

Advancing Societally Engaged and International Planetary Health Education: Innovations, Lessons, and Recommendations for Educators

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Abstract

The delivery of planetary health education continues to grow across many disciplines, institutions, and geographical regions. To equip students with the transformative competencies needed to become agents of change in the planetary health field, educators must adopt innovative educational approaches. The course Planetary Health and Climate Resilient Health Systems aimed to pioneer this effort by integrating challenge-based learning, community-engaged learning, and Collaborative Online International Learning within a collaboration between multiple universities in the Netherlands and one in the Philippines. The challenges encountered during its development revealed a significant gap between the recommendations and practices conceptualized and promoted in higher education, and the supportive structures available for implementing these innovations. This commentary outlines three key lessons learned from developing and delivering the course. It offers practical insights for educators worldwide to design and provide innovative, international, and societally engaged education to meet current and future planetary health challenges.

Keywords: planetary health education, challenge-based learning, cross-university, collaborative online international learning, equitable partnerships



Since the 2015 launch of the Rockefeller Foundation Lancet Commission on planetary health, an enormous groundswell of interest in planetary health education has emerged across many disciplines, institutions, and geographical regions. To provide a shared foundation for this growing interest, the Planetary Health Alliance created a set of 12 cross-cutting principles for planetary health education (Guzmán et al., 2021). This framework moves beyond a prescriptive list of competencies and promotes praxis; participatory teaching methods; transdisciplinary (including epistemological) diversity; and solution-oriented and action-based approaches to tackling challenges related to environmental and social

contexts, local priorities, technology, and resources available in each learning setting.

To become agents of change in the planetary health field, students must be supported in developing transformative competencies, such as creating new value, reconciling tensions and dilemmas, and taking responsibility (Centre for Global Challenges, 2023; OECD, 2018). Educators can fulfill this need by adopting innovative educational approaches (Centre for Global Challenges, 2023; Redvers et al., 2023) and a reorientation away from more traditional teaching to support learning that includes navigating complexity and uncertainty and development of competencies to effectively combine different disciplinary insights to develop solutions for real-life challenges.

Project Description

During 2021–2022, educators from across the strategic alliance (EWUU) between Technical University Eindhoven (TU/e), Wageningen University and Research (WUR), Utrecht University (UU), and University Medical Center Utrecht (UMCU) came together to build an interdisciplinary and international course at the intersection of three topics: global and planetary health, climate change, and health systems transformation. The course built on the five foundational domains of the planetary health education framework (Table 1). To address these topics, we integrated a variety of innovative educational approaches, including societal engagement through the combination of challenge-based learning (CBL) and community-engaged learning (CEL), wherein the students worked alongside the UMCU Green Office as a societal partner to tackle planetary health challenges within the hospital. The university Green Office was selected as the societal partner due to their specific work at the intersection of both planetary health and health systems. The Green Office already being connected to one of the involved universities also meant that

a certain level of trust was present to help facilitate engagement with both the educators and students as well as a sustainable partnership. In-class group activities helped to guide students through the process of engaging with the Green Office actors and prepare for their group assignments.

Alongside the investigation into their challenge, EWUU students took part in an additional Collaborative Online International Learning (COIL) project with students from St. Luke’s Medical Center in the Philippines. This project provided all students with an essential opportunity to develop skills in not only interdisciplinary, but international and intercultural collaboration, which are essential to addressing complex and persistent planetary health challenges. International student groups from both countries took part in selected joint workshops and collaborated to develop an infographic aimed to analyze an issue at the intersection of planetary health and climate-resilient health systems. Students used their diverse perspectives to research the issues and tailored their analysis to a specific context and target group. The 6-week course took place between February and March, the first edition in 2023 and the second in 2024.

Table 1. Overview of the Five Planetary Health Framework Components and Didactic Approaches to Integrating Them in the Course

Planetary health framework components	Didactic approaches to course integration
Health equity and justice	• Cocreation of curriculum and content with educators, students, and educational policymakers, with bidirectional learning • Online module and class teaching equity and justice as a “big idea” for CBL. Therefore, students needed to include this lens in this investigation and solution. • Equitable partnership for COIL
Movement building and systems change	• CBL approach • Multiple university collaboration • International collaboration for collective knowledge-building and solution development • Workshop on student activism and active hope
Interconnectedness with nature	• Online module content delivery • Point of focus in discussion sessions with meditation and nature walks
Anthropocene and health	• Online module content delivery • Climate Fresk, a serious game for students (Spyckerelle, 2022)
Systems thinking and complexity	• Online module content delivery • CBL approach

This article details the successes and challenges we encountered by incorporating societal engagement within an international and cross-university collaboration (CUC) to support students with developing transformative competencies to tackle global planetary health challenges. These lessons were generated from insights gained throughout the entire process, including preparation, cocreation, implementation, evaluation, and adaptation across the first two editions of this course, Planetary Health and Climate Resilient Health Systems. This process included biweekly multiuniversity team meetings, an analysis of the available literature, curriculum mapping of available courses across relevant themes at the participating institutions, and examining two online international symposia for content and didactic expertise (*Challenge Based and Community Engaged Learning and Sustainability and Healthcare*), as well as meetings and open conversations with international partners, university staff, course coaches, societal stakeholders who provided real-world challenges for the students to work on, and the students themselves. The insights gained are consolidated into three key lessons. The first lesson is that societally engaged learning requires flexibility, adaptability, and open-mindedness from both educators and students. Second, building CUCs demands strategic structural and administrative reforms to unlock the full potential of movement building and systems change. Third, for ethical COIL courses, equitable partnerships are necessary. These lessons primarily reflect educators' perspectives. Future research should focus on exploring the perspectives of students and community partners.

International Community-Engaged Learning: Conceptualization and Integration

The working definition of international community-engaged learning (ICEL) proposed within the call for this special issue is "an experiential education process involving collaborative efforts among students, teachers, and societal partners to tackle global challenges" (*ICEL Special Issue*, 2023). Through ICEL, wicked problems are not only recognized in how they cross national and disciplinary boundaries, but in how these global issues require collaboration outside

the academic world with those experiencing and working to tackle these issues on a local level, therefore requiring tailored solutions. In our course, three essential elements of this definition were incorporated, which are also further explored throughout this essay: societal engagement, a global challenge, and collaboration. The term "societal engagement" is used to showcase that this element of ICEL, aiming to connect students' education to the real world, can be captured through various didactic approaches including CBL, CEL, or problem-based learning (Hou, 2014; van Lin, 2024). Figure 1 shows a visual conceptualization of the similarities and differences between the different approaches to societal engagement used to design this course (pink circle). It also captures how these societal engagement elements conceptually relate to other components of a global challenge (blue circle) and CUC (green circle). Figure 2 summarizes how these different approaches were integrated within the course. In the first editions of this course these components were integrated independently of each other. Collaboration was achieved not only internationally between students and teachers, but also through the CUC between multiple Dutch universities. The global challenge consisted of the nature of the topic the students analyzed, and in the opportunity for students from the Netherlands and Philippines to examine these global issues together, allowing them to learn from each other's diverse contextual knowledge and experiences. Societal engagement was captured through students from the Netherlands working with the UMCU Green Office to tackle planetary health challenges on a local level. Moreover, the topics of the COIL projects also addressed these challenges.

Key Lessons and Recommendations

Our experiences in the course Planetary Health and Climate Resilient Health Systems have yielded key lessons about three topics: (1) overcoming common issues and maximizing potential benefits, (2) recognizing the need for specific structural and administrative changes, and (3) facilitating more equitable partnerships. In response to each of these topics, we offer practical recommendations to facilitate the adoption of collaborative teaching and learning strategies in higher education.

Figure 1. Conceptualization of How Societal Engagement, Global Challenges, and Collaboration Feature in the International Community-Engaged Learning Approach in Course Design

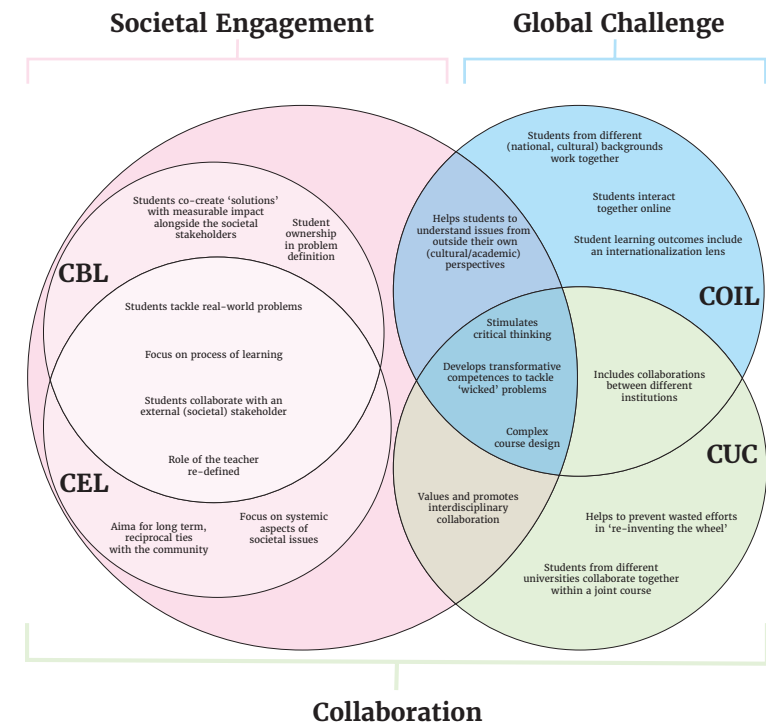
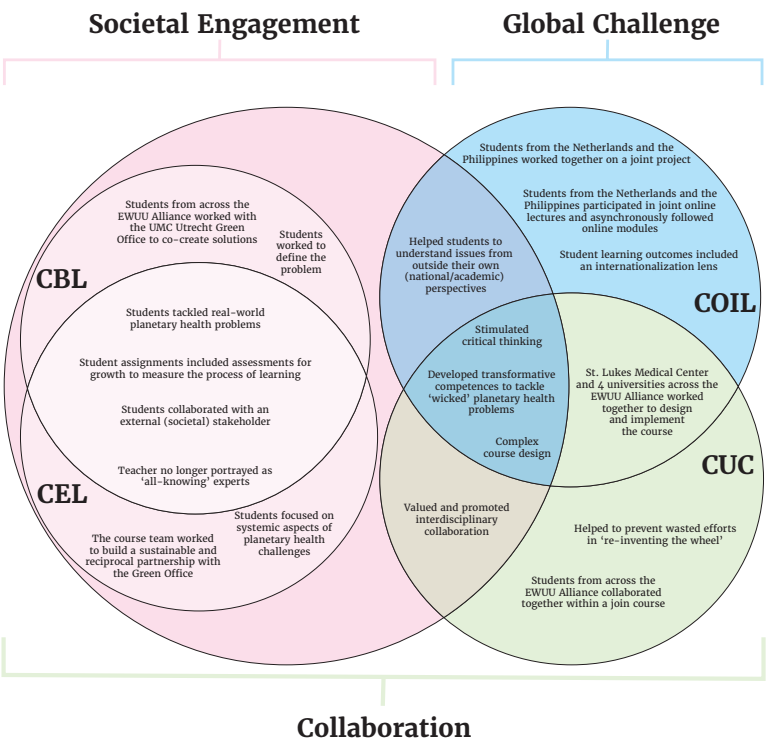


Figure 2. Conceptualization of International Community-Engaged Learning Components Within the Course Planetary Health and Climate Resilient Health Systems



Common Issues, Potential Benefits

Key Lesson 1: Challenge-based learning and community-engaged learning require flexibility, adaptability, and open-mindedness from both educators and students, fostering innovation and critical thinking.

Based on the lessons outlined in this essay, the course team are better prepared to efficiently and equitably combine these components in future editions of the course. For example, the societal partner in this course was already connected to one of the high-income country institutions involved in this collaboration, which facilitated trust early on and supported the sustainability of the partnership throughout multiple course editions. Through the COIL project, and further collaborations outside this course, an established partnership also exists between the low- and middle-income country institution, St. Luke's Medical Center, and high-income country institutions involved in this international collaboration. Through this foundational partnership, the course team can explore similar opportunities in engaging with societal partners in the Philippines. In this way, local partnerships can be established with actors who know the context and community, rather than international academic institutions facilitating a partnership with an unfamiliar community across the world (Sours & Greene, 2022).

CBL is an educational approach in which students with various disciplinary backgrounds work collaboratively on real-world challenges (Gallagher & Savage, 2023; Nichols, 2016). In addition to collaboration among students, collaboration often also includes societal stakeholders, such as industry partners, public sector bodies, or community organizations who propose the challenges that will be engaged with. CEL functions similarly to CBL in focusing on interdisciplinary collaboration between students, valuing the process of learning and fostering experiential learning through students collaborating with external stakeholders (van Lin et al., 2024). CBL diverges from CEL by focusing more strongly on cocreating measurable solutions, rather than long-term reciprocal relationships with the societal partners, and can structure the process of experiential learning by guiding students through three distinct stages: engage, investigate, and act (Challenge Institute, n.d.). Through combining these two approaches, the students not only engaged actively with the societal partner within a reciprocal and

sustainable partnership, which characterizes CEL, but did so following a structured approach that allowed them ownership of the problem and guided them toward finding a solution to the challenge. CBL and CEL generally require flexibility, adaptability, and open-mindedness of the students and educators as they learn alongside them, as the solution follows inquiry and there is uncertainty what the “best” solution is to a challenge proposed by the societal partner (or “challenge agent”).

Recommendation 1.1. Educators should prepare students with the necessary skills and competencies to both effectively and ethically complete their investigations.

Tackling complex real-world problems and interacting with societal stakeholders, such as the challenge agent, requires educators to equip students with the competencies necessary to do so successfully. These competencies include interdisciplinary (i.e., with other academic disciplines) and transdisciplinary (i.e., with different academic disciplines and societal actors) collaboration (Choi & Pak, 2006), international teamwork, problem-definition skills, knowledge of research methods and ethics, and a good understanding of the scope and limitations of research activities they should engage in. Our experience showed that it is essential that sufficient time and attention is paid to prepare students to navigate stakeholder engagement and transdisciplinary collaborations before meeting with their challenge agent for the first time. To avoid disappointments, student teams should be encouraged to set clear expectations for time management, communication channels, and realistic deliverables with the challenge agent. In our course, both students and the challenge agent were prepared by the course coordinator in advance of their first meeting about the basics of what was expected from them and what they could expect from the other party. Otherwise, they had the freedom to set up their interaction and communication in the way that made the most sense to both sides of the collaboration. Given the interaction with societal stakeholders—often including (vulnerable) communities—specific ethical considerations also need to be addressed to protect their autonomy; to ensure informed consent, respectful engagement, and transparency; and to reduce risks of any potential physical or psychological harm to all participants

(Felzmann, n.d.; Parker & O'Reilly, 2013). In our course, students took part in tailored workshops to prepare them for an ethical investigation, including research methods, positionality mapping, and research ethics and equity. Students were also required to complete informed consent; reflect on elements of equity, ethics, and safety when selecting investigation methods; and specifically refer to these considerations within their assignments.

Recommendation 1.2. Course coordinators should promote transparent and open conversations between the different actor groups involved to help navigate the various hierarchies, responsibilities, and expectations within a CBL course.

Interaction with societal partners also places different demands on course coordination, as stakeholder engagement before, during, and after a course does generally not occur in typical courses. These demands include ensuring sufficient understanding of roles, responsibilities, and expectations (e.g., through preparatory meetings and written documents); facilitating or advising on the interactions between students and challenge agents to facilitate mutual understanding; and supporting the navigation of misunderstandings or communication gaps if these arise between student and challenge agent. An additional potential complexity in the dynamic inherent to CEL/CBL should be anticipated: the leveling of a traditional hierarchy in the classroom, meaning that learning and expertise are continuously exchanged between the students and those “teaching” or “supervising” them. Whereas traditional courses often position educators as “all-knowing” experts whom students are learning from, within CEL/CBL courses students become the experts themselves as they investigate their challenge alongside the challenge agent. For example, one of the challenges the student groups investigated required the students to dive into the physical designs of working environments, an area outside the expertise of the course team. They were also required to take the lead in mapping out their investigation plan and develop their solution without strict guidelines. This format promotes student independence, critical thinking, initiative, and problem solving; however, educators and students may need time to adjust to this dynamic, and some students may lose motivation as they are pushed too far out of their comfort zone (Cheung et al., 2011).

Recommendation 1.3. Course coordinators should leave some flexibility within the curriculum to allow student coaches to be responsive to emerging student needs.

CEL/CBL can also introduce learning needs not anticipated in the course design and planning, which can arise because of emerging understandings of the challenge, or the identification of additional competencies required to address the challenge or transdisciplinary collaboration (Challenge Institute, n.d.). The likelihood that new elements will appear requires a course design with a degree of flexibility that allows for responsiveness and adapting to students' needs. In our course, this flexibility was often provided by student coaches. Student coaches guided the students during small group work throughout the process, addressed any issues, and integrated the principles of planetary health education. These student coaches had been recruited not only based on their affinity with the topic of planetary health, but also for their interpersonal skills, didactic improvisation skills, and flexibility. For instance, one coach incorporated meditation and nature walks into the first edition of the course in response to observations about ecoanxiety among students confronting climate change. In the second edition of the course, one coach adapted a discussion session to focus on defining group roles and expectations when this need arose from their group.

Structural and Administrative Changes

Key Lesson 2: Building cross-university collaborations demands strategic structural and administrative reforms to unlock the full potential of movement building and systems change.

Interdisciplinary collaboration is one of the elements essential to tackling “wicked” planetary health problems (Centre for Global Challenges, 2023). Collaboration across often discipline-oriented departments or education programs may be only the first step. Obtaining the required expertise for a particular endeavor may involve collaboration between different institutions of higher education. Encouraged by the strategic EWUU alliance of three Dutch universities and an academic teaching hospital (which includes the Faculty of Medicine), the complementary expertise these institutions represented, and a shared vision to avoid wasted efforts in “re-inventing the wheel” (e.g., if each institution were to separately develop planetary health education), this

course was designed for the participation of students from all four institutions. The course would foster interdisciplinary and intersectoral collaboration, coordinating of resources, sharing information, building on each other's strengths (Lloyd, 2016), and would be a "leading by example" illustration of what movement building—one of the five planetary health framework components—could look like in practice.

Recommendation 2.1. Higher education institutions participating in cross-university collaborations should make efforts to align academic schedules and credit loads of their courses.

We identified practical, strategic, and financial issues that needed to be addressed when working across multiple universities to deliver a shared course. On a practical level, course schedule and curriculum planning variations resulted in large differences in the number of weeks that teaching blocks lasted, the starting dates for these blocks, the number of courses students could take per block, and the number of credits normally offered per course. To illustrate this complexity, Figure 3 provides the educational calendars of three of the alliance partners (with UMCU as the UU Faculty of Medicine represented here). To overcome this issue, the course was designed as three different "packages," each tailored to a specific student group with different credits, course load (full time/part time), duration, and assignments. Coordinating this multifaceted endeavor required extensive efforts beyond regular course curriculum design from the course team, university administrations, and alliance partners. These setups require an institutional commitment and need to be strategically embedded within a wider educational vision that supports cross-institutional collaboration. A second practical challenge in the implementation of this course was student recruitment. The course aimed to have representation from each of the alliance universities as well as disciplinary diversity, requiring recruitment efforts across a wide range of student populations. However, each student group required targeted approaches, not only in the method of communication (posters, Instagram, website announcement, LinkedIn posts) but, as we discovered, also via different communication styles tailored to the specific student groups. Different aspects of the course (e.g., language) would appeal to different student populations, meaning a singular poster or message across all channels likely limited the recruitment efforts.

Recommendation 2.2. Higher education institutions participating in cross-university collaborations should work toward clear and centralized communication channels and recruitment strategies, transparent hierarchical structures, and easily accessible information systems between the participating institutions.

This course was one of the first within this alliance that aimed for cross-university course design that was not extracurricular but instead anchored and integrated in the curricula of the participating institutions. The development of this course thus also implied developing the structures necessary to support such courses, rather than simply "reinforcing people [or courses, for that matter] staying in their boxes" (Kezar, 2005, p. 54). Structural issues primarily resolved around the significant silos in which teaching or education decision-making is organized, not only between universities but also within individual university programs and divisions. This compartmentalization hindered effective collaboration, communication, and streamlined decision-making. These structural barriers should therefore be anticipated and can be mitigated through early (1) identification of the correct communication channels and (2) engagement of administrative and education policy representatives, who often are not part of standard course design processes but are essential because of the specific networks or knowledge necessary to navigate organizational divisions between and within the different institutions (Lloyd, 2016). For example, our course team included a policy officer from the UMCU whose perspective, skills, and network were crucial in predicting and finding creative solutions to potential barriers, navigating university structures, and acting as an advocate for sustainably embedding the course within the university.

Recommendation 2.3. Supportive institutional administrative and policy structures can incentivize other innovative educational approaches, through sustainable funding strategies that recognize the additional time and effort required for these endeavors, and practical engagement to help navigate practical, structural, and financial barriers.

The practical and structural challenges also have financial implications. Institutions need to be willing to provide additional support given the increased course development and implementation time required from educators and institutions. Similarly, we observed that additional support is necessary for the delivery of CBL/CEL and interdisciplinary education,

for example because of the need to provide coteaching by multiple teachers with complementary knowledge, and additional support such as student coaches or guest lecturers (Van den Beemt et al., 2020). In our course, most guest speakers who were involved for their specialized knowledge or skills volunteered their time due to their personal interest, but this practice has limited sustainability. The development of this course was funded by the EWUU alliance through a seed fund. However, actual delivery of the course needed to be covered through regular course reimbursement mechanisms—which meant reimbursement was available only for students from the hosting faculty of the UU (the UMCU, or Faculty of Medicine). Therefore, although widespread support exists for the development of innovative courses, and seed grants are often available, new financial mechanisms are needed to sustainably support resource-intensive interuniversity, interdisciplinary course collaborations (Van den Beemt et al., 2020). The first step is to ensure that seed funds allow for not only the time necessary to design the course, but the additional time required to ensure the course is sustainably implemented.

Although many issues were experienced, we want to acknowledge the supportive structures and efforts that were in place as good practices that facilitate the development of these types of multiuniversity courses. First, EduXchange, a platform specifically built to register students to courses outside their own institutions, makes these kinds of courses more accessible to students and lowers the threshold for them to register. Second, the EWUU alliance itself acted as a boundary-crossing network that helped navigate some complexities, with personnel providing useful information (such as Figure 3), expert advice, and specialized CBL guest lectures within the course (Lloyd, 2016). Last, the positive attitude of the leadership, administrative actors, and teaching staff across the alliance institutions helped in creatively and pragmatically overcoming issues when identified. For example, these actors were crucial in developing a single course code that encompassed separate course “packages” with different credit loads. The collaboration that made this innovation possible shows the importance of not only a dedicated interdisciplinary teacher, but also of education administrative or policy actors as a part of the course team to guide efforts and achieve course implementation.

Facilitating More Equitable Partnerships

Key Lesson 3: Equitable partnerships are necessary for ethical Collaborative Online International Learning courses.

Recommendation 3.1. Educators can make a deliberate effort to integrate equity and justice considerations into didactic choices, such as using free online platforms that integrate synchronous and asynchronous learning to expand access to planetary health education and break financial and geographical barriers.

Equity and justice are foundational principles of planetary health, and these values must be mirrored by the institutions offering education in this field (Wabnitz et al., 2020). In addition, the global-level interconnectedness of the causes and consequences of climate change, biodiversity loss, and ecosystem degradation make this field inherently international in outlook and approach. COIL is a powerful didactic approach characterized by students from different (national, cultural) backgrounds collaborating in an online environment to reach internationalization-focused learning objectives (Centre for Academic Teaching and Learning, n.d.). COIL courses enable international students from diverse backgrounds to collectively learn and address complex challenges (Adefila et al., 2021). Inclusivity should not be simply assumed in these collaborations, both between the students and within the teaching team; instead, it requires specific and critical reflection in the process of developing and implementing the course (Wimpenny et al., 2024). Equity was a central theme not only in what students learned within the course, but what the educators themselves continuously and critically reflected on in its design and their own work together. Transparent discussions around reciprocal benefits, roles, responsibilities, and expectations were central to these efforts. Mutual trust and respect further facilitated the process, as this was not the first collaborative project between the international colleagues involved, but rather the result of, and ongoing work toward, a sustainable partnership between the involved institutions. Regarding planetary health challenges, the risk of continued inequity and injustice needs to be anticipated and, where possible, mitigated. Facilitating equity should include deliberate efforts to remove epistemic injustice (i.e., moral wrongs in how we produce, use, and circulate knowledge) in the field, evident by the undervaluation of knowledge and expertise from historically marginalized communities and countries in discussions on

planetary health (Bhakuni & Abimbola, 2021).

Recommendation 3.2. Institutions should prioritize reciprocal bidirectional knowledge exchange, ensuring that both parties from different cultural backgrounds contribute and learn equally.

Therefore, this course was designed both to include education about climate, health, and epistemic injustices related to planetary health challenges, and to integrate an international partnership to deliver this education with St. Luke's Medical Center in the Philippines. The incorporation of a COIL component enabled students from the Netherlands and the Philippines to jointly learn from each other's unique perspectives on global planetary health challenges and cocreate locally tailored solutions. Importantly, this bidirectional exchange of knowledge and skills extended to the institutional level, where educators from institutions of both nations collaborated and learned from their respective backgrounds to offer this innovative course. For example, the international colleague from the Philippines had extensive experience and knowledge in the planetary health field to help shape the content focus of the course. On the other hand, colleagues from the Netherlands had experience and skills in offering CEL and CBL courses. The wide range of skill sets and additional contextual perspectives not only served to enrich this course but also supported each educator's broadened perspectives in the field of international and societally engaged learning.

Students participated in joint synchronous skills development workshops as well as asynchronous online modules for content delivery, representing knowledge from both institutions. Ultimately, student groups developed and presented infographics with tailored messaging to specific subpopulations on a planetary health challenge. Although the primary issues encountered were administrative and structural, such as managing time zones and coordinating schedules, the course team maintained close contact with students to address team difficulties as they arose. The intercultural environment did not seem to create significantly larger problems than those typically observed in standard group work, underscoring the effectiveness of the program's design. Intercultural competence development is one of the key objectives of COIL courses, though their implementation has yielded mixed results in this regard (Hackett et al., 2023). In this course, specific attention was paid to the group collaboration,

with students taking part in a joint introductory workshop targeting intercultural and international collaboration skills and facilitated group connection. Although the development of intercultural competencies was not formally evaluated during the course, the students were generally positive about working with students with diverse backgrounds in the course evaluation.

Recommendation 3.3. Funders and higher education institutions must ensure funding conditions to support fair compensation and eliminate systemic inequities in international collaborations.

By offering the course free of charge, equitable access to international planetary health education was enhanced, addressing a common barrier: Such opportunities are often limited to those who can afford to travel abroad. However, a significant obstacle to achieving equitable collaboration arose from the financial compensation mechanisms tied to grant funding. Funders often fail to promote fair international partnerships, leaving collaborators to either engage in inequitable arrangements or devise creative ways to uphold fairness within an inequitable system (Plamondon et al., 2017). Within our own project, the virtual component of the course was funded by the Dutch Ministry of Education, Welfare and Sports, meaning the funding was intended for the Dutch institution. However, the Dutch course team was able to make funds available internally to compensate the Filipino partner.

Conclusion

This article highlights three key lessons learned through a multiuniversity collaboration for developing and implementing the course Planetary Health and Climate Resilient Health Systems, which integrated CBL, CEL, and COIL. Table 2 highlights these key lessons and summarizes the practical recommendations from both bottom-up and top-down approaches based on these lessons learned. The challenges experienced highlight a very real gap between didactic innovation aspirations and recommendations, and existing structures within established institutions. We hope with the sharing of our experiences, the challenges, and our recommendations to overcome these challenges and support many educators' palpable enthusiasm for integrating these concepts to create education that can respond to the need to tackle the complex challenges that current and future generations of professionals will face in the field of planetary health.

Table 2. Concrete Recommendations Outlined per Key Lessons

1	Key Lesson 1: Challenge-based learning and community-engaged learning require flexibility, adaptability, and open-mindedness from both educators and students, fostering innovation and critical thinking.
	Recommendations to overcome common issues and maximize potential benefits: 1.1. Educators should prepare students with the necessary skills and competencies to both effectively and <i>ethically</i> complete their investigations. 1.2. Course coordinators should promote transparent and open conversations between the different actor groups involved to help navigate the various hierarchies, responsibilities, and expectations within a CBL course. 1.3. Course coordinators should leave some flexibility within the curriculum to allow student coaches to be responsive to emerging student needs.
2	Key Lesson 2: Building interuniversity collaborations demands strategic structural and administrative reforms to unlock the full potential of movement building and systems change.
	Recommendations for specific structural and administrative changes: 2.1. Higher education institutions participating in cross-university collaborations should make efforts to align academic schedules and credit loads of their courses. 2.2. Higher education institutions participating in cross-university collaborations should work toward clear and centralized communication channels and recruitment strategies, transparent hierarchical structures, and easily accessible information systems between the participating institutions. 2.3. Supportive institutional administrative and policy structures can incentivize other innovative educational approaches, through sustainable funding strategies that recognize the additional time and effort required for these endeavors, and practical engagement to help navigate practical, structural, and financial barriers.
3	Key Lesson 3: Equitable partnerships are necessary for ethical Collaborative Online International Learning courses.
	Recommendations to facilitate more equitable partnerships: 3.1. Educators can make a deliberate effort to integrate equity and justice considerations into didactic choices, such as using free online platforms that integrate synchronous and asynchronous learning to expand access to planetary health education and break financial and geographical barriers. 3.2. Institutions should prioritize reciprocal bidirectional knowledge exchange, ensuring that both parties from different cultural backgrounds contribute and learn equally. 3.3. Funders and higher education institutions must ensure funding conditions to support fair compensation and eliminate systemic inequities in international collaborations.



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