

Caring as Class: Resolving the Emotional Paradox of Climate Change Education

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Abstract: How do we help students (and ourselves as instructors) prepare to engage in sustained action in the face of climate change and its root causes of extraction, inequity, racism and colonialism? In this article, we elaborate on the conceptual and practical challenges in preparing students for sustained action to imagine and enact a compassionate and sustainable future in the face of climate change. We discuss our integrated teaching-research-engagement approach aimed at examining the potential role of compassion as a transformative practice for reducing long-term risks from natural hazards and climate change. We provide summaries of and reflections on a pair of courses taught in 2019 and 2020 that explored, respectively the inner personal dimensions and external relational dimensions of professional work to reduce climate risks. We conclude by detailing some of the lessons we've learned in the processes of convening these courses and look to future opportunities for growth and sustained action as educators ourselves.

Keywords: compassion, climate planning, COVID-19, emotions, equity

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“What will it take to create a transformation in human society to coexist with our human and more-than-human earth kin?”
– *Journal of Sustainability Education call for papers 2021*

The question of what it will take to induce societal transformation in the face of climate change is daunting to consider, intimidating to try and answer in the abstract, and potentially paralyzing to try and address through teaching, research, and practice. That is, in response to the JSE editors’ question, we may be tempted to simply curl up in a ball and rock back and forth in search of temporary comfort and escape.

Yet, in crafting the subtitle for this issue on climate change, JSE’s editorial team has pointed to multiple paths forward: resistance, recuperation, and resilience. Each of those terms have their roots in *sustained* action, with the Latin meaning of the ‘*re*’ prefix based in doing again and again (dictionary.com). The same implication is present with kindred concepts often used in the realm of grappling with climate change like regeneration, reparations, restoration, recentering, and renewal. Altogether the emphasis on sustained actions, with each term in its own way looking both backwards and forwards in time and knowledge, raises a very direct challenge for educators: how do we help students (and ourselves) prepare to engage in sustained action in the face of climate change and its root causes of extraction, inequity, racism and colonialism?

In this article, we describe our response to this question, admittedly very much a work in progress. We first elaborate on the conceptual and practical challenges in preparing students for sustained action to imagine and enact the future. Paramount among these challenges is acknowledging that climate change cannot be addressed in an equitable way without also addressing its roots in colonization, racism, sexism, and extractive capitalism. Next, we discuss our integrated teaching-research-engagement approach, developed as part of a US National Science Foundation CAREER award project aimed at examining the potential role of compassion as a transformative practice for reducing long-term risks from natural hazards and climate change. Then, we provide summaries of and reflections on a pair of courses taught in 2019 and 2020 that explored, respectively the inner personal dimensions and external relational dimensions of professional work to reduce climate risks. Finally, we detail some of the lessons we’ve learned in the processes of convening these courses and look to future opportunities for growth and sustained action as educators ourselves.

Climate Equity, Multiple Knowledges, and the Emotional Paradox of Sustainability Education

Our aim in developing these courses stems from a deeply humanistic concern with inequities associated with the causes and impacts of climate change. For this audience we assume familiarity with widely documented inequities at all scales. Examples include, but are far from limited to, the global phenomenon of predominantly white, northern hemisphere, exploitative

colonizer societies releasing the greenhouse gases driving climate change while climate impacts first and most severely impact predominantly Black and brown, southern hemisphere, exploited colonized societies (Johnson and Wilkinson 2020, IPCC 2014, Prakash and Girgenti 2020) to the local phenomenon of suburban development patterns associated with predominantly wealthy and white communities contributing more per capita to local urban heat islands while predominantly poorer communities of color suffer during heat waves (Stone 2012). Our humanistic concern does not exclude concern for other beings – those clearly sentient and those whose sentience we might question. But, like readers of the *Journal of Sustainability Education* we find ourselves part of a growing cadre of educators interested in bridging the often technical and ‘objective’ realm of climate science and policy with the often relational and ‘subjective’ realms of ethics, compassion, and community-driven action (Ray 2020, Walsh et al. 2020).

Work in the realm of climate inequity fundamentally deals with identity, values, power, and interdependent systems (Johnson and Wilkinson 2020). In learning environments focused on anthropogenic climate change, students and instructors face questions related to who are ‘we,’ which implies a different and perhaps less worthy ‘them.’ Who emits most greenhouse gases? Who doesn’t? Who has the resources to adapt to impacts? Who doesn’t? Who accepts climate change as a problem worth addressing? Who doesn’t? At the risk of stating the obvious, these questions unfold in the context exploitative and destructive legacies and ongoing realities associated with colonization, exclusion based on race, sex, gender, ethnicity and more, and inherently extractive capitalism. At a deeper level, they also elevate traditional views of the student as an individual, thereby de-coupling the problems and solutions they learn about from solutions that demand collective action. The words of the visionary Black feminist Audre Lorde, “the master's tools will never dismantle the master's house,” challenge us as educators to consider how the learning environments we provide students serve to reinforce the systems that created our climate crisis, as do her calls for love and connection point to a relational path forward (Lorde 2007).

All too often we find that students who take sustainability-oriented courses experience the following positive-feedback cycle. Introductory courses with an environmental or social justice dimension, whether in the physical sciences, social sciences, or humanities, provide captivating information and incisive analyses that motivate students to learn more about what is arguably the grand challenge of the 21st century: climate change. Each new course makes them more and more aware of the scale of the problems and over time reveals to them their own (often unchosen) complicity in the systems that create the problems. Their relative obscurity as young people (students no less) drives home a perception of lack of agency to make a positive difference as an individual, in spite of the amazing examples of Greta Thunberg, Xiye Bastida, Isra Hirsi, Leah Namugerwa, and Alexandra Villasenor. In most educational settings, the solution to a problem is to seek more knowledge as an individual, which leads back to the start of the cycle.

But what type of knowledge do they find? Sadly, many students find themselves spinning a more and more intricate web of awareness rooted predominantly or exclusively in rational, objective, scientific ways of knowing. They learn about biogeochemical nuances of the climate cycle or

debates between supply side and demand side economic theories or how racism drives land use decisions that determine health above other factors or legal and administrative dimensions of policy and planning interventions. None of this focus on objective and rational knowledge is bad; it is essential. Yet it is incomplete, perilously so because so many of these forms of knowledge have been co-opted and used as tools to build the technical, economic, social, political architecture of the house of climate change we find ourselves.

In our own specific field of urban and regional planning, the same pattern plays out. Students focusing on environmental and land use planning at accredited programs learn lots about zoning codes, basic statistics, subdivision regulations, comprehensive plans, and public involvement techniques, the standard tools of the profession. Some students may also take coursework on emerging, innovative, and eye-opening areas of practice like food systems planning, urban forestry, or sustainable transportation. Yet, the tools and subareas of planning have been shaped as much, if not more, by legal and economic systems designed to reinforce existing power structures than by the aspirational values and norms of serving the public interest. Again, the conventional rational-objective approaches to planning and sustainability education are not bad, just incomplete. Ward teaches just such a summer school course on hazards and climate planning that students seem to really benefit from; the course relies on technical how-to resources like Intergovernmental Panel on Climate Change reports (2014), the US National Climate Assessments (2018), and Climate Action Planning (Boswell, Greve, and Seale 2020) and a project-based approach to help students gain practical experience developing an actual local climate plan.

Only recently have some planning scholars promoted a new line of inquiry pushing our community to stop thinking and teaching about planning with ‘half a mind,’ which describes the typical approach of more or less ignoring emotions and relationships of the people who actually do the planning (Baum 2015.) In groundbreaking work, Erfan explores what it might mean to conduct trauma-informed planning, looking to Indigenous communities for wisdom and tangible lessons (2017). Stacey White and I (Ward) have described the emotional paradox of public engagement as arising “when planners experience the need to minimize and contain the influence of emotions in their work,” even though those emotions are what motivate them to pursue public service and community engagement as their career (Lyles and White 2019). Here we adapt the concept to define *the emotional paradox of sustainability education*:

Students and instructors often find sustainability issues engaging because of their deep emotional commitment to the topic but in educational settings often find themselves having to minimize or deny the emotional dimensions inherent to learning and action aimed at achieving long-term sustainability.

Some students are fortunate enough to find courses and instructors who help them cut through this paradox. These students encounter learning processes focused more on the power of

relationships (c.f. Keltner 2016) and the myriad forms of active compassion (c.f. Armstrong 2011), often arising out of feminist, queer, Black, Indigenous and similar theories and practices (c.f. Lorde 2007, Simpson 2017, Gumbs 2020) Students encounter not just a late 1800s speech from Chief Joseph or an advertising trope like the ‘Crying Indian,’ but contemporary Indigenous writings on how land itself is pedagogy (Simpson 2017) and how centering anti-colonialist Indigenous knowledges can serve as the foundation for the transformations we need (Wildcat 2010, Simpson 2017, Gilio-Whitaker 2019, Estes and Dhilling 2020). Students encounter not just documentation of the egregious and shameful patterns of environmental injustice (c.f. Bullard 2008), but brilliant and revolutionary inspiration from Black feminist activists linking deep theory with artistic expression and real-time collaborative social change at the local scale (brown 2017 and Gumbs 2020). And, these students begin to see how these contemporary academic activists, who provide accessible models for their own future growth as individuals who can and do make a tangible difference, are rooted in robust traditions of resistance, recuperation, and resilience.

We conclude this section by acknowledging that we are far from alone in this quest. We recently discovered Sarah Jaquette Ray’s amazing book, [A Field Guide to Climate Anxiety](#), which anyone interested sustainability education in the Anthropocene should read. Ray covers much of the same intellectual territory we just covered, but in much greater detail than we could possibly do here, with particular attention to teaching undergraduate students (2020). The book synthesizes deep wisdom while providing actionable ideas for instructors and students alike. Zach Walsh, Jessica Bohme, Brooke Lavelle, and Christine Wamsler likewise offer ideas for innovative learning opportunities, grounded deeply in theories and practices often ignored in sustainability realms. Their 2020 article *Transformative education, towards a relational, justice-oriented approach to sustainability* “provides a reflexive case study of the design, content, and impact of a course on eco-justice that integrates relational learning with an equity and justice lens” (2020). Not coincidentally, Brooke Lavelle has been an inspiration and guide in our efforts through Courage of Care Coalition (described below) and Ward has co-authored an article with Brooke and Stacey White on The Prospect of Compassionate Planning (2017). More broadly, in the time since we taught our classes, wonderful new volumes have been published that we anticipate using in future iterations, starting with [All We Can Save: Truth, Courage, and Solutions for the Climate Crisis](#), the groundbreaking collaboration of more than two dozen women essayists and poets edited by Ayana Johnson and Katharine Wilkinson (2020), [Winning the Green New Deal: Why We Must, How We Can](#), edited by leaders of the Sunrise Movement Varshini Prakash and Guido Girgenti (2020), and [The Future Earth](#) by Eric Holthaus (2020).

Our approach:

Our attempts to explore and help resolve questions of creating learning environments for students to develop the skills, confidence, and personal grounding to engage with sustained action to address climate change have been made possible by a CAREER award grant (5-years, \$500,000) from the US National Science Foundation, specifically the Humans, Disasters, and Built Environment program in the Engineering Directorate. The project develops, tests, and refines a new model of long-term risk hazard reduction, which explicitly incorporates

stakeholders' thoughts and emotions as factors that interact to enhance or constrain hazard mitigation decision-making.

Terminology Interlude

Almost a confusing issue of terminology. In the emergency management realm, which historically has a leadership role in dealing with hazards like hurricanes, floods and earthquakes, the term mitigation refers to long-term reduction of risks like loss of life, injury, property damage, and social and economic disruption.

The emergency management use of mitigation contrasts with use of the term mitigation in the climate change arena, which uses mitigation to refer to reducing greenhouse gas emissions to stem climate.

The two courses we developed were conceived as serving two purposes: 1) testing and refining learning modules, activities, and exercises that can be delivered in higher education settings and 2) taking what is learned in the higher education testbed to develop modules, activities, and exercises that can also be delivered as ongoing professional education for public servants and engaged community stakeholders.

Oddly enough, the first activity we (Ward and Kelly in this case) undertook to launch the CAREER project was to participate in a

five-day intensive anti-oppression ‘retreat’ grounded deeply in contemplative traditions and trauma-informed practices that was offered by the non-profit Courage of Care Coalition, led by Brooke Lavelle. The retreat served as the launching point for a year-long program (2018-2019) of deep introspection, relationship building, and somatic work to help us develop as educators. The experience for both of us was transformative -we both agreed that it was among the most intense experiences of our lives - and profoundly influenced virtually every aspect of the course development. However, we did not aim to replicate the Courage experience (as we called it) in our courses, due to multiple factors we knew we could not replicate and also anticipated that others who might build from our work might not be able to replicate as well. These factors include but are not limited to: a) the Courage experience included a 1:3 facilitator to participant ratio, b) the Courage facilitators embody numerous different racial, sexual, ethnic and other identities, c) the Courage facilitators include professional therapists, extensively trained contemplative practitioners, and people with decades of involvement in social justice activism, and d) the Courage program involved a five-day in-person experience. In sum, we’ve tried to strike a balance of anticipating that people attracted to this type of curriculum will have experience (or at least interest) in the realms of contemplative practices, trauma-informed interaction, and social justice activism, but may be early in their journey in these processes. Through Courage of Care, Brooke has served as a consultant on the development of our courses, roughly over the same timespan that she, Zach Walsh, Jessica Bohme, and Christine Wamsler were developing and teaching a similar course at Lund University in Sweden. [Yiwen also participated in the Courage program, but did so in 2019-20 through an online-only format.]

In developing our courses, we sought to maximize the potential for replication and adaption by reducing the requirement that instructors go through specific preparation programs, through Courage of Care or other similar entities. However, we do feel compelled to make some cautionary notes for other instructors considering a similar approach to ours.

First and foremost, if instructors themselves are not comfortable holding space as students grapple with deeply personal and highly emotional issues, then more preparation is likely necessary. Thinking and talking about climate change can be (should be) deeply emotional for students and instructors, but for the purposes of teaching instructors need to be able to at least temporarily center themselves and be ready to support students. One aspect of teaching this type of course that cannot be over-emphasized is the benefit of having two or more co-instructors, ideally with mutual trust and understanding but different identities and perspectives.

Second, we've taught the class with graduate students in public service-oriented professions who self-selected into the course. Given the necessity of engaging with issues like racism and colonialism, if students who are not interested in – or worse, are dismissive of the reality of these issues – are required to take the course, then other students and the instructors themselves may be harmed. Students who live every day overtly negatively impacted by racism, sexism, homophobia, and other forms of oppression and erasure should not be subjected to other students (or instructors) denying, minimizing, or mocking their reality, even if it is part of the learning process of privileged students.

Third, for reasons likely to be obvious, we have not approached these first iterations of the courses as opportunities for 'objective' experimental design with pre-test/post-test data collection. Nonetheless, we do feel that our experiences described below may be instructive for others grappling with the vital questions posed in this issue of the *Journal of Sustainability Education*.

Spring 2019 Experience

We titled the course taught in Spring 2019 “Cultivating Compassionate, Sustainable Communities I: Personal Transformation for Natural Hazards and Climate Change. The core aim of the class, as described in the syllabus was to ““promote personal transformation in the context of broader systems change, drawing heavily on practices that are simultaneously emerging and cutting-edge in this context, but also are informed by ancient and time-tested wisdom.” The main learning objectives were for participants to:

1. Dedicate time, thought, and feeling to exploring the interplay between a) professional ethics and norms, b) compassion and emotions, and d) serving the public in difficult contexts;
2. Apply a compassionate systems framework to learn about the role of public service professions in long-term risk hazard and climate change risk reduction at the local level, especially our chosen profession;
3. Deepen our personal compassionate practices of extending care to others, receiving care from others, and self-care; and,
4. Expand our abilities to formally and informally communicate how thoughts and emotions intersect in our work, in hopes that our sharing opens opportunities for our peers.

We built the course around three core modules, each centered on a partial-day mini-retreat with companion activities completed in between. The three course modules centered on the following themes, built around touchstone readings.

Module 1: Professions, Love, and Long-Term Hazard Risk Reduction

Touchstone readings for this module included Dweck's Mindset (2006), hooks' All About Love (2001), and Boswell, Greve, and Seale's Local Climate Action Planning (2012).

Module 2: Compassion, Deep Diversity, and Differential Suffering from Hazards and Climate Change

Touchstone readings for this module included Chodhury's Deep Diversity (2015), Worline and Dutton's Awakening Compassion at Work (2017), and a set of journal articles on hazards, environmental justice, and climate equity planning.

Module 3: Emotions, Leadership, and Promoting Sustainable Flourishing in the Face of Climate Injustice

Touchstone readings for this module included Goleman, Boyatzis, and McKee's Primal Leadership (2013) and Wamsler's 'Mind the gap: The role of mindfulness in adapting to increasing risk and climate change' (2018.).

The workshops, which took place on Saturdays to accommodate students' schedules and take advantage of availability of multiple classrooms for smaller group breakout activities, consisted of strategically ordered activities. We began the workshops with icebreaker activities designed to decenter the instructors as the locus of attention and knowledge and to build community. We then alternated between mini-lectures and white-board discussions, typically led by Ward, brief mindfulness meditation activities adapted from *Courage of Care* and led by Kelly, and group activities, such as pair-and-share discussions wherein a pair of students take turns helping their partners understand how each other's professions (e.g. engineering, public administration, planning). During each workshop, the instructors provided food and there was extended time for sharing a morning and noontime meal.

Each module also included four main expectations for out-of-class: 1) completing readings and viewing/watching audio/visual materials, 2) completing guided contemplative practices, 3) personal journaling, and 4) two assignments resulting in tangible digital products. There were weekly expectations for keeping up with the contemplative practices and personal journaling, which required roughly 2 to 3 hours per week. The completion of the readings and assignments enabled more flexibility in pacing and were intended to take 15 to 20 hours per module (about 4 or 5 hours per week if paced evenly throughout the semester).

Students completed six activities (2 each module) designed to enhance their understanding of the core topics in each module through observation, reflection, and critical analysis. Each

assignment aimed to push students out of typical ‘academic’ modalities into the types of ‘products’ they might be asked to develop in a professional setting, while still engaging with issues of emotions, and ethics, and uncertainty in the face of climate change.

Assignment 1: Blog Post on Professional Interview and Professional Resources

Assignment 2: Case Examples for Professional Ethics Training

Assignment 3: Memo applying Deep Diversity Framework to Code of Ethics

Assignment 4: Slide Show for Professional Training Workshop

Assignment 5: Letter to Self from the Future

Assignment 6: Leadership Statement

Assessments and Lessons Learned

In keeping with our emphasis on reflection, a rigorous but flexible course evaluation process was important to our overall course design. At the university where the course was taught, course evaluation processes include electronic, anonymous submission by students of responses to a standard course evaluation form near the end of the semester. Evaluation items ask students to answer questions about how often the class met, their anticipated grade, and course ratings on the class tasks; they also provide space to answer open-ended prompts about positive and negative aspects of the course instruction. Because of the timing and anonymity of the course evaluation process, it helps ensure students are not impacted by retaliatory grading if they provide a negative evaluation. However, the student evaluation process is limited in a variety of ways: many students do not fill out evaluations, some fill them out with minimal effort or interest, and the substance and phrasing of the questions means instructors receive virtually no information that is actionable to improve the course. Moreover, the process provides no opportunity for interaction between both peers and instructors for follow-up, clarification, and meaningful discussion about how to improve future courses.

To expand upon the university’s standard course evaluation processes, we developed our own Structured Feedback Process that involved feedback and reflection at several levels. First, we provided an open forum for feedback at the final course workshop where students and instructors could chat candidly in an informal setting about what worked and didn’t work. Second, the instructors practiced self-reflection by writing up a set of notes based on their experiences during the course and the feedback from the students. Finally, the course syllabus, assignments, workshop agenda and notes, student and instructor feedback were compiled into a Final Course Packet and shared with experts in different subject-areas for an additional layer of feedback.

Student Feedback

The final workshop offered students space to engage in a course reflection conversation. Feedback focused on assignments, journaling and sustaining contemplative practice, course structure, and natural hazards/disasters emphasized content. Students provided positive feedback in general along with suggestions for improvements. Students articulated the importance of connecting cultivating compassion to leadership and management in their own professions. One of the highlights of this course was the inter-disciplinary and collective transformation of

knowledge. “We, as a group of graduate students from different fields, can learn from other’s professional experience. More importantly, we exchanged values and ideas of dealing with climate related issues as a whole.”

With an emphasis on “personal transformation”, students’ feelings and demands from the course varied. Some students commented that the workload felt light on assignments, but the class overall was mentally challenging. They reported that the contemplative practice dimensions did not feel overly quantified (e.g. you must meditate for X minutes per day) or too performative (e.g. you must do this exercise in a group with others), but the tradeoff was that it was difficult to sustain their weekly practice. This response relates to the stated intent of the course, which was to be mentally challenging without being burdensome on students with rigorous workloads already.

The course was designed to provide students with ample time to develop their practice, readings, and reflection. Regarding scheduled assignments, students reported that the more creative assignments, like Assignment 5: Letter from the Future, were particularly helpful and refreshing in the second half of the semester. This feedback prompted instructors to review the schedule to consider the overall flow of the semester - students’ overall workloads often peak mid-semester and obviously in the final weeks - in scheduling assignment due dates. As noted, one of the reported challenges of the class was accountability in maintaining contemplative work and journaling. When asked how instructors could support meditation practices students referenced accountability, suggestions included requiring a daily reflection on their practice, or perhaps the inclusion of an accountability partner. Some students formed small groups and scheduled weekly group time for contemplative practices. One student indicated that it was helpful “that instructors leave freedom for students to facilitate their own practices based on privacy and own demands.” Students also provided suggestions on different journaling activities including the “BestSelf” journal or some sort of equivalent journal that might include prompts for planning, setting goals, gratitude, and more “Strengthsfinder” type items.

Regarding the class format, a few students expressed desires for a 3-hour weekly seminar over workshops. Students’ various levels of knowledge and exposure to climate change affected their demands for class content. Weekly seminars could be helpful to connect students to traditional hazards/climate change learning. Nonetheless, most students felt that multi-hour, weekend workshops brought better-connected interpersonal communication. Again, the flexibility and personalized dimensions of the course was reflected by assignments (e.g. slides making, and leadership). Students could tailor the assignments to meet their academic goals. Several students inserted a note that a better coherence between hazards/climate change and public service/emotion could benefit the course. There was a discussion of whether the course would benefit from focusing solely on emotions and public service without a hazards piece. However, the hazards and natural disasters component forms a most essential piece that motivates students/different professions to work together, as stated in the CAREER grant. So additional brainstorming on how to better integrate hazards and natural disasters will be needed in future

iterations of the course. Additional suggestions included building assignments around their selected hazard event throughout the semester or assigning a single disaster or hazard event to guide assignments, sharing, and discussion throughout the semester.

Instructor Reflections

We reflected on the course using the following prompts: What worked well, what could be improved, personal experience, and changes to consider. Returning to our conceptual framework for emotions in planning, we agreed that the course met most of our expectations on climate and pedagogy, but perhaps was imbalanced in the content. In creating an inclusive learning environment, instructor feedback noted a positive association with creating new spaces within graduate education for community building and exploration, not just information transition, such as “Really felt like helped fill glaring gap in graduate education for bridging personal and professional realms” and I “Loved seeing and hearing the students interact at workshops—felt like I was part of something bigger than just a ‘class’ or a ‘workshop.’” Both instructors noted that building trust is essential to implementing a course like this and providing both informal and formal modes for students to interact and continue to build trust would be enhanced by consistently “sharing space” weekly in a 3-hour seminar class. Other means to further enhance the learning climate could include offering weekly group sits where students practice mindfulness together.

Instructors agreed that student concerns about hazard mitigation content, a reflection that speaks to an imbalance in the “content” aspect of our framework. Solutions to correct this imbalance include altering the course structure to a 3-hour weekly seminar to provide some time for more traditional lecturing around hazard mitigation planning, especially for non-planning students, and assigning all students the same hazard event at the beginning of the semester. Alternatively, one or more prerequisite courses in hazards or climate change could be required, though that would create an undesirable barrier to enrolling in the course.

Peer Feedback

We also received feedback from three experts in different subject areas and professions. One expert serves in an administrative capacity at the university’s Public Management Center (PMC), which provides professionals continuing education in myriad aspects of public management. Another expert is a professor of practice in Social Welfare, providing expertise both from a research and faculty perspective, and as a clinician, facilitator, and practitioner of mindfulness exercises. The final expert manages the nonprofit Courage of Care and provided expertise primarily on the compassion and mindfulness aspects of our course. Expert feedback was returned in a variety of ways—some experts reviewed the Course Evaluation Packet and made in-document additions, comments, and changes. Others provided a series of summative statements on their overall thoughts.

In general, comments addressed the following actions: overall format and class structure, adjustments to syllabus, assignments, and workshop agendas, and course content including readings to add or remove and suggestions on meditative practices. Expert comments highlighted

a handful of recommendations that touched on overarching areas: 1) Community building, formal and informal networking; 2) Increased infrastructure and support for developing a contemplative practice, including providing more explicit support and safety for students who may be triggered emotionally or challenged in other stressful ways by beginning a meditative practice, including offering different options during contemplative practices, and pacing the practices so that there are fewer, and shorter practices in the beginning of the course; 3) Integrate content on social oppression in addition to talking about power; 4) More teaching on compassion as a motivational stance. Experts also provided additional articles, teaching techniques, and meditative practices to the syllabus and assignments.

Concluding thoughts on Spring 2019 Course

We sought to implement our proposed framework for teaching in higher education centered on climate, pedagogy, and content, focusing first on how to create a learning environment that was reflective, supportive, and ideally, safe for students. Our compassion and mindfulness training provided the foundation for beginning to create better learning climates for students of all backgrounds, however there can always be more work to be done. Compassion and mindfulness training also provide an additional avenue for instructors and students alike to practice self-reflection, and we argue that the value of reflection matters both for the profession, academy and within the development of a new format and type of teaching.

From this process we generated lessons learned about course development and implementation and developed questions that direct future course development, and we hope will engage planning educators moving forward. First, when implementing a course that centers emotions, additional support must be available for students to both develop their own contemplative practice (maintain accountability), and access mental and emotional health support as needed (provide a safe learning environment). Second, the relational aspect of this course was valuable both to students, instructors, and expert reviewers. To further support this stated goal and benefit of our course, future iterations of this course will be held in-person rather than in a hybrid online/workshop format. Third, creating an educational space based on our framework that builds on a foundation of classroom climate and relationships first, pedagogy next, and content last will require some retraining for both instructors and students. Taking this approach also likely means more explicit orientation to the course objectives and design for students. It likely also means instructors need to spend more up-front time on the subject of developing one's own mindfulness practice. Despite these adjustments, we believe this model holds promise for a wide array of courses at the intersections of humans, ecology, and the built environment.

Spring 2020 Experience

For the Spring 2020 course, we opted for the title “Envisioning a Compassionate and Sustainable Future during the Climate Crisis.” In the period between the spring 2019 course and the start of the 2020 course, our team had established a partnership with the Sustainability Office of the City of Lawrence and Douglas County to work on a deep engagement local planning process centered

on climate equity. As such, we approached the spring 2020 course as an externally focused, service-learning experience. The learning objectives for the course were to explore three main themes:

- 1) the intersection of compassion and justice in our professions,
- 2) theories and practices of community engagement and participatory action research, and,
- 3) climate change and long-term hazard risks.

Our hope was that each of the participants would have time to:

1. Dedicate time, thought, and feeling to exploring the interplay between the three course themes;
2. Apply a compassionate systems framework to learn about the role of public service professions in long-term risk hazard and climate change risk reduction at the local level;
3. Learn about the broad array of theories and practices associated with community engagement, participatory action research, and service learning;
4. Gain experience with multiple theories and practices in the context of Lawrence's 2020 climate change planning process; and
5. Add to their portfolio of learning products that showcase their preparation for professional work in the realms of community engagement and the climate crisis.

In terms of format, the course syllabus planned weekly seminar meetings for the first half of the semester, followed by a month of optional work sessions, which would culminate in the students presenting their final projects at a 2-day Climate Compassion and Justice symposium hosted by KU's Center for Compassionate and Sustainable Communities and planned for April 16-17, 2020. The symposium was to be a kick-off event for the broader city/county programming to unfold over the following week, which marked the 50th anniversary of Earth Day internationally, and the 20th anniversary of its celebration locally. Together these activities would serve as the launch of a months-long deep engagement process for the community as part of the climate equity planning process. As noted below, the spread of SARS-CV-2 (COVID-19) resulted in reconsideration of priorities and adaptations to our aspirations. Before addressing those adjustments, though, we lay out in more detail what we covered in the first half of the semester and what had been planned for the second half of the semester.

Topics for the first half of the semester were chosen to help students broaden and deepen their perspectives on what constitutes knowledge relevant to climate change and how public engagement might diverge from traditional, formulaic, and generally top-down planning activities. Each session involved students completing a set of reading in advance and then listening to and talking with guest experts. Our community partner from the Sustainability Office, co-author Jasmin Moore, participated throughout the semester, as she had done in the prior months helping conceive of and design the course format. The topics we covered over the first six weeks included: a) Climate change in Lawrence, b) Compassion and climate change, c) Community Engagement and Participatory Action Research, d) Indigenous Knowledges and Youth knowledges, e) Community Science and 'Lay' Knowledges, and f) Integrating Arts, Engagement, and Research. Guest experts included faculty from KU and other universities, a

museum curator, an arts event coordinator and community climate organizer, a poet and professor, an architect and community organizer, a mental health professional and mindfulness instructor, and more. The identities of these guests varied across gender, sexual orientation, race, and ethnicity, embodying in person the diversity of knowledges also presented.

During this process of expanding our horizons in the first half of the course, students completed six exercises, each of which asked them to try on and practice to form of knowledge and techniques we learned about during the corresponding week. Emphasis was placed on taking risks and getting out of comfort zones, not performance or perfection. The assignments were:

Assignment 1: Letter to Self from Climate Future

Assignment 2: Perspective Taking

Assignment 3: Photovoice

Assignment 4: Oral History/Interview

Assignment 5: Community Science

Assignment 6: Community Art

The intention before the COVID disruption was for students to pick one of the methods of participatory action research they had learned about in the first half of the summer and develop a project that could be displayed during the April 16-17 symposium and/or be conducted during the symposium with the participation of attendees.

COVID-19 Adjustments

Over spring break 2020, the week of March 12th, many things became clear to us as instructors: 1) we likely would not be meeting in person again for the remainder of the semester, 2) the April symposium and Earth Day activities would likely be cancelled, and 3) that COVID would present an opportunity to try and live up to the types of care and adaptation we anticipated talking about in the context of climate change, at least among those of us in the class. After a second week of spring break, which KU insisted we try to figure out how to carry out the remainder of

Assessment and Lessons-Learned

Student Feedback

As a student (Yiwen) who took both classes in springs of 2019 and 2020, I was greatly impacted by the course both academically and personally. I was able to transform knowledge about climate adaptation learned in previous courses into a set of practical skills, including public engagement tools, compassionate planning techniques, and qualitative research skills (e.g., interviews, surveys and creative way of analyzing text). More importantly, as Covid-19 hit, the courses and projects

moving online enabled me to think broadly, adaptively, and creatively without limiting myself to focusing solely on technical dimensions of hazards and climate change. For my project, I interviewed three individuals from all over the world regarding how they and their cities had accommodated the global pandemic. I aimed to borrow insights from dealing with pandemic to inform climate adaptation planning practices. At the personal level, I applied compassionate engagement techniques while conducting interviews. When constructing interview questions, I deeply reflected on what had been learned from “perspective taking”, which allowed me to think

empathetically. When asking a question compassionately, it was more likely that interviewees would share more so that a better conversation environment could be resulted.

Instructor Reflections

As with the spring 2019 course, instructors reflected on the course using the following prompts: What worked well, what could be improved, personal experience, and changes to consider.

Drawing from the lessons-learned during our Spring 2019 course, and due to its intended service-learning and collaborative nature of this course, we adjusted the format of this course from online meetings with periodic longer workshops, to weekly in-person sessions for the first half of the semester, followed by co-work sessions in the second-half (at least that was the plan at the outset of the semester). Before the pandemic hit around mid-semester, the weekly in-person meetings created a good environment for collaborative learning and trust building, something that may not have been possible had we been all online from day one. In turn, when we had to adjust the course due to COVID, the transition was fairly smooth with some students showing up for weekly chat and co-work sessions, and others choosing to proceed independently.

As in Spring 2019, we found that the content we built into the syllabus aligned well with our students' interests and desires for more applied professional training. Service learning and participatory action research were good additions to the previous years' focus on compassion, professions, and hazards. These added subjects were particularly helpful for urban planning professional training that students can use in internships and future job settings. We expect the format will translate well into an undergrad sustainability studies or environmental studies capstone-type environment.

When asked what could be improved, instructors pointed to COVID as the single biggest challenge of the semester. The initial disruption and subsequent public health measures meant that the cumulative process focused on 'real-world' public engagement evaporated. While disappointing to all involved, the changes provided an opportunity as instructors put our skills and training in compassion into practice and offer our students unprecedented flexibility and support as possible. As a group, we navigated the changes with success partly because care and community were part of its ethos from the outset. Students were given options on how to proceed with the semester, and supported in altering their projects as needed. In the end, many of the students creatively reimaged their projects in a new context with great results. Consistent with the themes of compassion and adaption, we worked to accommodate the needs of students that lacked the capacity to adjust post-pandemic. For some students this meant making it clear that it was ok if they could not attend weekly sessions. For other students it meant understanding that their other school and life demands would mean that the ideas and goals they had for their semester project needed to be scaled back considerably.

Kelly faced some unique dynamics during the Spring 2020 worth noting. Like most doctoral students in their first or second year of their program, she had her own classes to complete, some of which did not manage the mid-semester adjustments due to COVID as carefully nor as

successfully. Kelly also was a relatively new parent at the time and her childcare responsibilities changed overnight as a result of the pandemic. These simultaneous and unanticipated changes reduce her capacity and increased her stress, dynamics still present at the time of writing this manuscript. Some instructors understood that I was limited in my time and ability to do coursework, others did not. This situation points to a major takeaway: a course that is grounded in core conceptions of compassion, especially the ability to consider others' perspectives, to feel with them and to use the will to act in accordance with that understanding, is fundamentally suited to unforeseen changes of the magnitude we experienced in March 2019. A course grounded in collaboration and compassion, regardless of topic, will continue to be more successful and accommodating of students as we move deeper into climate change.

Community Partner Reflections

The timing of the course aligned with the public outreach planned for the Douglas County climate action and adaptation plan. A guiding value of the climate action and adaptation plan was equitable engagement. The deliverables developed by the students related to engagement strategies were intended to inform some of the plan engagement. The Sustainability Office's schedule related to the development of the climate action and adaptation plan shifted significantly as a result of the COVID-19 pandemic. When it was no longer possible to literally meet people where they naturally gathered, it was necessary to pause a public launch and consider what equitable engagement looks like during a global pandemic. The course and the mid-semester shift made by the students provided insight into how in-person engagement strategies could be adapted for online engagement. The final deliverables presented at the end of the course were packaged in an accessible format, which made it easy to share with community partners interested in testing out the engagement strategies.

Importantly, building a rapport between local government, university partners, and students is not easy. There is a long history of extractive research practices characterized by researchers going into communities to conduct research and then neglecting to provide any community benefit or share findings. The partnership between the Sustainability Office and the researchers involved in the course was developed many months in advance. The scope of the course deliverable – applied participatory action research – was developed in partnership with us, the primary community partner. Early and meaningful engagement of university researchers with the local government partner resulted in a trusted relationship that was responsive to the drastic changes brought on by the pandemic. We will benefit from future iterations of this course in connection with implementation of the climate action and adaptation plan, if it is offered in the future.

Moving forward

None of us alone cannot answer the editors' motivating question of what it will take to transform society. None of us alone can even answer the much more constrained question of what it will take to transform sustainability education in our own domain of graduate education at a

research-focused institution. But, as part of a broader community we can – and like to think we have begun to – test new ideas, share what seemed to work and did not, and continue to adapt our own approaches. As we noted earlier, in the short time since we began to develop these courses, and even since we finished teaching them last spring, there has been a massive blossoming of new books and articles that we are learning from and will incorporate into our own work moving forward.

Four Key Takeaways

- As with almost all teaching, instructors will do well to meet students where they are, physically, intellectually, and emotionally. This process of meeting students where they are is not a one-time adjustment, but instead is an ongoing process of assessment and recalibration.
- The more time we allow students to

We conclude by noting some of the activities we are engaging in right now and anticipate being part of our lives in the months and years ahead. Clearly, learning from our peers and growing as instructors never ends. We feel fortunate to find ourselves in a broader network of like-minded educators and look forward to more informal and formal connections with people like Sarah Ray, Christine Wamsler, and perhaps readers of this case study. We will continue to use the experiences with COVID as a living model to help our students conceptualize, feel their way through, and problem-solve for climate change. The same is true of

cautionary lessons to be learned as university administrators like those at the University of Kansas seize on financial crises arising from COVID as ways to consolidate power and sometimes attack the essential workers of the institution. Finally, we will work to adapt the syllabi, assignments, and other materials we've developed to be used more broadly in professional development settings, workshops, and other venues beyond the traditional semester-length university course. [More information about the grant, the interdisciplinary Center for Compassionate and Sustainable Communities that has grown out of the grant, and the actual materials used in the courses can be found online at: <https://ipsr.ku.edu/compassion/index.shtml>]

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