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Environmental justice teaching in an undergraduate context: examining the intersection of community-engaged, inclusive, and anti-racist pedagogy

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Abstract

Since the early 1980s, the environmental justice (EJ) movement was critical in drawing much needed attention on how Black, Indigenous, People of Color (BIPOC), and low-income groups have experienced a disproportionate burden of environmental harms. This movement eventually formed the field of environmental justice, a multidisciplinary area of study that attempts to identify environmental injustices and provide theory and practice for their resolution. Despite the expansion of the EJ field and recent public attention, research shows that both EJ content knowledge and BIPOC students are isolated and excluded from Interdisciplinary, Environmental, and Sustainability (IES) programs within higher education. In addition, these studies have shown a relationship between EJ content and community-engaged practices with the inclusion of BIPOC students. This study sought to examine *how* and *why* EJ teaching and community-engaged pedagogies may be associated with inclusive or anti-racist practices by examining four faculty members teaching undergraduate EJ courses at four institutions. Using a multi-case study design, primary findings showed that faculty members held activist course objectives, which led to distinct community-engaged practices, such as the invitation of diverse guest educators, inclusion of readings from diverse authors, field experiences with EJ communities, and the integration of alternative ways of knowing that resist Eurocentric biases. The discussion and implications explore how these practices intersect with inclusive and anti-racist pedagogies, and provide recommendations for their implementation within the context of Environmental Studies and Sciences (ESS) in higher education.

Keywords Environmental justice · Community-engagement · Inclusion · Anti-racism · Curriculum and instruction · Pedagogy

Introduction

With an increase in recent awareness on how environmental issues inequitably harm Black, Indigenous, People of Color (BIPOC) and low-income groups, there is a critical need to better understand how the field of Environmental Studies and Sciences (ESS) addresses this issue at the classroom, program, and institutional level. A core component of this process is to acknowledge and address how systemic environmental racism has been replicated within higher education, where both students of color (Schusler et al. 2021; Taylor 2007) and environmental justice content (Coleman &

Gould 2019; Garibay et al. 2016) are isolated and excluded in a variety of ways in Interdisciplinary, Environmental, and Sustainability (IES) degree programs. In this study, I examine how environmental justice (EJ) and community-engaged teaching intersect with inclusive and anti-racist pedagogies to better understand their role in supporting BIPOC, low-income students, and other students from underrepresented backgrounds. Before describing the state of EJ content knowledge in IES programs and its impact on students from underrepresented backgrounds, it is first important to review how EJ differs from mainstream narratives of environmentalism from a historical context.

Modern American environmentalism began with White male advocates, such as Aldo Leopold and John Muir who focused on land conservation, habitat, and wildlife protection (Taylor 1996; 2002). However, Taylor (2002) explains how other environmental movements were occurring with less public attention and support. The White-dominant,

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mainstream environmental narrative excluded the voices and experiences of BIPOC, and low-income groups, pointing out how social group identity, combined with historic racism, classism, and sexism impacts which narratives receive political recognition (Taylor 2002; 2000). Distinct from the mainstream movements that focused on land and wildlife conservation, the experiences of BIPOC groups centered on social justice, loss of Indigenous land, waste incinerator placement, and toxic chemical dumping (Mohai et al. 2009; Taylor 2002).

Examples of recent issues include the construction of the Keystone XL pipeline in the Standing Rock reservation of the Dakotas (Gilo-Whitaker 2019) and the water crisis of Flint Michigan (Butler et al. 2016), which have negatively impacted Indigenous and African-American communities respectively. In addition, low-income, rural, White communities have also been affected by natural gas pipeline projects (Caretta & McHenry 2020), and coal mining-related issues such as impoundment failures (Greenberg 2020), and are subject to inaccurate representation (Perdue 2023) in areas of Appalachia such as Pennsylvania and West Virginia.

The exclusion of the experiences of BIPOC and low-income groups from the mainstream movement was and continues to be extremely concerning, as ample evidence dating back to the early 1980s now confirms these groups experience environmental burdens at much higher rates (Mohai et al. 2009; Agyeman et al. 2016). This evidence began with two large-scale reports: The U.S. General Accounting Office (USGAO) documented that African American communities held the burden of a disproportionate amount of waste facilities within their neighborhoods (USGAO 1983). In addition, The United Church of Christ (UCC) Commission for Racial Justice Report, *Toxic Wastes and Race in the United States*, documented the inequitable and discriminatory locations of toxic waste facilities across the U.S. (UCC, 1987). It was within the latter report that the term “environmental racism” was coined.

These reports formed the early work of the field of Environmental Justice (EJ) studies, which attempts to better understand how the world’s front-line communities are inequitably impacted by environmental issues, and seeks to provide theory and practice to implement solutions (Pellow, 2000). The EJ field began with quantitative methodology to document the disproportionate amount of toxins or waste incinerators in communities of color, but has since expanded both in methodology and scope. The field now utilizes a wide-range of qualitative methodologies and has spurred various other sub-fields such as food justice, global/transnational justice, climate justice, housing justice, and many more (Agyeman et al. 2016).

Despite this expansion, EJ is still more frequently than not ignored in the curriculum of Interdisciplinary Environmental and Sustainability (IES) degree programs across

higher education (Coleman & Gould 2019; Garibay et al. 2016; Schusler et al. 2021). In addition to the *quantity* of EJ content included in these programs, another factor is the *perception and experiences* of BIPOC and other underrepresented groups within IES programs. For example, Coleman & Gould (2019) provide a nuanced argument that explains how sustainability is still presented to students with an ecological focus and offered in natural resource departments, which tend to serve far less underrepresented students. This ecological and natural resource focus perpetuates the disconnect between mainstream environmental content and EJ content.

In fact, EJ and sustainability scholars have debated a nature vs people argument for decades (Agyeman 2004; Taylor 1996), but it does not mean that EJ activists or scholars place this in a zero-sum relationship. Instead, discussions of nature and broader ecological issues are of critical importance, but need to be contextualized as intersecting with issues of social justice, and examine the unjust historical components of American environmentalism. For instance, BIPOC, women, and low-income groups in some instances have been unable to access nature and recreational areas due to historic racism, sexism, and other discriminatory practices within these spaces (Taylor 2002). A curricular example may include a course that focuses on deforestation, and the loss of biodiversity, but does not include an adequate focus on the impact of deforestation on Indigenous peoples, and deforestation’s connection to historic and current forms of colonization.

A more recent study confirms how IES programs continue to focus on ecological/natural science issues isolated from social justice, where twenty-four BIPOC students within two IES programs reported feelings of isolation and exclusion due to limited conversations about race, a disconnect between social and environmental problems and an insufficient focus on global issues and EJ content overall (Schusler et al. 2021). Participants reported that the only place where they experienced a reprieve from these feelings was in the one EJ elective course. In addition, an earlier study showed that IES programs with greater compositional diversity and EJ content were more likely to report an increase in student of color enrollment (Garibay & Vincent 2018). These two studies reveal that EJ content and accompanying instructional approaches (community engagement practices were highlighted) may serve to better support BIPOC students. Research has also shown a general lack of diversity among faculty both across institutional type (Taylor 2010) and within the University of California (UC) and California State University (CSU) that lags behind student compositional diversity (Taylor 2022).

A critical reason to improve the diversity and inclusion of IES programs is to transform the pipeline and ecosystem of students moving from higher education into environmental

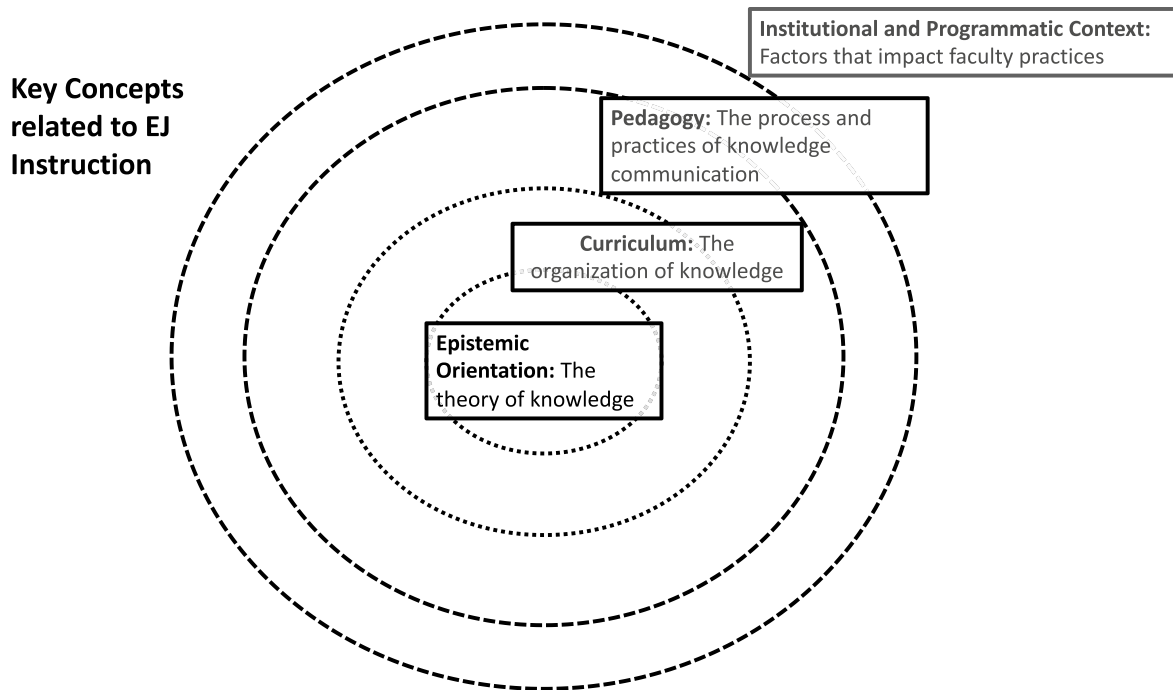


Fig. 1 Key concepts related to EJ instruction—adapted from Schön (1995) in Saltmarsh (2010)

organizations and careers, and help strengthen and expand the EJ focus within these organizations. Despite decades of work and advocacy, there is still a lack of diversity in all types of environmental organizations (conservation and preservation, governmental agencies, and environmental grantmaking foundations), both in gender and race, where gaps in race are much more problematic (Taylor 2014; Taylor 2019; Walter 2022). A dearth of diversity in the major environmental organizations continues the historical insufficient focus on EJ within environmental and climate action (Taylor 1996, 2000), and has caused EJ organizations to receive less grant funds (Taylor & Bondell 2023).

As Schulser et al. (2021) highlight, BIPOC students are more likely to be interested in the ways in which environmental problems are integrated with issues of social and environmental justice. This EJ frame is of vital importance for climate solutions to aid in the way policy makers, scientists, and other stakeholders listen to and include marginalized (EJ) communities in decision-making and outcomes. To give two examples, an EJ frame has been shown as a vital component for a just renewable energy transition (Levenda et al. 2021), and is also critical for inclusive science communication (Polk & Diver 2020). Without an EJ focus on environmental organizations, educational institutions, corporations, or government, there is a risk for a continuation and or exacerbation of the disproportionate environmental impacts on frontline communities.

In attempts to better understand the exclusion and isolation of EJ content, and BIPOC students in IES programs, I

examined EJ instruction in undergraduate courses at four institutions to better understand *how* and *why* EJ teaching and community-engaged pedagogies may be associated with inclusive or anti-racist practices. In relation to the above overlap of pedagogies, I explore how faculty activist and community-engaged course objectives inform practices such as the invitation of diverse guest educators, the inclusion of course content from diverse authors and activists, site visits and field experiences with community partners, and the integration of alternative ways of knowing that resist Euro-centric knowledge. The primary goal of this work is to reflect upon and share examples of these critical EJ pedagogies within the environmental studies and sciences across disciplinary and institutional boundaries.

Theoretical and conceptual framework

The theoretical and conceptual framework for this study (Fig. 1) was in part inspired by Schön (1995) and later (Saltmarsh 2010), who in a response to Boyer's (1990) book *Scholarship Reconsidered* argues that new forms of scholarship require a new "institutional epistemology" (p.34). This framework is drawn using concentric circles to depict how each aspect of knowledge (epistemology, curriculum, pedagogy, and institutional/programmatic factors) radiates outward into the subsequent circle. More specifically, I adapted Schön's framework to include how an instructor's approach

to teaching begins with an epistemic orientation (social identity, values, and beliefs related to knowledge) that informs curriculum (the organization of knowledge), and pedagogy (the process and practices of knowledge communication), which then aids in the forming of programmatic or institutional factors such as program climate, culture, rules and organization. Although one could argue that there is also a flow in the other direction (as once an instructor builds their curriculum, this might cause them to rethink their epistemic orientation), the concentric circles help connote that epistemology is the center of all processes, positing that a change in course or program epistemology will have the greatest impact in programmatic or institutional transformation.

As a way to interpret, and analyze my findings, I drew upon literature that arose from EJ instruction for the above areas of the framework. For the *epistemic orientation* area of the framework, I relied on work from critical race theory (CRT), EJ education, and alternative ways of knowing (Rendón, 2009; Polk and Diver 2020; Yosso 2005; Wilcox 2009). This literature describes the way in which EJ content knowledge and other forms of knowledge (such as knowledge from the global south) have been marginalized within the curriculum both with what is included, and how knowledge is communicated, learned, and produced. Examples of this include how rational/intellectual knowledge is prioritized over socio-emotional knowledge (Rendón, 2009), or the importance of knowledge emerging from community members and their lived experiences, as opposed to abstract theoretical knowledge (Yosso 2005; Wilcox 2009).

In the *curriculum and pedagogy* areas, I drew upon theory and research on community-engaged EJ instruction (Cachelin and Nicolosi 2022; Garibay & Vincent 2018; Darcangelis & Sarathy 2015; Morales-Doyle 2017), and inclusive or antiracist instructional theory in and outside of EJ (Kishimoto 2018; Sanger 2020; Taylor 1996). I define community-engaged pedagogy as referring to any kind of knowledge communication strategy inside or outside of the classroom that engages students with community members. In addition, this study touches on how including community knowledge as experts within the pedagogical process can create “dialogue about shifting the power differentials between academic institutions and community partners” and helps to “model respect, reciprocity, and power sharing” (Rubin et al. 2012).

In defining inclusive pedagogy, I describe teaching strategies that foster community and feelings of belonging among students across different spectrums of social identity. In various instances, I draw upon Sanger (2020) who defines inclusive pedagogy as “an approach that aims to make learning as accessible and welcoming to all students as possible” (p.32), and discusses how this is often in the context of creating an improved learning environment for students across racial,

gender, cultural, and socioeconomic backgrounds, as well as learners who are differently abled or have special needs.

To contextualize anti-racist pedagogy within the findings and discussion, I rely on Kishimoto’s (2018) definition which describes an anti-racist teaching approach and course delivery as a pedagogy that seeks to:

- (1) challenge [Eurocentric] assumptions and foster students’ critical analytical skills;
- (2) develop students’ awareness of their social positions;
- (3) decenter authority in the classroom and have students take responsibility for their learning process;
- and (4) empower students and apply theory to practice;
- and (5) create a sense of community in the classroom through collaborative learning. (p.546).

Finally, in the area of *institutional and programmatic support*, I was informed by literature that reviews lack of support, and or inclusion of EJ content in IES programs (Garibay et al. 2016; Schusler et al. 2021), or frameworks for institutional change in the context of climate justice (Kinol et al. 2023). This literature is critical to better understand how program and institutional stakeholders impact curricular and pedagogical practices, as well as program culture and climate. Issues such as tenure track position status, funding for community members, curricular freedom, program bureaucracy, and training for faculty are all necessary components of educational change, such as working toward an increased inclusion of EJ content knowledge and community-engaged or inclusive teaching practices within IES programs. These areas of the conceptual and theoretical framework formed a critical foundation for interpreting data collected that is covered in the next section on methodology.

Methodology

The primary research questions in this study included (1) How do EJ faculty members develop, organize, and implement their courses? And (2) How are EJ instructional practices connected to community-engaged, inclusive, or anti-racist teaching practices? To explore these questions, I employed a multi-case study design, where the cases were bound around each faculty member and their course(s). A multi-case study design is practical and effective for classroom research for several reasons. Multi-case study allows for the analysis of similarities and differences between cases (Yin 2003). This is extremely helpful, as the process of cross-case analysis can also lead to researchers developing theory, as Merriam (1998) explains that case studies go beyond merely describing phenomena, and instead may gather extensive data to create “a typology, a continuum, or categories that conceptualize different approaches to the task” (p.38). Finally, a case study is useful for research contexts where multiple forms of data are collected (Baxter and Jack 2008) such as classrooms where interviews, observations,

and documents are needed for a robust understanding of curricular and pedagogical patterns.

Sampling procedures and participants

I collected the data for this study in the Spring of 2021 during the COVID-19 pandemic for the duration of the academic semester. To find participants I used a process of snowball sampling with key informants. I selected key informants based on my local contacts in the EJ space, and this led to other key informants that were selected based on their years of experience in the field, their breadth of work and publications, and their connections with EJ scholars, and their interest and availability in connecting me with contacts. The first key informant was a former dean of the School for Environment at my university of employment from that time. The list of contacts they provided me landed two more key informants (two different tenure track professors in the local area), and from there, I began contacting potential participants in the list that included local, regional, and national EJ scholars and instructors.

Participant criteria included that each faculty member/instructor was (1) well-known by their peers for doing exemplary EJ scholarly work and teaching, (2) came from a variety of disciplinary and program backgrounds, and (3) taught undergraduate courses. After working with the list of contacts I described above, I was left with four participants whose demographic and home teaching institutions are described below in Table 1. Pseudonyms were used for all people and organizations in this study.

Methods of data collection and analysis

For a holistic exploration of faculty member instruction, I collected data in four areas including (1) two semi-structured 90-min interviews, (2) three observations of each faculty member's classroom lessons on Zoom (averaging 75 min) for a total of 12 observations overall, (3) collection of primary course documents (syllabi, course descriptions, and powerpoint lesson slides), and (4) photographs and videos from one faculty member's (Gabriela) site visits and field experiences with community partners. I shared interview transcripts, observation notes, and early interpretations of data with participants, as most of them expressed interest in receiving feedback on their teaching. This also served as a tool to see if my interpretations of their classroom practices were accurate. To store, manage, and analyze data, I used ATLAS ti., a data management and analysis software.

After all data were collected and stored, I was left with 32 documents to code. To begin the coding process, I created four large, deductive codes based on my conceptual framework labeled epistemic orientation, curriculum, pedagogy, and programmatic and institutional factors. While

coding documents with these deductive codes, I simultaneously began creating inductive sub-codes. For example, under epistemology, I created sub-codes such as activist experiences, and under pedagogy, sub-codes were created for different teaching strategies such as guest speakers, or mentorship. After coding, I was left with 119 codes that were tagged on 689 quotations. A summary of the main four deductive codes and the most salient (inductive) codes are included in Table 2 below. This table also provides a summary of the most important themes that emerged, and are discussed in the findings in the subsequent sections. With ATLAS ti., the search feature was used to find the most salient quotes that explored and answered the primary research questions, and the query feature was used to view quotes that were tagged with multiple codes. The most salient codes ended up as the primary sections and themes in my findings.

I was also able to triangulate the data by reviewing how faculty described their teaching practices in their interviews, and then comparing it to what I saw in their classroom practices, and what was listed and described in their course documents. During this process, I developed a comprehensive understanding of the key practices, methods, and patterns that each faculty member employed in their course(s). I was also able to see how faculty enacted their epistemic orientations (values, beliefs, learning objectives) through their curricular and pedagogical practices.

Findings and discussion

The findings and discussions section is organized into two main areas. The first area entitled *Faculty epistemic orientations* includes two subsections: (1) *Personal and professional activist epistemic orientations* and (2) *Activist and community-engaged learning goals*. The goal of this first main area is to discuss the findings in relation to the inner circle of epistemic orientations shown above in the conceptual framework (see Fig. 1). More specifically, a salient theme that arose across all faculty member cases during the first interviews was experiences, values, and beliefs related to activism at both personal and professional levels. These personal and professional activist epistemic orientations are described in the first sub-section. As the study moved along, I noticed that many of them espoused activism, community-engagement, and student participation in social change within their teaching and learning objectives. These goals were expressed both in their syllabi and through dialog in interviews, and are outlined in the next subsection and depicted in Table 3 below. Once classroom observations began, I observed how faculty enacted these differing levels of activist and community-engaged goals through a wide-range of curricular and pedagogical practices.

Table 1 Participant demographics

Faculty member	Disciplinary expertise	Salient social identities	Institution	Faculty position	Years of experience
Samuel	Environmental sustainability and community development	Brazilian, activist, multi-racial, Person of Color, etc	Urban Public University (UPU) , a 4-year, urban public university on the East Coast	Associate Professor	25+ years of teaching in general 3–4 years of teaching EJ
Darren	Sociology	White man, Appalachian	East Coast Private (ECP) , a 4-year, prestigious private university on the East Coast	Full Professor	25+
Gabriela	Feminist and Women's Studies	White, women, queer, feminist	City Semester Program (CSP) , an off-campus, semester intensive program that focuses on urban issues located in the Midwest <i>and</i> Local State University (LSU)	Program Director and Instructor	10
Paul	Sociology	Human, cisgender, heterosexual, male, upper-middle class, African American, multi-racial, etc	West Coast Public (WCP) , a 4-year public university in the central West Coast	Full Professor	25+

Table 2 Four large codes and most salient sub-codes

Main codes	Sub codes
Epistemic orientations	<ul style="list-style-type: none"> Personal activist experiences Professional activist experiences Student learning goals for activism and community engagement Community-engaged mentoring goals Goals to apply theory to societal action and change Goals for a paradigmatic shift and transformational change
Curriculum	<ul style="list-style-type: none"> Focus on capitalism and theoretical tools Content designed around community engagement: decolonial field methods, and site visits
Pedagogy	<ul style="list-style-type: none"> Critical lecture Engagement and encouragement of protest and activism Process for community partnership building Practicing decolonial research methods Student-directed, community-engaged, and experiential final projects Guest speakers and educators Collaborative research laboratory
Institutional and programmatic barriers and supports	<ul style="list-style-type: none"> Bureaucratic barriers for community engagement Access to funding Expectation/mission to engage in community partnerships Tenure status Lack of community-university relationships and support Lack of training Lack of focus on EJ content knowledge in program

Table 3 Faculty primary student learning objectives

Faculty member	Primary learning objectives (interviews and syllabi)
Darren	Interview: I think a big way that I want to try and teach this and convey this information is this notion of citizen empowerment, that really convey to the students that you have the power to make changes, and with many of the institutions that you deal with, whether you work, live, or play, and that all these changes add up Syllabus: The purpose of this course is to analyze in both empirical and theoretical terms the current state of the global environment and ecological politics
Samuel	Interview: I always try to do that, to encourage them to become more active... So, to me, I believed the students realized this not only by what I talked to them, but also, I believe they feel it. This is at the level of the skin. They feel that when I say this stuff, this is not something that I learned in the book Syllabus: The goal of the course is to give students the ability to develop and articulate informed opinions about environmental justice, to understand how the concept came into use, and to think critically about measuring and solving environmental justice problems
Paul	Interview: I feel like everything or most of the things I'm doing, I'm hoping are leading in some way to improvement for people's lives, for our life support systems, our ecosystems, and I encourage my students to do that very explicitly in the class... My hope is that it's not just about a grade. It's about students getting something from this class that they can take into their lives that lives with them, lives on after the class Syllabus: How do we—as individuals and groups—contribute to ecological harm and how might we be a part of solutions to socioenvironmental crises? How shall we rethink, rebuild, and recast our relationships with the more-than-human-world, the biosphere, and our shared ecosystems? How can we push beyond the limits of sustainability in both theory and practice through our everyday behaviors and direct action?
Gabriela	Interview: One objective is that there is an actual contribution that supersedes students themselves Syllabus: By experimenting with a multitude of decolonial field methods and investigating dozens of approaches to environmental justice, students work to intervene in systems of injustice and ecological destruction by redistributing power through physical, scholarly, and financial contributions

Related to the curricular and pedagogical practices, the second and larger area of the findings and discussion is entitled: *A continuum of community-engaged EJ instruction*. This larger section is accompanied by Fig. 2 and then proceeds to discuss and analyze the different sections of the continuum throughout the subsections. The subsections include (1) *Continuum overview*, (2) *Towards integrated justice*, (3) *Integrated justice*, (4) *Towards embodied justice*, and (5) *Embodied justice*.

To provide more context on the origins of the continuum, after reviewing my conceptual framework, and thinking about the extent to which each faculty member implemented community engagement into their course design, I began placing these different curricular and pedagogical practices within X- and Y-axes to depict this. The outcome of this process was the development of a continuum for community-engaged EJ instruction, which is in Fig. 2. A substantial component of the analysis during the subsections focuses on how EJ community-engaged instruction intersects with inclusive and anti-racist teaching practices with the goal of better understanding how to better support underrepresented students in IES programs (Schusler et al. 2021).

Faculty epistemic orientations

Personal and professional activist experiences

One of the overarching findings of this study was that all participants reported being connected to activism at both personal and professional levels. To give some examples of personal activist experiences, Darren told stories of growing up in an activist family in Appalachia where his father was an anti-segregation lawyer. Samuel spoke of getting involved in protests, graffiti, and even getting arrested as a young adult in a dictatorial political context in his home country, Brazil. In addition, Gabriela gained momentum for her future in community organizing by participating in an AIDS walk with the local queer activist community, while Paul spoke of having a family that was involved with the civil rights movement.

Faculty members also reported different ways activism informed their EJ teaching or scholarship. For instance, Darren started an environmental organization in Nicaragua, which led to early scholarship that was focused on global EJ issues in Latin America. Paul got involved in a community organization on the South side of Chicago that led to his dissertation work. In contrast to Paul and Darren, Gabriela

discussed how EJ studies and other disciplines such as Indigenous, feminist, LGBTQ, gender, and sexuality studies are the result of activism. As she stated: “These are the kinds of fields of knowledge that were never intended to be in the academic institution in the first place. We had to fight tooth and nail to get there.” This quote foreshadows Gabriela’s teaching philosophy, which also focuses on resisting Eurocentric academic ways of knowing.

Activist and community-engaged learning goals

These activist epistemic orientations formed the foundations for their student learning objectives, which I have called “activist and community-engaged learning goals.” I define these as having a focus on community-engagement, student action, and social change. These learning objectives (especially in the case of Samuel, Paul, and Gabriela) focused on understanding environmental justice issues and theory with a large focus on identifying, understanding, and addressing solutions in the community or with collaboration with community partners. Table 3 provides a detailed look at learning objectives from interviews and course syllabi.

These findings indicate to a large extent that the four faculty members prioritize student action and engagement with EJ issues. However, there are nuanced differences in the specificity and level of student community-engagement expressed in these goals. For example, whereas Darren and Samuel discuss “student engagement” and “becoming more active,” Paul uses terms such as “participate” and “direct action” and Gabriela specifically states that students will “intervene” through “physical, scholarly, and financial

contributions.” To describe how faculty members advanced these goals through their curricular design and implementation of pedagogical strategies in the classroom, I developed a continuum of EJ community-engaged instruction (see Fig. 2 below) where the common focus on activism and community engagement provided a lens through which to compare their curricular and pedagogical approaches.

Continuum of community-engaged EJ instruction

Continuum overview

To organize the areas of the continuum (shown in Fig. 2), I first drew upon conceptualizations of environmental justice (Schlosberg 2013), such as participative, representational, epistemic (Ottinger 2024; Temper & Del Bene 2016), or even transformational forms of justice. As for some faculty members, meeting with diverse members of the community was extremely important, which demonstrates aspects of participatory or representational justice described by CRT or EJ scholars (Schlosberg 2013; Yosso 2005). I then combined the notion of enacting justice with scholars from my conceptual framework that describe historical problems within traditional academia related to how knowledge is both valued, communicated, and learned (Rendón, 2009; Wilcox 2009).

The section of the continuum to the far left, entitled *Pedagogy of Separation* was informed by Rendón’s (2009) book *Sentipensante (Sensing & Thinking) Pedagogy*, which describes various unstated and pervasive Eurocentric problems that continue to stifle more inclusive and anti-racist teaching practices

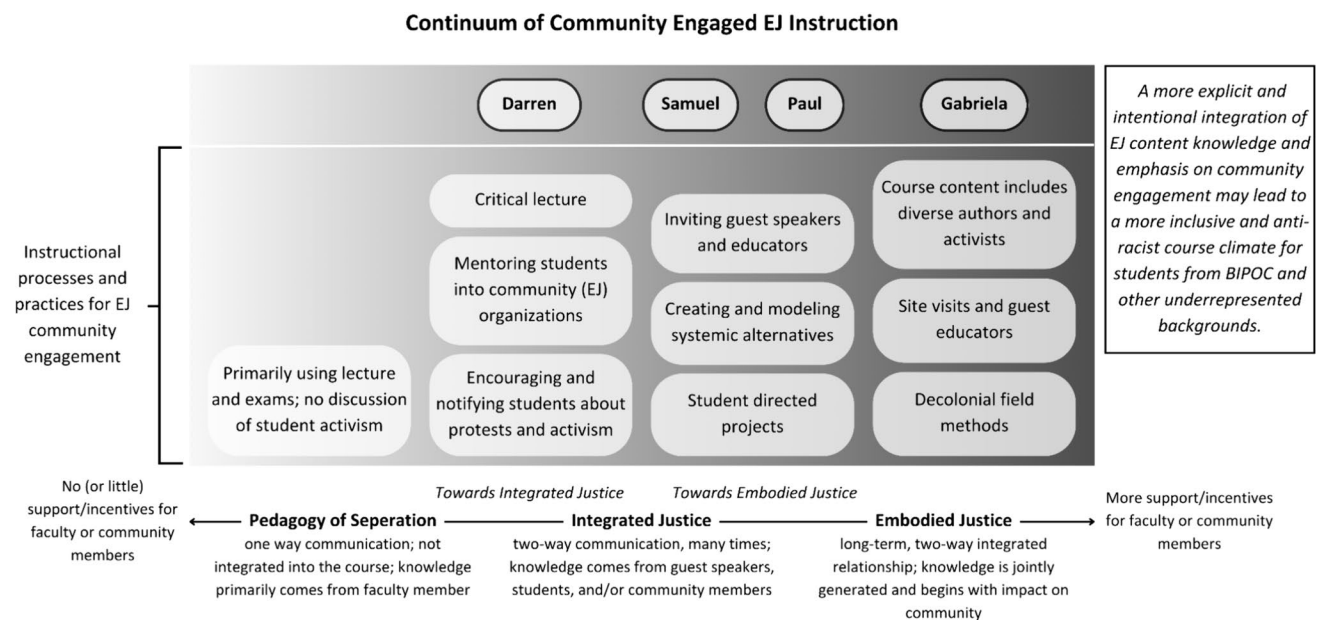


Fig. 2 A continuum of community-engaged EJ instruction

across higher education. One of these agreements is entitled *The Agreement of Separation*, which refers to how in many spaces within higher education learning continues to occur “separately” from the learner, instructor, and community. Aspects of separation include (1) linearity of teaching and learning, (2) faculty occupying the role of sole expert, (3) little to no personal communication between student and faculty, and (4) the use of only one discipline within course assignments/projects.

This agreement is useful to describe pedagogical practices that may decontextualize (Rendón, 2009) learning, where there is little connection or application of theory and knowledge to real-world issues. Although none of the faculty members were placed directly in this area of the continuum, it was important to delineate this section, as this kind of teaching (which remains pervasive), can miss the opportunity to provide opportunities for other ways of knowing and learning (including practices of community engagement) that can be helpful for students from BIPOC or low-income groups (Polk & Diver 2020; Rendón, 2009).

In contrast, the area on the right side of the continuum is entitled *Embodied Justice*, and was first inspired by a conversation with Gabriela during our first interview when she stated: “I believe that teaching environmental justice is not the same thing as doing it.” Similar to Renee Descartes’ mind–body divide, this quote describes the problematic disconnect between academic teaching and learning and real-world issues impacting community members. Later, this section was further developed with Wilcox’s (2009) concept of “embodied ways of knowing” or “embodied pedagogies,” which refers to ways of knowing that stem from the body such as feeling, sensing experience, creativity, and performance, which aids in describing Gabriela’s practice of decolonial field methods. Wilcox’s (2009) concept of embodied ways of knowing echoes CRT (Yosso 2005 see tenet of experiential knowledge) and EJ scholars (participative justice) that also discuss the importance of including community member first hand knowledge in the learning process. For Gabriela, the faculty member discussed in the “[Embodied justice](#)” section of the continuum, the inclusion of community members and their ways of knowing was a foundational aspect of her course design and pedagogical methodology.

The section in the middle of the continuum labeled *integrated justice* refers to practices that fall somewhere in between *pedagogy of separation* and *embodied justice*. The following subsections will move through the above areas of the continuum describing differing curricular and pedagogical practices employed by faculty with discussion of how and why these practices engage EJ community members and how they may intersect with anti-racist or inclusive teaching. This discussion is meant to provide useful examples, practices, strategies, and tools for the integration of EJ curriculum and pedagogy across the environmental sciences and studies.

Towards integrated justice

On the left side of Fig. 2 (see above), The continuum begins with key practices identified in Darren’s course of 115 students which included critical lecture and mentoring of students. Darren’s lecturing style was described as “critical” due to the focus on the US government and multinational corporations as problematic organizations that through policy and military intervention, have systematically exported environmental hazards from more privileged communities to more vulnerable ones, both domestically in the US and internationally. Darren also emphasized an approach to his lecture which worked towards providing students with “theoretical tools” where he explained:

I think that’s the most important thing about my class, quite frankly, is that I’m giving them the tools of analysis. I’m empowering them to be able to make these analyses of whatever issue they care about, and we just cover the gamut. Theories of globalization, the contradictions of liberal or of neo-liberal regimes of environmental regulations, theories of technology, theories of consumption and what’s problematic about them, externality theory, a lot of political economy.

In one class lecture I observed, Darren included student-recommended content. This video featured a story of how a prominent oil company was destroying Indigenous land in South America and profiled one American lawyer’s experience of prosecuting this case. The use of student material may point to a possible pattern where Darren takes students’ interests into account and integrates them into his lectures. Integrating student-suggested content into lectures represents at least one more inclusive strategy that may create a smaller classroom feel within a large lecture-style course (Lynch & Pappas 2017).

During interviews, Darren talked passionately about his role and interest in mentoring students, a key practice to communicate content knowledge to students one-to-one. However, although mentoring can be used as a pedagogical strategy explicitly designed to provide a more inclusive classroom space for underrepresented students, the strategy in this case was instead used to help students connect with local environmental community organizations where Darren holds a variety of roles. Darren’s primary instructional approach of lecturing left him often occupying the role of sole expert (Rendón, 2009) where knowledge transfer happens primarily from professor to student, as opposed to bi-directional or multi-directional where knowledge is communicated from student to professor or from student to student, which has been identified as an important component of inclusive teaching (Sanger 2020).

Although Darren is very active in non-profits and within community organizations focused on local EJ issues, these organizations or members do not have a prominent role in

his course. This is consistent with Rendón's (2009) agreement of separation, where even though the community is a critical aspect of a professor's work, it remains separate or isolated outside of the learning process. Darren views the support of his university as mixed. It has recently pushed to expand EJ focus, but he views his own large course as a hindrance to pedagogical innovation.

Overall, this set of practices were not particularly focused on student inclusion or community engagement, and for this reason, Darren and his course were placed at the edge of the *pedagogy of separation* area of the continuum. To summarize, key curricular and pedagogical practices identified in this area were:

The use of critical lectures that focused on providing students with a collection of theoretical tools to analyze complex EJ issues.

Including student-suggested content within lecture and classroom activities.

Mentoring as a key practice; but not done with inclusive instruction in mind.

Although Darren encouraged students to engage in action and democracy during his lectures, he did not provide explicit options for this during classroom activities or assignments listed in the syllabus.

The next section will primarily focus on the use of guest speakers and moves one step to the right of the continuum (Fig. 2), to explore the area of *integrated justice*.

Integrated justice

The pedagogical practice that distinguished this area was the invitation of guest speakers, which marks a key pattern across three of the four cases (Table 4 displays three guest speaker activities). Guest speakers represent a window into community-engaged and anti-racist teaching because they can create a community of practice (Wenger-Trayner et al., 2015) between students and guests. As Kong (2018) states "the beauty of this approach is to allow and encourage connections among people across organizational and geographic boundaries." An important result of this community of practice is that the guest speakers often take on the lead-role, while the faculty member can take on the role of facilitator. For example, Paul mentioned, "it gives the students in the class a break from just hearing me all the time and to break things up a little bit." Kishimoto (2018) describes decentering authority in the classroom as a core component to an anti-racist instructional approach, but also acknowledges that this should be complicated depending on the social identity of professors and students since faculty of color may face

Table 4 Invitation of guest speakers

	Samuel	Gabriela	Paul
Class session topic	Worker Rights and Safety	Collaboration and Research between Tribal Nations and Universities	Sustainable Communities and Systemic Alternatives
Guest educator	Melissa Rodriguez, Latinx Coordinator of a National Worker Rights Organization	Matt Daniels, a professor of forestry and member of the Potawatomi Tribe	Frank Johnson, a sociologist professor colleague and student organizational leaders of community organization: <i>Green View</i>
Key quote	"I believe it was good for them to see People of Color who led organizations, who work in these organizations, because if not, it becomes very theoretical."	"I think we're building a way: we're building a practice of working through justice or on behalf of justice, by spotlighting underrepresented voices, by taking underrepresented ideas seriously and trying them on by learning in place"	"Green View is right next to campus. So, there's a real, non-abstract grounded sense, that this is not theoretical, that it makes a difference and that this is an opportunity for other students to get involved in."

more challenges when it comes to decentering themselves within the classroom.

Cann and Demeulenaere (2020) in referencing activist pedagogy point to the importance of identity and “how it is defined, considered, and navigated in classroom spaces.” In relation to faculty social identity, when I asked Gabriela about how she got started with integrating a community-engaged model of teaching, she talked about how her social identity as a White woman was a key motivating factor in her switching from a more traditional lecture-based course:

But the more and more I got into EJ, especially as a White educator, it struck me that this was not enough... I cannot speak from first person experience of environmental injustice. So that changed. That meant that I would have to take on a different kind of role. I'd have to be a facilitator; I'd have to be a redistributor of power.

More so than any other faculty member, Gabriela was extremely aware of her positionality and its impact on her teaching, which is described as another important tenet in anti-racist teaching (Kishimoto 2018) and also a key aspect of inclusive science communication (Polk & Diver 2020).

Guest speakers may also play a role in providing representational justice within an EJ course. Samuel's quote (shown in Table 4) conveys how it was important for him for students to see people of color who work and lead in these organizations, as a way to move from theory to real-world practice. These ideas are also echoed by Yosso (2005) who describes a tenet of CRT as: *The centrality of experiential knowledge*. From this lens, guest speakers represent critical experience from the field and can share personal stories directly from their experiences engaging in EJ work, as opposed to merely reading about EJ issues and theory through text.

Samuel's point about showing students of color examples of people of color working in these organizations is a critical area of need, as environmental organizations continue to lack compositional diversity (Taylor 2014; 2018). Samuel may be more aware of this working at a public, urban university with a majority population of students of color. During our interviews, Samuel spoke passionately about his experiences working with communities on EJ issues, and his strong desire to engage his class with community partners. However, Samuel spoke of various institutional and programmatic impediments including a lack of focus on EJ in general within his program, and very little support or initiatives for community-engaged teaching, or faculty development in general. This may explain why Samuel's only practice associated with community engagement was the integration of various guest speakers during his course.

This section focused primarily on the key instructional practices below:

The invitation of guest educators as ways to demonstrate to students how EJ is enacted in real-world scenarios.

Guest speakers of color can provide a component of representational justice within the classroom, which can show students of color career and professional pathways in EJ organizations.

Decentering the instructor. This is a component of anti-racist instruction (Kishimoto 2018), and allows connections across “organizational and geographical boundaries” (Kong 2018).

The next section, *Towards embodied justice*, moves one more step to the right of the continuum (see Fig. 2 above), and outlines practices such as student-directed projects and creating and modeling systemic alternatives.

Towards embodied justice

This section outlines Paul's practices of student-directed projects and creating and modeling systemic alternatives. These practices were placed into the “[Towards embodied justice](#)” section in Fig. 2 (see above) because they provide more frequent and structural opportunities for students to engage with community members, to foster more inclusive learning environments, and to contribute personally to EJ solutions.

One innovative aspect of Paul's course is how he provides options for student-directed final projects. As Paul explained: “I have students do final projects where they have a choice between an artistic project, a community-based project; they can do a term paper, an analytical paper. They can also do what I call a strategy paper.” Examples of projects that students completed include the creation of organizations in the community (one of these was the organization Green View, which is described below), a strategy paper to the board of education of Seattle that argued for more environmental curriculum in schools, and artistic projects such as children's EJ books.

Student-directed projects (with instructor scaffolding and feedback) can provide students with a way to choose a project that is tailored to their interests and strengths at both a personal and academic level. In addition, student-directed learning has been shown to lead to student accountability, and provide an experiential learning context for students (Breunig 2017). However, students report that if they are not ready or “thrown in the deep end” (Breunig 2017 p.220) that student-directed assignments can be challenging. For this reason, faculty members should engage in student-directed projects with care, learn about student prior experience with this kind of learning, and make sure to provide clear instructions, scaffolding along the way, and examples of previous projects (Breunig 2017).

Paul provided examples of previous student projects, something I described as “modeling systemic alternatives.” In one instance, a group of students continued their project into another course, and with that faculty member (Frank Johnson) went on to establish a community organization called Green View. Green View is a student-run organization that focuses on sustainable agriculture, circular economy, art and community organizing in hopes to be a regenerative, collaborative, and sustainable hub near the university. In a class session I observed, Paul brought these students and Frank Johnson into the class to describe their experience. For example, Frank Johnson commented: “Creating organizations is a new kind of pedagogy; we cannot do business as usual. We have to build the new world that we want. Green View is like that—a systemic alternative.”

Paul’s course provides opportunities for students to engage in critical consciousness development (Freire 1970; Ladson-Billings 1995). Seider and Graves (2020) explain that three components of critical consciousness are (1) social analysis, (2) political agency, and (3) social action. Paul’s course begins with a discussion of various different EJ theories, which describe how social, racial, economic, and other social issues are interconnected with ecological problems. Then, through the course, Paul allows students to feel like they have agency through learning about different student and community projects that are creating change. Finally, Paul provides options for students to create change through their final project.

It is important to note that Paul (who was hired by the department as a full-professor) reported a high-level of support from his program and institution, and was hired specifically to engage in EJ teaching and community engagement. Paul also discussed how he was able to have some department funds to pay community members who were collaborating with him in both research and teaching. This is a critical finding, as Paul and Gabriela both received substantial institutional or programmatic support, which in this study, had a positive association with the ability or freedom to implement more community-engaged instructional practices.

To summarize, this section focused the practices outlined below:

Providing multiple final project options that meet students’ interests and level of expertise.

Student-directed final projects.

Modeling examples of previous final projects, and impacts in the community; which a guest educator (Frank Johnson) defines as creating “systemic alternatives.”

The stages of Paul’s course follow Seider and Graves’ (2020) (and Freire’s 1970) components of critical consciousness development.

The next section, entitled *Embodied justice*, moves to the far right of the continuum (Fig. 2 above) and focuses on Gabriela’s key curricular and pedagogical practices.

Embodied justice

As described above, the term *embodied justice* (see Fig. 2 to reference its place in the continuum) stems from both Gabriela’s interest to connect the divide between academia and the community and Wilcox’s (2009) notion of embodied ways of knowing, which “signals an epistemological shift that draws attention to the bodies as agents of knowledge production” (p. 105). This is a critique of Eurocentric knowledge that often separates the mind and body and favors abstract, rational knowledge over socioemotional, kinesthetic intelligences, or “Other(ed)” ways of knowing (Thambinathan & Kinsella 2021). In various ways, Gabriela reimagines her entire EJ program around community engagement, community member voices in the curriculum, and the integration of novel forms of knowledge production, which she refers to as Decolonial Methods. For these reasons, Gabriela was placed in the *Embodied Justice* area of the continuum.

In contrast to Samuel or Paul, Gabriela has worked for decades to build community partnerships and make them a focal point to the course design with the primary objective of contributing to the EJ movement (described in Table 3 above). Gabriela describes this here:

So, I don’t start off with a [community] partnership thinking, “What should students learn out of this?” Right? Instead, it’s how can we service the EJ movement? What are we doing to build the movement? And then I go back and say, “Okay, what did we learn about method from this? Or what did we learn about science from this?..That maybe, is part of the difference between a service learning model and a thoroughly community engaged-model where you’re working on behalf of the movement.”

This process has led to a semester of three courses where students engaged in approximately 17 site visits with 50–60 guest educators. Site visits included places such as sacred Indigenous sites, a marina, a water protector welcome center (the site of pipeline resistance), parks and recreational spaces, an early childhood institute at a local state university, a women’s environmental institute, an animal farm sanctuary, a bike tour, and public gardens. Gabriela’s community-engaged course design embeds a multitude of varied learning opportunities with community members from a diverse array of sociocultural backgrounds. This community-engaged course design is similar to other researcher-pedagogues who have argued for this kind of approach to EJ teaching (Cachelin & Nicolosi 2022; Darcangelis & Sarathy 2015; Morales-Doyle 2017; Polk & Driver 2020).

Learning activities that are “place-based,” “spotlight underrepresented voices,” and feature interaction with community members provide learning that is “relational” and “embedded in practice” (Ollis 2020, p.219). In addition to these field experiences, Gabriela is intentional with incorporating texts from diverse authors and activists by using the book *All We Can Save* (Johnson & Wilkinson 2021) over twenty-five times in her three courses. The *All We Can Save* book and project is rooted in disrupting and transforming the leadership structure in the climate justice movement from mainly White men to one that much more equitably includes women of color. The use of diverse authors and sources within courses represents another important strategy for inclusive (Sanger 2020) and anti-racist instruction (Kishimoto 2018).

Gabriela also attempts to resist Eurocentric methods of knowledge production by incorporating Decolonial Methods into one course entitled Field Methods. Kishimoto (2018) describes resisting Eurocentric course content as another critical component of antiracist pedagogy. These methods were used in several lessons with titles such as “build, feel, listen/tell, sense/taste and paddle.” Gabriela discussed how the first step in her Fields Method’s course was to critique dominant colonial and Eurocentric methods, and then experiment with methods that are:

...Informed by traditional ecological knowledge or non-Eurocentric, Northern ways of conducting research. And they can be pretty experimental. Sensing is one of the research methods that we’re bringing to the table. So, what are the emotions of environmental justice? What are the senses of environmental justice?

This curricular and pedagogical practice represents another important strategy for more inclusive and antiracist teaching, as it can communicate to students that another way to solve climate and environmental justice issues is to prioritize modes of knowledge creation (not just static knowledge) from women and BIPOC groups, who continue to be most affected by environmental issues across the globe. In an article that discusses how EJ can help foster more inclusive and equitable science communication, Polk and Diver (2020) describe many of the practices implemented by Gabriela; including, inviting guest educators from minoritized communities to teach both instructor and students, asking students to focus on the experience of these communities, and encouraging collective action.

It is very important to point out that one reason Gabriela could engage in this extensive amount of community-engaged teaching was because she was given support and freedom at City Semester Program (CSP). CSP is a higher education consortium that brings students together for credit courses from a variety of institutions for one semester, where Gabriela was not confined to tenure-track guidelines. In

fact, Gabriela described two experiences teaching EJ: one at The Local State University (LSU)—a context of low support—and one at CSP—a context of high support. Gabriela mentioned that due to bureaucracy and lack of funding for guest educators, she was unable to do this kind community partnership work at LSU. While at CSP, Gabriela discussed how there was an unstated norm that community engagement should be a key focus in teaching and learning, and how she received funding to pay guest educators one hundred dollars an hour for their time. Finally, CSP explains on their website that their key values are rooted in experiential learning, holistic learning, and interdisciplinarity learning that integrates theory and practice. This is a critical finding that highlights the role of programmatic and institutional support and culture to provide a context for more innovative and inclusive pedagogies, such as community-engaged instruction.

To summarize, this section on *embodied justice* focused on Gabriela’s key instructional practices which included:

A course design that prioritizes the outcomes and relationships with EJ community patterns.

The integration of 50–60 guest educators and approximately 17 site visits.

The use of course resources from primarily women and people of color.

Experimentation with decolonial methods; a form of knowledge production that resists Eurocentric forms of learning.

Gabriela experienced a lack of support at a large state school, and much more flexibility and support at the non-profit educational consortium.

I now move from findings and discussion and an analysis of the curriculum, to the next section which provides detailed implications and recommendations for both environmental educators and program stakeholders.

Implications and recommendations for environmental educators and program leaders

This section builds off the above discussion of the continuum by providing specific recommendations and implications for environmental educators and program leaders within IES or ESS program contexts. These implications fall into each category of the conceptual framework by connecting to educator epistemic orientations the kinds of content knowledge included in coursework, pedagogical practices, and institutional and programmatic factors. Below, Table 5 highlights the main recommendations discussed in this section.

Table 5 Key recommendations for environmental educators and program leaders

1. Engage in critical reflection of social positionality (Kishimoto 2018; McManimon & Casey 2018; Polk & Diver 2020; Sanger 2020)
2. Include diverse content knowledge (Polk & Diver 2020; Johnson & Wilkinson, 2021; Kishimoto 2018; Sanger 2020)
3. Invite guest educators and include strategies for learning that resists Eurocentric knowledge (Kishimoto; 2018; Yosso 2005; Wilcox 2009)
4. Explore EJ as a tool to provide social implications in STEM focused courses (Doucette et al. 2023)
5. Attempt to center community and build reciprocal community partnerships (Cachelin & Nicolosi, 2022; Mitchell 2008; Rubin et al., 2012; Temper & Del Bene, 2016)
6. Advocate for change and support at the program and institutional level for this work (Kinol et al. 2023)

First, when implementing critical consciousness as a framework, instructors should engage in critical reflection of their own social positionality, and consider discussing this with their students because instructor awareness of their social identity (Polk & Diver 2020; Kishimoto 2018) and recognition of individual power (Sanger 2020) have also been identified as a crucial aspect to inclusive and anti-racist teaching. Reviewing Gabriela's quote above (in the "Integrated justice" section) reveals that critical self-reflection is important to begin decentering oneself, which models to students the role of identity in EJ issues, and the need to bring in guest educators who may have more direct experience with EJ issues. However, racism and other forms of oppression will still persist due to the embedded nature of Whiteness in higher education, specifically in environmental education, (Cabrera et al. 2017; Cachelin & Nicolosi, 2022), and the fact that racism is endemic to society (Delgado and Stefancic 2023). For example, research has shown that there is very little work on the role of professional development to help White instructors build anti-racist consciousness and teaching practices (McManimon & Casey 2018). In addition, researchers show that anti-racist instructional practices are in a constant state of "becoming" (p.395). These findings highlight that although White instructors may have good intentions and seek to become anti-racist practitioners, there can still be large gaps between intentions and outcomes. As such, this form of instruction needs to be understood as an on-going process that will require responses to many different challenges at the classroom and institutional levels.

Second, environmental educators should include diverse content knowledge in their courses, which has also been identified as a key tenet of inclusive and anti-racist instruction (Polk & Diver 2020; Kishimoto 2018; Sanger 2020). Closely connected to this recommendation is the use of EJ content and authors within environmental education courses. EJ content will include a focus on how minoritized groups are working to address environmental issues that have impacted their communities in disproportionate ways. This content will also have a greater focus on power dynamics, theory on social identity (such as intersectionality) (Maina-Okori et al. 2018), and theory of social change (Taylor 2000) or forms of justice (Agyeman 2016; Mohai

et al. 2009; Schlosberg 2013). Instructors interested in texts on the climate crisis from diverse authors could start by reviewing and incorporating the text *All We Can Save* (Johnson & Wilkinson 2021), and a new resource from the University of California Berkeley's Just Environments Lab called *The Climate & Environmental Justice Syllabus*, which features a searchable list of BIPOC authors.

Third, instructors can include guest speakers in the course that come from diverse sociocultural backgrounds (Polk & Diver 2020), as this may provide the added benefit of representational justice, and the ability for students to hear from direct, first-hand experiences (Yosso 2005; Wilcox 2009) from EJ or community organizations. Although more complex than adding diverse content or guest speakers, instructors should also consider infusing their course with ways of knowing that are alternative to traditional academia. For example, as research on climate anxiety among environmental educators and students emerges (Pikhala 2020; Ray 2020; Verlie et al. 2021; Wallace et al. 2020), strategies for teaching emotional well-being and resilience that stem from psychology, mindfulness, or spirituality studies should be explored as critical components to any course that addresses climate or environmental issues. Educators should critically attend to how climate anxiety or distress may be experienced in inequitable ways by people across the world depending on their social identities. Instructors could also explore activities that center artistic (Wilcox 2009), kinesthetic, or community organizing (Ollis 2020; Lowan-Trudeau 2017) or other modes of knowledge production that resist Western, Eurocentric biases.

Fourth, the field of Environmental Studies and Sciences (ESS) contains many faculty members and program leaders that are trained in the hard sciences and STEM areas where EJ content knowledge has been less likely to be included (Coleman & Gould 2019; Garbiay et al. 2016). However, there is a growing body of research that discusses integrating EJ into STEM disciplines where there are many insights and strategies to draw from. For example, work explores using climate justice and community engagement as a key framework for teaching STEM content (Doucette et al. 2023), integrating environmental justice in undergraduate chemistry as a tool to "draw connections between real world, social, ecological, and economic systems" (p.288), using energy justice pillars as a framework

for a physics in highschool curriculum (Hernandez et al. 2022), and the need to include EJ in engineering both as a framework for community-engagement (Cohen, 2020) and to center climate change and issues of social justice (Martin et al. 2022). This emerging body of research points to a trend and realization among STEM practitioners that including EJ can provide a more relevant and community-engaged approach to teaching that can lead to improved learning gains (Doucette et al. 2023) and more inclusive and equitable framing of science communication (Polk & Diver 2020). As such, faculty from the natural sciences or STEM areas could think about adding EJ as a key framework or context from which to better integrate the social implications into research projects (Doucette et al. 2023).

Fifth, environmental instructors or program leaders should consider centering community and community partnership in their development of courses to create more inclusive climates. The use of community-engaged instruction has been shown to be a core aspect of environmental justice instruction (Cachelin & Nicolosi 2022; Darcangelis & Sarathy 2015; Garibay & Vincent 2018; Morales-Doyle 2017; Polk & Driver 2020) and inclusive or anti-racist pedagogy (Polk & Diver 2020; Kishimoto 2018). Community-engaged pedagogy may foster inclusive environments for learners because guest and community member educators may come from diverse backgrounds (Polk & Driver 2020), site visits and field experiences provide varied teaching techniques and formats, activities and different modes of expression (Sanger 2020), and it may encourage peer-to-peer learning that happens in a setting that is contextualized in real-world practice (Sanger 2020; Ollis 2020) for a communal goal (Allan et al., 2015). Because some of these community-engaged projects or activities may be new for some learners, ample scaffolding, support, and examples should be provided throughout the course.

Finally, instructors or program leaders should be very careful when establishing community partnerships by ensuring they are reciprocal, long-term relationships that center clear outcomes that are co-defined by partners. Community-engaged teaching in this context should draw upon frameworks that advocate for co-designed curriculum and or research (Rubin et al. 2012; Temper & Del Bene 2016), and have a clear focus on social change, redistribution of power, and authentic relationships (Cachelin & Nicolosi, 2022; Mitchell 2008). A key factor that may predict the feasibility or success of community-engaged EJ instruction is the level of support provided by the program or institution.

As such, new models such as the Green New Deal or energy democracy should be explored for catalyzing a paradigmatic shift toward climate (and environmental) justice, community-engagement, and anti-racism at the institutional level (Kinol et al. 2023). Another area of work should focus on bringing in new diverse instructors as faculty diversity in environmental studies programs is also a systemic problem

(Taylor, et al. 2022; Taylor 2010). Relatedly, faculty members, students, and program leaders will need to engage in programmatic, institution-wide, and community advocacy efforts to generate support for both community engagement and environmental or climate justice, as the right side of the continuum (Fig. 2) shows that programmatic support and flexibility were key factors that facilitate more community engagement. If more support is not generated within IES programs (such as new tenure track guidelines, seed funding opportunities, and mission statements that center EJ), developing community-engaged EJ curricular and pedagogical programming may remain isolated and excluded.

Limitations and areas for future research

Although this study builds new knowledge on how community-engaged EJ instruction intersects with anti-racist or inclusive practices, this study was small scale and only focused on faculty members as the unit of analysis. Apart from faculty practices, future research in this area needs to investigate the experiences of students, community partners, and the larger institutional structure to better understand inclusive and anti-racist and EJ instructional practices. More specifically, more research is needed to understand strategies for increasing the amount of EJ content available with IES programs across higher education, and how to foster more inclusive program climates (Schusler et al. 2021).

One limitation of this study was that it did not directly measure student experiences or learning in EJ undergraduate courses. Future researchers should seek to qualitatively examine student experiences via observations, surveys, or interviews in EJ courses. For example, research questions could focus on whether or not EJ content or practices provide inclusive or anti-racist learning environments from the perspective of students or how students can develop EJ literacy within different areas such as energy or climate justice (Lowan-Trudeau & Fowler, 2022; Damico et al. 2020). Surveys could also help to better gauge student sentiments on belonging and inclusion within their courses. To better understand how EJ or anti-racist environmental instruction could help increase enrollment among underrepresented groups in IES programs, much more research in this area is needed.

A secondary limitation was that this study did not focus on the experiences of guest educators or community partners in these EJ courses. Although Gabriela mentioned that she was able to pay guest educators 100 dollars per hour for their time and that students contribute “physical, scholarly, and financial” labor to organizations, little is understood about how these courses co-contribute to addressing environmental issues affecting community members or organizations. Because there is a history of extractive

community-institution relationships in higher education (Mitchell 2008), it is imperative for future research to examine if or how environmental-related community-engaged instruction is beneficial for the community. Insights from this research would be crucial to include in future frameworks for EJ community-engaged instruction.

This study took place within the classroom context. However, curricular and pedagogical guidelines are also informed by program leaders, deans of schools, and larger institutional stakeholders and policies. It is also critical for future research to investigate how institutional systems, policy, or initiatives like climate action plans impact EJ and anti-racist teaching. For example, Samuel describes how a lack of pedagogical training, programmatic, and institutional support for EJ content made it difficult for him to implement a more community-engaged approach. Future studies could investigate the role that pedagogical training may have on community-engaged instruction in environmental education. Finally, future studies could identify and evaluate policies that may emerge to promote EJ at an institutional level (Kinol et al. 2023), and explore the impact on the amount of EJ-related courses in IES programs.

Conclusion

In this study, I employed a multi-case methodology to explore how four EJ faculty members organize and implement their courses. Through this process, I explored and analyzed the intersections of EJ, community-engaged, inclusive, and anti-racist instructional practices. Due to a lack of diversity in IES programs (Taylor 2007; Taylor et al. 2022), and reported feelings of isolation and exclusion among BIPOC students (Schuler et al. 2021), it is critical to explore instructional processes and practices that address this two-pronged problem.

A theoretical and conceptual framework was introduced that helps contextualize these instructional practices within four areas: (1) Epistemic orientations, (2) Curriculum, (3) Pedagogy, and (4) Program and institutional factors (Fig. 1). The primary findings revealed that the four faculty members were all influenced by activist personal and professional experiences which helped explain their use of activist and community-engaged student learning goals (Table 3). Next, the findings and discussion explore to what extent faculty members implemented these learning goals through a range of curricular and pedagogical practices that are described within a continuum for community-engaged EJ instructional practices (Fig. 2).

The description and analysis of the continuum describe the differences in practices from faculty members that included a more minimal focus on community engagement (Darren in *Towards Integrated Justice*), to a much more integrated approach to including community within the course in several different ways (*Gabriela in embodied justice*). During this

process, a large variety of practices are described, including mentorship, critical lecture, the invitation of guest educators, the inclusion of diverse ways of knowing, student-directed projects, engaging in site visits, and the process of building partnerships that have long-term and reciprocal benefits. A key area of the analysis discusses how different strategies, such as the invitation of guest educators, or including diverse knowledge within courses overlap with theory and research in the area of inclusive and anti-racist instruction. As such, one primary finding from this study is that a more explicit and intentional integration of EJ content knowledge and emphasis on community engagement may lead to a more inclusive and anti-racist course climate for students from BIPOC and other underrepresented backgrounds.

The implications discuss these practices in more detail and focus on six strategies that faculty members or program leaders can integrate into their curricular or pedagogical process (Table 5). Perhaps most importantly, educators interested in integrating EJ, community engagement, and more inclusive or anti-racist teaching practices into their course design will need to understand that this will be a long-term process, which will be met with many challenges (McManimon & Casey 2018). In addition, it is critical to understand that faculty members intending to engage in community engagement need support at the programmatic, departmental, or institutional level to be successful given that the two faculty members on the right side of the continuum received more support and reported greater flexibility. This may be especially true for junior faculty and faculty of color (Taylor et al. 2022).

This study's primary focus was on faculty member or instructor perceptions, curricular design, and pedagogical practices. Although the study included twelve observations of class sessions, it did not focus on student learning or experiences directly. In addition, this study did not gather data on the perceptions of community partners or capture information regarding how participation and collaboration with the courses and instructors impacted their work. Finally, the study did not include data related to programmatic or institutional support such as interviews with program leaders, analysis of curriculum and mission statements of programs, or a review of program student or faculty demographics, among others. For these reasons, it is critical that future studies in this area attempt to gauge a deeper and more nuanced understanding of (1) the impact of EJ instruction and community engagement on student learning, experiences, and sense of belonging and inclusion; (2) the ways in which EJ focused community engagement courses directly impact community partners; and (3) how program and institutional culture, mission, structure, and leadership may lead to a greater inclusion of EJ, and community-engaged instruction (Kinol et al. 2023; Garibay et al. 2016; Garibay and Vincent 2018).

As research continues to show a lack of EJ content knowledge (Garibay et al. 2016; Coleman & Gould 2019) and diversity and inclusive practices within IES programs (Garibay and

Vincent 2018; Schulser et al. 2021), it is of vital importance to conduct more research in this area. This research could inform how to better diversify environmental organizations and careers, and ensure that an EJ or equity-minded process is used in the ways environmental and climate problems are addressed. As the climate crisis intensifies and the impacts are felt in inequitable ways among BIPOC and low-income groups across the globe, a much greater focus needs to be placed on including both the content knowledge and the communities most affected within the IES and ESS educational experience.

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Data availability The data used in this study are not publicly available in order to protect the identity and confidentiality of the participants.

Declarations

I certify that the information is true and represents the actions and opinions of the participants to the best of my knowledge. The author received a micro grant for the data collection portion of this research. The views and opinions of this paper do not reflect the author's current or previous institutions. There were no conflicts of interest present in the writing of this article. There were no financial or other competing interests in the writing of this article.

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