial understandings expanded, adjusted, and grew as a result of the relational nature of the course. One student noted: “my ideas about sustainability leadership have been expanded, challenged, propped up and rebuilt” (Sophie). Another described her understanding as having “bloomed and branched out” (Gabby). Avery wrote, “my understanding of sustainability leadership this term has deepened

and broadened to include a more ecological holistic perspective of what a sustainable life, leader or world looks and feels like.”

There were several key ways in which students’ understanding of sustainability leadership expanded. These key themes that emerged included understanding sustainability leadership as: the facilitation of a shared process, a process of emergence, and as a creative long-term process and way of being.

### **The facilitation of a shared process**

In their reflections at the end of this course, students focused on sustainability leadership as the facilitation of a shared process, rather than a role or style. This involved a recognition of the need to let go of control as a leader and to instead facilitate a space for shared leadership and co-creation. Zach noted, “One of the things I’ve learned from the experience of this class is that you can’t come up with a master plan and then expect others to just implement it...My biggest challenge has been learning to let go of a certain amount of control and input, and then learning how to nondestructively reassert my voice...” Prior to this course, Zach explained, he might have used his position and voice to take control and to implement his own vision as a leader. Similarly Everett recognized the importance of a collaborative sustainability leadership process. He wrote, “I have had to let go of my personal desires regarding projects and timelines and embrace the group involvement process.” Caroline wrote, “I have experienced the paradigm shift away from all previous education I have received about what it means to be a leader. This shift allows for the invitation of creativity, chaos, loss of control, and flexibility to the leadership process.”

Empowering others and creating genuine relationships with others was a key element of facilitating this shared process. Jane wrote, “Too often sustainability is reduced to energy use, recycling, numbers and new building projects. However, quantum science and Traditional Ecological Knowledge teach us that everything is based on relationships.” James similarly noted, “It’s about building relationships. It’s about interacting with people but also observing your interactions and your relationships with people.” Julie commented that over the term she came to understand sustainability leaders as having more than just values and qualities, but also “visions, processes, and strong relationships to create solutions...[they] foster relationships and create empowering and inclusive processes.” The importance of this inclusive and empowering process was a key element in Julie’s understanding that sustainability leadership is something that anyone could take on. A focus on letting go of power and control, as well as relationship building and inclusion were key to this theme of learning about sustainability leadership as the facilitation of a shared process.

### **An emergent process**

In shifting to a living systems perspective as a result of learning in this course, students became more aware that effective sustainability leadership can be an emergent co-created process. Students came to see sustainability leadership as an emergent process, moving away from the linear, cause and effect, and goal oriented outcome focus of traditional leadership. In her final paper, Alice commented, “I’ve been learning that it’s okay to deviate from that linear path, that everything is fluid; it’s not always linear.” Similarly, in the focus group Everett said, “I had no clue about linear power models and breaking away from hierarchical situations...whereas now I see sustainability leadership as being the non linear leadership that everyone has...”

Students came to value disorder and chaos as a productive element of an emergent leadership process. Taylor explained the importance of leaders “not providing detailed directions or answers but asking hard questions and encouraging disorder.” Isabelle also noted that an emerging process involves change and flexibility. She said in class discussion, “I’m learning to be open to constant change, allowing there to be constant change, and it’s okay.” Students began to see sustainability leadership as something that is a process and that emerges from the process of working with others to solve problems and create change.

### **A creative long-term process and way of being**

Students also began describing sustainability leadership as a creative and long-term process and used a number of metaphors to describe this new understanding. One student likened sustainability leadership to being on a winding path, with new challenges and perspectives at every turn. Avery noted that she considered sustainability leadership to be a craft like writing poetry or making music that “follows a creative process. Like learning a language, it will take a lifetime.” These new ways of thinking about and describing sustainability leadership reflect the journey of the long-term development process. Like a craft or being on a path, developing sustainability leadership takes patience, endurance, and artistry. The elements of creativity and ambiguity were empowering to students as they considered how to be sustainability leaders over the long term.

In their final reflections, many students described sustainability as a way of being, rather than specific traits or values. Gabby wrote that she understood sustainability leadership as “a shared goal and way of being.” Similarly, Ella wrote, “Sustainability leadership has a foundation of acknowledging traditional knowledge and a dedication to long-term investments that engender change throughout communities. Because this way of being is inclusive, supportive and thoughtful, it can empower and change those affected and in turn ripple out...”

As a result of their experience in this course, students’ understanding of sustainability leadership expanded to an understanding of sustainability leadership as: the facilitation of a shared process, a process of emergence, and as a creative long-term process and way of being. As their understanding of sustainability leadership shifted, their attitudes about themselves as leaders shifted as well.

### **Changes in self-understanding**

As a result of this course, students experienced a change in how they understood themselves or how they saw themselves as leaders. Some students expressed finding their voice, and many gained confidence from getting to know themselves better and accepting themselves as a result of the course. James said, through this course “I got to know myself better. I really took the time. ...I opened up to myself which I think is a particularly difficult thing for me.” Gabby noted, “I feel I’ve gained a better understanding of who I am and I’m able to trust myself more today than I did before.” Caroline said, “I learned multitudes about myself—my strengths, my weaknesses, my habits and how I relate and work with others.” In her final paper Sophie wrote, “I began asking myself more regularly if I knew who I was, how I live, and where I come from. I must know these things in an intimate way if they are to become inextricably intertwined with how I manifest sustainability leadership.”

In addition to getting to know themselves better, some students expressed a newfound confidence and change in themselves.

Zach noted, “I can certainly say that over the course of this term I have experienced a rekindling of fire in my heart. As with any transformation it has been painful...but I’m even more excited for what the future holds.” Similarly, Naomi commented on the journey of the process saying, “I don’t need to have all the wisdom now that I hope to have someday. If I have good intentions, I can lead.”

On the whole, students came to understand themselves as sustainability leaders in new ways as a result of the course. As they expanded their notions of leadership, students also changed the ways that they thought about and referred to themselves. In the process of reflecting on themselves as leaders, several students noted that they felt more comfortable with terms such as “sustainability caretaker” rather than sustainability leader. Hazel noted that she struggled with the term leadership because, “My prior influence has been a stagnant model of hierarchical, power wielding, predominately male leaders. It is an archetype that is strong and does not reflect the type of leading that I find effective.” This desire to change the language they used to describe themselves as leaders reflected the shift in their new understanding of leadership and of themselves. Frequent opportunities for personal reflection and group discussion on these topics were important to this learning process.

### **What pedagogical design or strategies were most influential to students’ learning of sustainability leadership?**

There were a number of pedagogical strategies that stood out to students as being most influential to their learning of sustainability leadership. These themes included: creating a sense of community, learning from peers, and experiential learning.

#### **Creating a sense of community**

Most students commented that the sense of community that was created in this course was instrumental to their learning. For them, the sense of community was created through the ritual of opening circle, by sharing personal stories, through relationships, communication, and active listening. Numerous students commented on the relationships that carried over outside of class time. According to the data, opening circle was a ritual that strongly influenced students’ sense of community. Opening circle typically included mindfulness exercises including breathing and movement, as well as community building activities such as personal check-ins, and other short games. Taylor noted, “The ritual of reflection and stretching, the opening and closing activities were really helpful and provided a foundation for me.” Willow commented that opening circle was a time of “sharing, being present, letting go of stress, relaxing, unwinding, breath and energy, play, being quiet together, balance and equality.” Sofia commented, “Often our work and learning environments expect us to be machines and work at full capacity regardless of personal needs. The opening group exercises helped me to more clearly articulate some of my talents and find new ways to “accomplish the work” of sustainability leadership that doesn’t happen behind a desk.” Julie noted that she at first thought that community-building activities would be included for the first month of the class before getting down to business. She noted, “now after observing your teaching method of beginning each class with community building and personal grounding, I see the value in spending 10-15 minutes getting to know one another better, building relationships, friendships and trust each week.”

This sense of community was also created, students felt,

through a variety of communication---sharing personal stories that were connected to class assignments and through active small group activities and assignments. These activities allowed students to feel connected, safe, and included as they approached learning sustainability leadership.

#### **Learning from peers**

Closely connected, learning from each other was a strong theme that emerged as very important to students’ learning in this course. Students learned from each other in a variety of ways, in large groups, small groups, discussion groups, and pairs, what James referred to as “a mosaic of interaction.” Willow noted, “While the readings have had an enormous impact on my work and learning, it is the sharing and debating about the readings with my cohort members that I consider most valuable and impacting.” Similarly, Isabelle commented, “I learned a lot from my peers about their backgrounds and connections to our reading. I also enjoyed the diversity of the small group project topics and the information I received from everyone’s experiences visiting sustainable leaders and organizations.” Many especially appreciated working together in small groups to design an interactive teaching session on an aspect of sustainability leadership connected to a local sustainability leader or organization. One group created a storytelling session that connected to the theme of traditional ecological knowledge and shared both their own personal stories and stories from Wisdom of the Elders, a local organization whose mission is to share indigenous stories. Another small group conducted a radical mindful listening activity. In the post-class focus group Julie said, “The small group project was really critical...it gave me a sense of hope for the rest of the class because [the shared leadership process] worked in a smaller group setting and it was one of the best small group projects I’ve ever done before. I felt like everyone’s voices were heard...I think the openness of the group project, even though it was scary, was really important to allow my transformation to happen.”

Learning from each other in class and through the creation of small group presentations helped to model the concepts of sustainability leadership as participatory and inclusive, and helped to create a sense of community through personal relationships, shared experience, and experiential learning.

#### **Case-in-point experiential learning: The role of experience, emotions, and reflection**

Experiential learning was also important to students’ learning about sustainability leadership. The large group case-in-point project emerged as by far the most influential pedagogical strategy for student learning about sustainability leadership. This project gave students the opportunity to learn about and practice the ideas of sustainability leadership simultaneously. As one student noted, “We experienced the model by being the model.” Because it was a difficult process to work together in such a large group, to share leadership and to make decisions around a challenging problem, the large group project was an emotional learning process for most. Students described it the experience with the following terms “difficult but beneficial” and “painful and necessary.” There were strong emotional reactions to the group process and to trying to figure out what to do and how to do it together. Jane described the process in her final paper, “We did not realize that much of the project was going to be about the process; the process of building community, listening, reflecting on our own roles as leaders, learning to trust, and our struggles with



how to apply these new concepts to a real world problem. From the start we focused our time on ideas about the final product, thinking in traditional linear terms..."

It took time for the class to understand the experience as a chance to practice shared sustainability leadership, rather than to fall back on what they already knew, or to look to the professor for directions and guidance. Emma noted she observed that others' "resistance to change was intense and emotional." She also noted that she was surprised by people who were resistant to change at first but opened to the experience in the end. One such student described the course as a "wild ride in which he'd been dragged through the mud and lifted up to the heavens." Willow commented, "This leadership style was new to me and caused a shift in my paradigm of the dominant hierarchical leadership pyramid."

Although the large group project created conflict and disequilibrium and was thus emotional and painful at times, Ella noted in her final paper that this kind of conflict can be a springboard for creativity, learning, and provides an opportunity to create community and trust. Caroline described the process as "a flow of often chaotic ideas that may lead to frustration but ultimately brings about order inspires creativity, and leads to clarity on an issue." The sense of turmoil and chaos was frustrating and at times created resistance. However Julie noted in the focus group, "I feel like the turmoil was really critical for me to make transformational learning...I did trust that the turmoil and conflict was bringing me to a place of learning about myself. I was willing to share my emotions with the group and share my vulnerability and felt safe to do that." This sense of working through their discomfort and conflict was perhaps what made the most impact on student learning. In their final papers, most students described their experience in the course as transformational.

Reflection was also key to processing and making meaning of these learning experiences. Gabby commented in her final paper, "Watching our transformational learning unfold over two months was a rocky experience. The project's process taught me about my leadership style, social interaction...shared leadership, and multiple listening styles. Using the "balcony" was very useful because it helped me to reduce extra anxiety...I was able to observe and carefully reflect...before rushing in to give input." James noted, "while standing on the "balcony", I was able to see the self-organization of the cohort around our project...because we were reading theory and engaging with the practices of sustainability leadership simultaneously, having perspective allowed me to observe what concepts are most fundamental to my leadership."

Experiential learning through case-in-point strategy, as well as ample written and verbal reflection on the process, resulted in rich learning about sustainability leadership for this cohort. Community building, learning from each other, and learning experientially all provided a layered learning experience from which to learn about themselves as sustainability leaders.

## DISCUSSION

While this study focuses on one leadership course and not a program, the results were consistent with previous research on the attributes of high quality leadership programs in higher education which include, building and sustaining a learning community, and student centered experiential learning experiences (Eich, 2008). These results also show consistency with research on the common practices of sustainability leadership programs, which include an emphasis on

network-building, peer to peer learning, project-based learning, and experiential learning (Shriberg & MacDonald, 2013). Additionally, as an action research study, this research has highlighted key pedagogical strategies, at the course level, that have been useful for improving this course and may also be useful more broadly for teaching leadership for sustainability. These pedagogical strategies, which were successful in helping students come to new understandings about the meaning of sustainability leadership and themselves as leaders, invite some further discussion about their actual implementation, and the challenges and benefits associated with these pedagogical strategies.

To begin, implementing an experiential learning process, especially a case-in-point learning experience, was a navigation of learning how to offer both disequilibrium and support. While case-in-point experiential learning has been shown to be effective for leadership development (Daloz Parks, 2005), as an educator, it is a process to learn how to most effectively structure case-in-point experiential learning. This study pointed to the importance of creating opportunities for a certain amount of disequilibrium, chaos, and uncertainty, or perhaps a group challenge that can be met and overcome. As Ferdig (2007) notes, periodic disequilibrium can provide the necessary heat that can result in dramatic shifts in behavior and points of view. However, the results of this study also pointed to the need for providing clear structure for experiential learning projects. Initially, I was very hands off during the class time in which students worked on the case-in-point project, as I wanted the group to create their own process (not wanting them to fall back on me as the leader). Feedback from students showed that they felt that they lacked my support at times and would have liked me to be more a part of the group project. This paradox of both providing structure and disequilibrium is what Palmer (1998) refers to as creating a pedagogical space that is both "bounded and open" (p. 27); boundaries create a clear space in which learning can occur, and openness leads to many paths of discovery. Another aspect of this concept of bounded and open is in the framing of the project itself. I chose the project location and general topic (bounded), while leaving the exact project and development up to students (open). It might also be interesting to have students choose the entire project (open) while providing more support or structure to the process (bounded).

I now weave a bit more structure into the case-in-point learning process, such as readings and discussion about how to make decisions and delegate key roles in a large group process. In teaching this course, I now intentionally structure more time at the beginning of the term for personal identity reflection and sharing, and trust building, as these are important elements of effective group work. I am also more intentional and explicit about connecting the themes of our readings, such as the importance of self-organization or the role of chaos, to the case-in-point project and to what the group is experiencing. In the past, I relied more heavily on the group making these connections themselves. As Allio (2005) argues, the role of those charged with developing leaders is to create learning challenges and to provide mentoring. Challenges and disequilibrium can be helpful, but mentoring is also key to helping students navigate learning challenges that may prove to be emotionally and personally difficult. Finding the right balance of challenge and support is elemental to the development of leadership for sustainability.

Another important aspect of implementing effective experiential strategies for the development of leadership for sustainability is the framing of course content. At the end of this

course, some students commented that they would have liked more in-depth discussion of the readings; more focus on content. Because of the interactive and experiential nature of this course, it was always a challenge to have time for everything in our weekly two and a half hour classes. Key concepts from the readings were often discussed in small groups, or through class activities, but students wanted more time to really unpack the concepts. While this is something I recognize and understand, at the same time, I see this desire from students to “focus on content” to be a product of their traditional academic backgrounds. Instead of seeing content as solely concepts or theories from books to be handed down to students, I want students to understand content as a living co-created process, in which theory and practice helped to engender and personalize new understanding. I also want them to understand that the design of the course itself reflects a living systems perspective of the world (De Guerre & Taylor, 2004). Through this research project, I realized that this is a huge shift in students’ epistemology. Therefore, I have learned to be more explicit with students about how the course models a shift in the learning process itself and a change in what is considered “content.” I now articulate my understanding of content to include the work of: building relationships and creating a shared process, finding a deeper understanding of self, and understanding oneself as part of a living emerging system. Learning content in this way is actually difficult and rigorous, as it requires learning from a whole-self perspective, rather than focusing solely on intellectual learning. Sustainability teaching and learning, and sustainability leadership must move beyond traditional education in which rationality and transfer of knowledge are privileged in the learning process (Burns, 2011; Sterling, 2002). Indeed, significant meaningful learning is derived from “emotional, imaginative connection with the self and with the broader social world” (Dirkx, 2001, p. 64). Effective leadership for sustainability will require learning experiences that are authentic, relational, and provide opportunities for learning through experience and intuition. This kind of experience sends a message to students that learning is not limited to an intellectual, rational experience (Subbiondo, 2011).

A final remarkable aspect of implementing effective pedagogical strategies for the development of sustainability leadership was the importance of addressing issues of power and privilege explicitly. As class sessions were recorded and transcribed for this research, my research assistant began to notice early on that the male participants in the class spoke a great deal more than the female participants, despite the fact that there were only 5 men in a class of 23. Once he pointed this out, I asked the class to pay attention to issues of power and privilege in the classroom and to notice how this played out in terms of class discussion, including who was speaking most. I thought that calling attention to this might change the dynamic. However, I did not explicitly note the gender privilege to the class, nor did we explicitly discuss power and privilege, or systems of oppression. Over time, the dynamics of the class did not significantly change. While the course does have a strong element of examining dominant economic and leadership systems, I began to understand the importance of students’ gaining a broader understanding of systems of oppression, and their own privilege and roles in these systems. I also realized the importance of modeling the interruption of oppression when I am aware of it. In order to be effective sustainability leaders, learners need to have the opportunity to explore how their own privilege or oppression is linked to sustainability issues. Understanding how we are embedded in systems of oppression and imprinted with social

patterns (such as racism, sexism, classism and anthropocentrism) is key to understanding society (Merchant, 1992), and key to making change. In subsequent classes, I have added readings, activities, and discussion time that address privilege, systems of oppression, and interrupting oppression more directly. I believe this has significantly altered the tone and awareness of the classes, allowing for more inclusion overall.

## CONCLUSION

This study points to the benefits of using sustainability pedagogy in courses that focus on the development of sustainability leadership, and highlights specific pedagogical strategies and lessons learned from grappling with how to more effectively teach sustainability leadership. As an action research study, the results of this research have helped me to further understand the challenges and opportunities of teaching sustainability, and to further shape this course and our graduate program accordingly. Community building, peer learning, and experiential case-in-point learning with attention to emotions and reflection were key strategies that impacted students’ learning about leadership for sustainability. Through this sustainability learning process, students came to know themselves differently and came to understand sustainability leadership as a shared emergent process and way of being. Attention to the balance between challenge and support, addressing a new understanding of what it means to learn “content”, and addressing issues of power and privilege were additional learning insights from this study.

While sustainability leadership courses are not the norm in higher education, sustainability leadership could also be fostered in other kinds of courses by creating the teaching and learning conditions for collaboration, learning from one another, and engaging in real sustainability projects together. Creating a course design that weaves together thematic co-created content, a variety of perspectives, a collaborative process, and a focus on the local context, can lead to sustainability learning, of which leadership is a key element. Teaching in ways that empower learners to see themselves as collaborative leaders with agency in our world is indeed a worthy goal for educators today.

Thinking back to the last day of class in which students presented their final project, what I remember most is the sense of community, energy, and confidence that these sustainability leaders exuded. Together they created a play, complete with costumes and props, in which every single member of the class participated. This play was a nontraditional way to present their final large group (case-in-point) project, which was the development of a workshop and written materials designed to share the story of the Learning Gardens Lab with the larger community. This project met a real need for this community organization, which in order to grow, needed increased publicity and opportunities for promotion in the local community. In fact, the educational workshop that was created by this class for the Learning Gardens Lab has since become an annual fundraiser and a way to positively promote the organization to the local community.

The students’ tagline for their play, “and the buzz was created!” was skillfully woven throughout the dialogue. Although it had been a very challenging process, the play demonstrated how the class had created a useful project that benefited a community organization. Additionally, the play demonstrated in a very creative way what students had learned about the roles of collaboration, creativity, emergence, and inspiration in sustainability leadership. On the whole,

this research highlights the potential and transformative power of teaching sustainability leadership in a way that embodies sustainability, and in a way that provides learners with experiential opportunities to engage in complex challenges, together.

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**TABLE 1. Class Schedule for Advanced Leadership for Sustainability**

<b>Date- Focus of Class Session</b>	<b>Guiding questions</b>	<b>Pedagogical strategies and assignments (in bold)</b>
Sept 25 Week 1 Introduction to the course and each other, review the syllabus, share initial understanding of leadership	What is sustainability? What is sustainability leadership?	Opening circle, mingle mingle icebreaker, name game, small group activity with syllabus, strengths you bring to the class project- discuss
Oct 2 Week 2 Sustainability: knowing each other; Community-Based Learning project (LGL); form small groups for teaching presentations	Who are we as leaders and where are we coming from? Are we sustainability leaders? What does a quantum worldview teach us about leadership?	Opening circle Share personal <b>visual autobiography assignments</b> in small groups Discuss readings and guiding questions Visual autobiography art gallery <b>Leadership reflection due</b>
Oct 6 <b>Week 2 Saturday</b> Meet at the Learning Gardens Lab 10:00-1:00 Tour the site, activity on site	How does LGL serve various communities? How can our project contribute to the development of LGL?	Connect to place experientially through site visit
Oct 9 Week 3 Approaches to Sustainability Leadership-- starting with sustaining ourselves	What are various approaches to leadership? How can we sustain ourselves as leaders? How do fields shape sustainability leadership?	Opening circle Small group discussion: approaches to leadership (readings) Large group discussion: self-care, Traditional Ecological Knowledge, and balcony/dance floor. Case in point project work <b>Group presentation proposals due</b> <b>Personal Care Plan due</b>
Oct 16 Week 4 Sustainability Leadership: economic systems, justice, and new perspectives on organization	What is the relationship between economic globalization and sustainability? What is the role of self-organization, information and chaos in organizational systems?	Opening circle Discussion: root values of economic globalization Small group activity: human sculptures to demonstrate key ideas from readings including self-organizing systems, paradox, dynamic energy, living processes, patterns, justice Case in point project work
Oct 23 Week 5 Sustainability Leadership: eco-spiritual values and traditional ecological knowledge	How do Traditional Ecological Knowledge and ecospiritual values inform sustainability? How can leaders attend to meaning-making and process in change making?	Opening Circle Small group activity: using quotes from the readings, reflect for 5 minutes of stillness, then 5 minutes of drawing and doodling—minimal talking, then 5 minutes of talking about the experience Large group discussion: role of dwelling consciousness, metaphors Case in point project work
Oct 30 Week 6 Sustainability Leadership: whole systems thinking and ecological design	In what ways are systems thinking, interconnectedness, and holistic design central to sustainability leadership? What is the role of relationships and interdependence in this work?	Opening circle Discuss leadership papers in small groups Large group discussion of themes around whiteboard Case in point project work <b>Group Presentation- whole systems design Leadership Paper due</b>
Nov 6 Week 7 Sustainability Leadership: knowing self in relationship to land, place and others; developing ecological identity	How can we develop rich relationships with others and our places? What does place have to do with sustainability leadership?	Opening circle <b>Group Presentation- place and ecological identity</b> Case in point project work
Nov 13 Week 8 Sustainability Leadership: relationships, collaboration & creativity	What is the role of cultivating relationships, networks, collaboration, and creativity in leadership for sustainability?	Opening circle <b>Group Presentation- collaboration and creativity</b> Case in point project work
Nov 20 Week 9 Sustainability Leadership: inquiry, listening, and reflection	What is the role of listening and reflection in sustainability leadership?	Opening circle <b>Group Presentation-listening and reflection</b> Small group discussions and role plays of key points Case in point project work
Nov 27 Week 10 Sustainability Leadership reviewed	How do we now understand sustainability leadership? How can sustainability leadership make a difference? How are you inspired to make change as a sustainability leader?	Opening circle Reflections in pairs Case study activity Case in point project work <b>Personal Leadership Reflection 2 due</b>
Dec 4 Week 11 Final presentation of project Final evaluations Peer and self-review	How is our understanding of sustainability leadership applied to a real project?	<b>Final project presentation and final papers due</b>