ENVIHEI

Title of the PBL challenge:

A Symbiosis of Intercultural and Sustainability Competences, Learning to Collaborate on Global Challenges

Name of the responsible lecturer

Leonore Peer

University / Department / Degree program

Montanuniversität Leoben / Center of Languages, Learning & Culture

Course / Subject in which implemented

Intercultural Competence and Communication (Elective)

Implementation period (dates)

June 18, 2026 – June 30, 2026

Total duration (weeks/hours)

2 weeks / 25 hours

Number of students involved

9 students

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1. Project Design

1.1 Brief description of the project and the challenge proposed

Based on the premise that addressing global challenges requires intercultural and interdisciplinary collaboration, an existing elective course was redesigned to integrated sustainability competences and disciplinary ways of thinking and practicing (WTP; McCune & Hounsell, 2005).

The central challenge was the Green Horizon Project, a fictional but realistic scenario involving a planned lithium mine. Students adopted different stakeholder roles to explore conflicting interests and perspectives, negotiate sustainability trade-offs, and reflect on the role of intercultural and interdisciplinary collaboration in addressing complex sustainability challenges.

1.2 Expected learning outcomes (academic and transversal competences)

Upon completion of the course, students will be able to:

1. Reflect on their own cultural assumptions and perspectives and recognize how these influence intercultural interactions.
2. Analyse differences in communication and collaboration using Erin Meyer's (2014) eight cultural dimensions.
3. Identify and explain intercultural challenges, considering national, disciplinary, professional, and individual perspectives.
4. Apply perspective-taking to explore different stakeholder interests, values, and ways of thinking and practising in complex situations.
5. Explain how the Sustainable Development Goals (SDGs), planetary boundaries, and selected GreenComp competences relate to global sustainability challenges.
6. Develop and critically reflect on strategies for effective intercultural and interdisciplinary collaboration in addressing complex sustainability challenges.

1.3 Targeted sustainability competences

The course targeted six sustainability competences drawn from the European Commission's GreenComp framework (Bianchi et al., 2022). These competences were integrated into the learning activities to support students in understanding sustainability challenges, critically examining different perspectives, and developing strategies for intercultural and interdisciplinary collaboration.

Table 1 presents the targeted GreenComp competences, their corresponding Expected Learning Outcomes (ELOs), as defined in Section 1.2, and the learning activities through which they were addressed.

Table 1. Alignment between GreenComp sustainability competences, Expected Learning Outcomes (ELOs), and learning activities.

GreenComp Competence	ELO	Selected Learning Activity
Valuing sustainability; supporting fairness	4,5	Stakeholder perspectives and competing interests
Systems thinking	3,5	Analysing the Green Horizon Project
Critical thinking	1,3,6	(intercultural tool) OSEE analysis and reflection
Problem framing	3,4,5	Identifying different interpretations of the mining challenge
Exploratory thinking	4,6	Developing alternative solutions
Collective action	6	Stakeholder negotiation and collaboration plan

1.4 Sustainability approach and how it is integrated into the project

GreenComp was used both a) as a framework to guide the redesign of the course and b) as a tool for students to reflect on the competences needed to act for sustainability, how these competences can be developed, and to what extent their university programmes support their development.

SDGs and the Planetary boundaries framework were introduced through a flipped classroom approach. Students explored these concepts in preparation for the Green Horizon Project and subsequently applied them to analyse the sustainability challenges, consider different stakeholder perspectives, and develop possible solutions.

The Green Horizon Project provided an authentic, problem-oriented learning scenario in which students explored how intercultural communication, disciplinary perspectives,

and competing stakeholder interests influence collaborative approaches to sustainability challenges.

Sustainability was not taught as isolated content but integrated into problem analysis, perspective-taking, reflection, and collaborative solution development.

1.5 Methodologies and tools used (PBL structure, facilitation techniques, etc.)

The redesign of the course was inspired by the ENVIHEI project's problem-based learning (PBL) approach. However, due to the existing course structure, its limited duration, and the time available for redesign, the course did not adopt a classical PBL format. Instead, it followed a scaffolded, problem-oriented approach, gradually increasing the complexity of learning activities and integrating intercultural, interdisciplinary, and sustainability perspectives.

The course began with short intercultural case studies to introduce and explore Erin Meyer's eight dimensions of cultural differences (Meyer, 2014). Students were encouraged to question their assumptions, challenge established perceptions and norms, and consider alternative explanations for intercultural misunderstandings. The OSEE reflection tool (Observe – State – Explain – Evaluate; Deardoff & Bernardo, 2012) supported structured reflection and perspective-taking, helping students distinguish observations from interpretations and avoid simplistic cultural explanations. The cases progressively introduced disciplinary *ways of thinking and practising* (WTP) alongside national, professional, and individual perspectives.

Sustainability concepts, particularly the Sustainable Development Goals (SDGs) and planetary boundaries, were introduced through a flipped classroom approach in preparation for the more complex *Green Horizon Project*. This fictional but realistic scenario involving a proposed lithium mine served as the central integrative challenge.

Working in groups, students completed several interconnected tasks:

- Analyzing stakeholder interests, values, and potential conflicts.

- Identifying relevant SDGs and planetary boundaries and considering their implications for the project.
- Identifying potential intercultural and interdisciplinary challenges using Meyer's dimensions (Meyer, 2014) and disciplinary ways of thinking and practicing (WTP).
- Developing a communication and collaboration plan for the international project team.
- Identifying and reflecting on relevant GreenComp competences needed to address the challenge.

The learning path culminated in a simulated stakeholder meeting involving all nine students, who acted in their assigned roles to articulate different interests, negotiate conflicting perspectives, and explore possible solutions. This was followed by a whole-group discussion adapted from de Bono's Six Thinking Hats, encouraging students to examine the challenge from different angles, including risks, opportunities, and alternative solutions.

Peer discussion and collaborative reflection were integrated throughout the course to foster perspective-taking, critical examination of assumptions, and reflection on intercultural and interdisciplinary collaboration

1.6 Organization of the project (group formation, timeline, milestones)

The course consisted of four synchronous sessions complemented by asynchronous learning activities on Moodle. The Green Horizon Project was conducted during a half-day workshop on Day 3, followed by reflection, and concluding activities on Day 4.

Initially, the groups were intended to be formed to maximize heterogeneity in terms of participants' backgrounds. However, due to scheduling conflicts with examinations in other courses, students formed their own groups. Nevertheless, the participants represented diverse cultural and engineering backgrounds, were enrolled in both bachelor's and master's degree programmes, and differed in their levels of professional experience. This diversity provided opportunities for intercultural and interdisciplinary exchange throughout the course.

Given the short duration of both the Green Horizon Project and the overall course, no formal project milestones were established. Instead, the learning process was structured through a sequence of scaffolded activities and tasks.

1.7 Deliverables requested from students (type, format, deadlines)

Group work was carried out during class sessions and consisted of the collaborative tasks described in Section 1.5, including stakeholder analysis, identification of sustainability challenges, development of a communication and collaboration plan, and reflection on relevant GreenComp competences.

Individual work included case studies and interactive activities completed through Moodle. In addition, students were required to submit a final reflection on their learning, together with a personal reflection, via Moodle by 12 July 2026.

1.8 External collaborators involved (mentors, companies, experts…) and their role

No external collaborators were involved in this implementation.

2. Project Evaluation

2.1 Assessment criteria and methods used

Assessment was based on students' completion of learning activities on Moodle, individual reflection, and participation in class. Moodle activities included case studies and interactive tasks addressing intercultural communication, disciplinary perspectives, and sustainability challenges. Individual reflections provided students with an opportunity to critically examine their learning, assumptions, and understanding of intercultural and interdisciplinary collaboration. Class participation was assessed through students' engagement in group activities, peer discussions, and collaborative exercises, including the Green Horizon Project and the simulated stakeholder meeting.

2.2 Evidence of student learning (examples, outputs, results)

Evidence of student learning was drawn primarily from the final written reflections submitted via Moodle.

Across the reflections, there is evidence of emerging intercultural awareness and an ability to connect intercultural competence with sustainability and disciplinary practice. Students describe questioning their own communication norms, considering alternative perspectives, and recognising the importance of intercultural collaboration for addressing global challenges. Several also relate these insights to their professional values and experiences.

While some reflections reveal conceptual simplifications and occasional cultural generalisations, they nevertheless suggest that the course helped students reflect on existing assumptions, interpret prior experiences through new conceptual lenses, and recognise connections between intercultural and sustainability competences.

The examples presented below are limited to reflections from students who provided informed consent for their work to be used in the project report. To minimise potential power imbalances and avoid any perceived pressure to participate, informed consent was sought only after the course had ended and students' grades had been finalised.

Student A:

"[…] It has also become clear how intercultural competences combine with green competences. Solving the world's environmental challenges is a global issue that can only be achieved through effective intercultural communication. Without this, international teams cannot do the necessary work.

I am from a very low-context egalitarian culture and I believe these effects my professional behaviour immensely. I think directness in communication and feedback giving are very important in science. In the end, we are working to discover the truth of the world. This cannot be achieved without stating the truth directly with precise language. However, I understand how the Dutch approach to scheduling, relationships or leading is not necessarily superior."

Student B:

"[…] Cultural competence matters for global challenges because problems like climate change require cooperation across very different value systems. Solutions designed in one cultural frame often fail elsewhere. Combining intercultural competence with green competence means listening to how communities actually understand sustainability, rather than exporting one model. Progress depends on building trust across cultures before building policy.

Professional norms also shape my behaviour strongly. Working in product management and healthtech, I value transparency, evidence-based decisions, and respect for privacy and safety. These professional values sometimes reinforce cultural norms and sometimes sit in tension with them, for example when direct feedback is professionally expected but culturally uncomfortable.

I can connect these values to intercultural and green competence through humility. Whether I am negotiating with an international client, coaching chess students, or evaluating a data platform, the same skill helps recognising that my perspective is one of many, and that better outcomes come from genuine curiosity about others."

Student C:

"I used to think that intercultural communication meant having to learn a global language to fit into the international system. Now, I believe it's the ability to decipher the national boundaries of different countries' cultures and societies in order to communicate […]

Combining intercultural competence with green competence showed me why global challenges are stalled. Climate negotiations fail when a country in a high-context situation interprets a "deadline" in a low-context situation as aggression, not urgency. Cultural competence builds trust so that scientific data becomes a form of shared action, a translator not of words, but of cultures. For example, implementing recycling in my city requires a different message than in Leoben: here, rules are enforced, people are very moral, while there, family networks are key, and people are more guided by their ethics.

In my field, International Business, two professional values dominate: transparency and respect. Transparency stems from low-context norms based on data credibility, being explicit and clear, which clashes with community decision-making in projects abroad. Intercultural competence allows me to present data without disregarding local knowledge. Responsibility connects directly with green competence: I'm not only responsible for a bridge not collapsing, but also for collective action, for one that doesn't displace a community or ecosystem, and that's where the importance of individual initiative in systemic thinking lies. […] I take away from the course the objective of listening to what is left unsaid, interpreting cultures and societies, and designing technically sound yet culturally legible solutions. I believe it is important that we connect; we are diverse cultures and norms, but we are one world, and ultimately, we all seek the common good."

3. Reflections and Recommendations

3.1 Main achievements and strengths of the project

The intervention illustrates how intercultural competences, disciplinary ways of thinking and practising (WTP), and sustainability competences can be meaningfully integrated into a short, problem-oriented course. Students' reflections as well as behaviour and feedback in class suggest that the approach encouraged them to recognise connections between these areas and critically examine their own assumptions and professional perspectives. The redesign also provides a promising foundation for further development towards a more comprehensive problem-based learning (PBL) format.

The heterogeneous backgrounds of the participants, including their cultural and disciplinary perspectives, levels of study, and professional experience, appeared to contribute to engaging group dynamics and opportunities for mutual learning. This diversity was an important resource for the learning activities and should be considered when adapting the approach to more homogeneous groups, where different perspectives may need to be introduced more deliberately through stakeholder roles and case scenarios.

3.2 Challenges faced and how they were addressed

Some students found the Green Horizon Project partly challenging because the fictional scenario was not sufficiently developed in terms of its specific circumstances and context. Students were encouraged to explore relevant background information independently and consider how different factors might influence the situation and possible solutions.

3.3 Lessons learned for future implementations

The Green Horizon Project could be further developed by providing a more detailed description of the specific situation, including the location and scale of the proposed mining project, the environmental and social conditions in the affected region, and the stakeholders' roles, relationships, and competing interests. The scenario should provide sufficient contextual detail for students to understand the situation and identify relevant issues, without prescribing which problems to prioritise or how to resolve them. This would preserve its ill-structured nature while providing a stronger basis for inquiry, discussion, and the exploration of alternative solutions.

4. Supporting Material

4.1 Lecturers' materials and project documentation

Lecturers' materials and project documentation are available in the following link: https://drive.google.com/drive/folders/1r2c6La3hSE297RdotC-5qd-aSvC3wShE?usp=drive_link

4.2 Deliverables produced by students, final presentations or pitch materials

Student deliverables have not been uploaded as separate supporting materials. However, examples of students' final written reflections are included in Section 2.2 of this report as evidence of student learning. These excerpts are drawn from students who provided informed consent for their work to be included in the report.

4.3 Images/videos (with consent)

Photographic and video records were captured with the explicit consent of the participating students, and are available in the following link:

https://drive.google.com/drive/folders/1oODsTDZZJqgmF-wP83bUGNwlxLEJLfNZ?usp=drive_link

4.4 Any other relevant material

All the materials, including this report, are available in the following link:

https://drive.google.com/drive/folders/1dkK7jqtpFvMXdO7U6QHb7U3weiYHjRDc?usp=drive_link