Use of COIL in learning about gender equality and sustainable health

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ABSTRACT: *The study examines the impact of Collaborative Online International Learning (COIL) on the development of students' 21st-century skills and sustainable competences with the focus on sustainable development goal 5 - Gender Equality. The research highlights the potential of COIL as a complementary approach to physical mobility, fostering an inclusive learning environment and promoting intercultural learning. The findings emphasize the need for intensive cooperation of partnered institutions in designing COIL, the importance of timely planning of learning activities, facilitation of students' online interactions, and management of students' online group work. The findings also suggest certain development in students' understanding of gender identities and gender issues in international context and to a lesser extent development in students' recognition of gender equality as a goal of sustainable development.*

KEYWORDS: *COIL; Gender equality; Intercultural learning; Sustainable competences; 21st-century skills.*

The article evaluates the impact of Collaborative Online International Learning (COIL) on students' intercultural learning and the development of sustainable competences during the full-scale pilot of the submodule Health and Sustainability. Health and Sustainability is one of the four submodules in the *SustainComp* Curriculum, an interdisciplinary curriculum created through the collaboration of four partner institutions within the Erasmus KA2 project, Sustainable Competences in Higher Education: University of Agder, Norway; Ljubljana University, Slovenia; UCL University College, Denmark; and Masaryk University, Czech Republic. The author of this article is a member of the team at the Faculty of Education at Masaryk University, who played a key role in designing the content of the Health and Sustainability submodule and piloting its curriculum with the use of COIL. During the full-scale pilot, 17 students from the Faculty of Education at Masaryk University collaborated online with 44 students from UCL University College, engaging in tasks and activities related to gender equality and sustainable health. This article provides an overview of the Health & Sustainability submodule and examines the impact of COIL on students' learning and teachers' collaboration.

Implementation of COIL in Health and Sustainability Submodule

Collaborative Online International Learning (COIL) is a method of virtual exchange in which students engage in online collaboration through both synchronous and asynchronous tasks with partner institutions abroad (Janík, 2024, Chap. 1). COIL facilitates purposeful international and intercultural interactions among students, thereby fostering their intercultural learning (ibid.). Educators trained in COIL can design activities and group projects that encourage students to reflect on their intercultural experiences and develop 21st-century skills. As COIL emphasizes intercultural online collaboration, the skills it aims to develop include culturally appropriate online communication, proficiency in using specific technologies for various communication purposes, and the ability to collaborate online in international teams (ibid.). These skills are also integral to learning outcomes stipulated in the Health and Sustainability submodule: developing student's understanding of the interconnections between personal health and environmental sustainability in the local and global context, raising students' cultural awareness and self-awareness of personal values and how these impact sustainable development, and building students' capacity to formulate and present their own perspective on sustainable health in a constructive and culturally appropriate way are the submodules' learning outcomes that are congruent with COIL objectives and with criteria for internationalization.

The submodule's curriculum is fully internationalized in its content and approaches. Following Hudzik's idea of comparative methodology (2015), the activities in the submodule engage students in examining and comparing health-related issues in at least two different cultural or regional contexts. Students are encouraged to compare and interconnect their local experience with the global impact and issues. Comprehensive internationalization (Hudzik, 2015) is of vital importance for the development of students' 21st-century skills as well as their sustainable competences. Both sets of competences complement one another: environmental disasters, pandemics, poverty, gender equality and other issues cannot be solved without people's ability to communicate effectively and appropriately with people from other cultures, without awareness of more than one perspective and without the ability to collaborate in teams across disciplines and cultures.

While the learning content of the submodule can be considered as internationalized per se, as there is hardly any doubt that environmental issues are international in their impact and urgency, this itself might not propel students to need to interact and collaborate with students from other cultures in providing solutions to the global problems. For this purpose, the submodule relies on the method of Collaborative Online International Learning (COIL) that provides opportunities for students' purposeful engagement with the curriculum and purposeful interaction with students across universities and cultures. By creating opportunities for purposeful international and intercultural interaction for all students, the submodule meets the criteria for internationalization (Beelen and Jones, 2015).

Additionally, COIL addresses the limitations associated with students' physical mobility. It is widely acknowledged that physical mobility opportunities are available to only a small percentage of students and staff. COIL, however, has the potential to involve a far greater number of students and educators in meaningful international experiences (Rubin, 2023a, pp. 11-12). Within the full-scale pilot (see below), the COIL method was employed in collaboration with UCL University College, Denmark, in November 2023 as a complementary approach to physical mobility (Janík, 2024, Chap. 2) and as a tool for enhancing the intercultural experiences of students from Denmark and Czechia.

The foundation for the full-scale pilot was laid by findings and needs analyses derived from prior COIL-based and onsite pre-pilots. While it is beyond the scope of this paper to detail the pre-pilot findings, it is important to note that the full-scale pilot integrated insights from both pre-pilots, addressing identified needs and implementing methods to further develop students' sustainable competences and digital capabilities. Although the full-scale pilot was also open to Erasmus+ incoming exchange students at UCL University College, and thus included physical mobility, it relied more significantly on the virtual component of student exchange. Moreover, COIL addressed the limitations of purely physical mobility by emphasizing a more inclusive and collaborative approach to international learning, coupled with opportunities to enhance digital competences.

COIL in learning about gender equality

Each project partner's submodule in the *SustainComp* Curriculum sets specific learning outcomes to enhance students' sustainable competences in particular areas and through particular methods (see other contributions in this volume). From Health and Sustainability submodule, the MUNI (Masaryk University) team chose to pilot the SDG 5 on Gender Equality in relation to sustainable health.

The full-scale pilot primarily aimed at raising students' self-awareness about gender identity and its complexity and creating opportunities for students to engage in discussions and tasks with international peers to compare gender issues across countries and cultures and to seek solutions collaboratively. With appropriate pedagogical intervention and facilitation built around COIL, learning about gender issues and gender equality in international and intercultural contexts can foster engagement with diverse perspectives and increase awareness of how cultural identities shape perceptions of gender.

Among others, students were expected to:

- raise their self-awareness, including their awareness of gendered identity in the international intercultural context
- become aware how their personal values and preferences are influenced by their gendered identity and how these in turn may impact sustainable development
- be able to gather information on gender differences and gender issues in their locality, compare the gathered data with those from other students' locations and provide solutions
- understand some of the global gender issues, their impact on personal well-being and environmental health
- be able to recognize instances of gender stereotyping and gender-related discrimination
- develop digital competences in collaboration with students from diverse backgrounds
- develop empathy towards people of other cultures and the ability to communicate in a culturally appropriate way on the issues of gender and gender equality.

Research questions and methods

COI*L* was the primary approach tested in the full-scale pilot of the Health and Sustainability submodule. Accordingly, this research investigates the impact of COIL on Masaryk University *students* (n 17) and UCL University College students (n 44), including six incoming Erasmus

students from other institutions. Students' perceptions and evaluations of COIL as a learning method are key findings that informed the creation of a concise Instructor's Guide for Collaborative Online International Learning (Janík, 2024). Additionally, the research examines COIL's impact on educators, particularly in terms of online course preparation, management of student online group work and interactions, and overall teacher perceptions of COIL's use in teaching, all of which also contributed to the Instructor's Guide.

The study utilizes a mixed-methods approach that combines quantitative data from students' post-pilot survey with qualitative data gathered from MUNI and UCL teachers' testimonies and participant observations. The post-pilot survey investigates students' accomplishment of learning outcomes related to sustainable competences and the 21st-century skills. The relatively low number of student respondents (n 37) allows us to apply only descriptive statistics in the case study. The questions were structured as follows 'Did you have an outcome from participation with regard to [e.g., English language competence, digital competences, intercultural competence, etc.]?' and students marked their answer based on the scale categorized as 'to low degree', 'to some degree', 'to high degree'. The survey also provided an open field for students to self-report on their experience in more detail.

The study addresses the following research questions:

To what extent did the COIL method contribute to the development of 21st-century skills among students?

Did the collaborative online activities within the submodule enhance students' sustainable competences?

Preparation for COIL

The chapter outlines the structure and content of the full-scale pilot and its phases: (1) introduction to the submodule, (2) pre-COIL preparation, and (3) COIL-based group work and task completion by students (see Table 1). The main object of study is the third phase, COIL-based group work, and as such is analyzed and interpreted in the following chapter.

Full-scale pilot phase	Time	Mode of interaction
Introduction to the submodule and three video lessons: What is gender, Gender identity, Gender issues	Day 1, 180 minutes	Students meet separately: MUNI students in an online videoconference via MS Teams; UCL students in a classroom.
Pre-COIL preparation	Day 1, 60 minutes	MUNI and UCL students meet in a Zoom videoconference. MUNI students participate online, while UCL students attend from the classroom.
COIL	Day 2 - 11	Depending on the COIL stage and assigned task, students either work individually or collaborate synchronously

		online in international COIL teams.

Table 1: Structure and timeline of the full-scale pilot

Introduction to the submodule

From the outset, our goal was to foster student curiosity, promote autonomous learning, and encourage engagement with diverse perspectives, the key attributes of COIL-based learning. By facilitating interactions among students from different cultural backgrounds, we aimed to expose them to a range of viewpoints and provide opportunities for gaining personalized insights into health and gender issues across different contexts (Guth and Helm, 2017; O'Dowd, 2021). Therefore, the introduction to the submodule began with thought-provoking questions but without definitive answers, prompting students to draw upon their own understanding and experiences concerning health, gender, and gender equality. The initial discussions were structured to explore personal interpretations of these concepts and to brainstorm potential connections between gender equality and sustainable development.

Following a brief intermission, students continued with three lessons: "What is Gender?" (60 minutes), "Gender Identity" (30 minutes), and "Gender Issues" (60 minutes). The content for these lessons was delivered through video presentations pre-recorded by the author of this study. These videos were viewed independently by the participating students from Masaryk University (MUNI) and UCL University College (UCL) in their respective learning environments. MUNI students engaged in synchronous videoconferencing via MS Teams, while UCL students convened physically in a classroom setting. Each lesson comprised a video introduction, an overview of key concepts, and instructions for tasks and activities.

The first lesson introduced students to the concept of gender and gender stereotypes through a short, animated film (Mailoa, 2006). Students were asked to discuss potential gender stereotypes depicted in the film, guided by a set of questions that prompted reflection on issues such as dress codes, color associations, labor division, and the marginalization of women. The focus was primarily on male and female genders, with the aim of creating a safe space for students to explore their own gender identities and self-presentation during the collaboration (Janík, 2017).

The second lesson centered on self-identification and self-awareness in relation to gender. Students were asked to recall their earliest memory of being identified as a girl or a boy and to share this memory with a partner. The lesson emphasized self-reflection and the gradual exposure to different perspectives, beginning with pair discussions and expanding to group interactions as preparation for the more intensive exposure to diversity in the COIL phase. Reflection was facilitated through self-awareness questions and mindful reflection techniques (Kolb, 1984; Saphiere et al., 2017). Students were encouraged to consider how their gender identity had influenced past decisions or situations and to practice respectful communication and mindful listening (Gudykunst, 2004).

The final lesson addressed gender issues through group analysis of case studies on gender discrimination questions (Harvard Graduate School of Education, n.d.). Students were encouraged to relate the scenarios to their own experiences, balancing theoretical analysis with practical insights from real-world situations. Specifically, students analyzed a case study involving gender discrimination at a fictional high school and compared it with the treatment of boys and girls in their local schools.

Student discussions were facilitated by two teachers at UCL and one at MUNI, who supported the MUNI students in the MS Teams channel. At this stage, students' contributions were not recorded or posted online, as the primary objective was to encourage open and free sharing of perspectives and promote students' independent work and autonomous learning in preparation for the COIL experience. As a result, some students felt safe to reveal personal experiences related to gender. Given that UCL students were working in a classroom setting while MUNI students were engaging online, there were inherent differences in classroom management and the facilitation of online collaboration, which later presented challenges in coordinating COIL-based group work across the two institutions.

The MUNI teacher facilitating the MUNI students' online group work reflected on the full-scale pilot's initial phase:

> The preparation of the full-scale pilot was challenging in terms of communication between the teachers regarding the submodule content and the organization of the lessons. Uncertainties were clarified through several discussions between the teachers. The recorded videos had clear instructions that guided the students as well as the teachers on both sides throughout the course.[1]

Pre-COIL preparation

Following the first phase of the full-scale pilot, students and instructors from both institutions participated in an online videoconference via Zoom for pre-COIL preparation. During this session, participants were introduced to COIL, its purpose, and the planned activities, and they began working on tasks in international teams.

Ideally, a COIL project runs for 7 to 10 weeks and consists of five phases: (1) Pre-COIL student preparation—teachers prepare students for online collaboration within their respective classes by explaining COIL's purpose and objectives; (2) Introduction—students set expectations, meet international peers online, and familiarize themselves with the assignments and digital tools; (3) Engagement—the initial stage of student collaboration; (4) Collaboration—the primary stage involving both synchronous and asynchronous work; and (5) Conclusion—presentations of final projects and outcomes, followed by feedback and reflection (Doscher and Rubin, 2023, cited in Janík, 2024, Chap. 8).

Due to the limited time available—only two weeks to pilot the submodule—we condensed the COIL process into three phases over a shorter period: pre-COIL student preparation, collaboration, and conclusion. The content and objectives of the pre-COIL preparation were prerecorded and then jointly viewed by UCL and MUNI students during the Zoom videoconference. While MUNI students joined the session remotely from their homes, UCL students attended together in a classroom, with teachers present at both locations to provide support

[1] Author's translation. MUNI teachers responded in testimonies in the Czech language.

and clarify the purpose and objectives of COIL. At MUNI, the teacher participated online via Zoom. As discussed later, the difference in settings—UCL students meeting in a classroom as a group, while MUNI students engaged individually and remotely—introduced certain challenges in international collaboration and in managing student group work.

For most students, this was their first experience with COIL. Therefore, the pre-COIL preparation emphasized the purpose of the virtual exchange and collaboration within international teams. Due to time constraints, elements typically covered in the COIL introduction phase, such as norms of intercultural online communication, COIL tasks and objectives (including time frames), digital platforms, technology tools, and the formation of international COIL teams, were incorporated into the preparation phase (Janík, 2024, Chap. 8). However, we were unable to assess students' expectations of COIL, a component usually included in pre-COIL preparation. This omission proved to be a limitation in researching the impact of COIL on students' learning.

During pre-COIL preparation, students were informed that they would be exchanging ideas and gathering knowledge on gender issues and instances of gender inequality within their local contexts and those of their international peers. They were also briefed on expectations for international online communication, including the use of English as the working language. Given the varying levels of English proficiency among students, they were encouraged to be patient, to allow others time to express themselves, and to ask for clarification when needed. These intercultural communication skills are crucial for easing interaction, fostering a sense of inclusion, and promoting equity in online collaboration (Rubin, 2023b). Additionally, students were provided with strategies to overcome language barriers. For example, in online real-time interaction, unlike in face to face 'offline' communication, students have the advantage of taking more time to think before speaking and can use technological tools like Google Translate to aid communication.

The learning outcomes of the students' group work in COIL were aligned with the sustainable competences outlined in the submodule, particularly concerning the SDG of gender equality, and the 21st-century skills developed through COIL (Janík, 2024, Chap. 2 and 4). These outcomes included the ability to communicate effectively in English, engage appropriately with peers from different cultures, relate to other students' perspectives on gender issues, understand and analyze various perspectives on gender issues, and work collaboratively in international teams to propose solutions. Our goal was to design learning outcomes that adhered to the principles of an internationalized curriculum and met the criteria for internationalized learning outcomes (Leask, 2015).

These learning outcomes were intended to be demonstrable and achievable through COIL-related tasks across four stages. In the first stage, students were asked to individually observe and document their daily activities to identify the influence of gender in their everyday lives. This initial task utilized students' daily experiences as a basis for practicing their "noticing skills" (Corbett et al., 2024, p. 57) and exploring the intersection of gender and daily routines. In the second stage, students shared and discussed their observations within their respective institutions—UCL students met in person during regular class time, while MUNI students convened online in an MS Teams channel created for support and issue resolution. Students were

tasked with identifying differences and similarities in gender-related experiences, which they then compiled into a timeline presentation shared via Padlet[2] in the third stage.

This stage fully engaged students in COIL: working in their COIL teams, students scheduled two online sessions to compare findings, discuss cultural differences, and collaborate on solutions. Students were given autonomy in role selection within their teams, encouraging a more equitable approach to teamwork. They compared instances of gender issues across the localities as well as on a global scale, related the issues to personal experiences, and collaborated in teams to present suggestions for possible improvements. The final outcomes were presented in the form of posters in the concluding stage of COIL (see images 1-5). The tasks combined synchronous and asynchronous activities with project-based work, following established criteria for COIL tasks (Janík, 2024, Chap. 5). By allowing students to explore gender issues from their own perspectives, the tasks promoted autonomous learning and a sense of agency, while also exposing students to diverse viewpoints that could lead to intercultural learning through teacher-guided reflection. The tasks aim at interconnecting students' local experiences with the global impact pertaining to sustainability and thus should support students' sustainable competences and the 21st-century skills development.

Following the explanation of task content and objectives, the pre-COIL preparation continued with the assignment of students to COIL teams, establishment of the project timeline, and introduction to the technology tools. Teachers from both universities collaborated to form international COIL teams based on students' language proficiency, age, and prior study abroad experience (Janík, 2024, Chap. 8). However, not all criteria could be thoroughly assessed due to time constraints and limited student data. Additionally, the discrepancy in class sizes—61 students total, with 44 from UCL and 17 from MUNI—posed a challenge in forming cohesive COIL teams with balanced ratios. It is recommended for classes to be similar in size to build cohesive COIL teams of maximum 6 members and a similar ratio of students from both institutions (Doscher and Rubin, 2023, p. 193). To address this, we formed 10 teams, with most teams consisting of four UCL students and two MUNI students, and one team with a 5:1 ratio. This imbalance contributed to some of the challenges reported by students in the post-pilot survey.

Given the time constraints, the teachers determined the time frame and frequency of online meetings, rather than leaving these decisions to the students. This was because the MUNI's submodule needed to be piloted within a relatively short time of two weeks, as the full-scale pilot program included also other institutional partners' submodules that needed to be piloted with the UCL students the same semester (autumn 2023). While this approach was necessary due to the limited pilot period, ideally, students should decide on meeting times during the introductory phase of COIL, as this fosters autonomy and responsibility for the project's outcomes (Janík, 2024, Chap. 3).

Finally, as part of pre-COIL preparation, students were briefed on the use of digital platforms and technological tools. Due to time constraints and other limitations, we selected the tools and applications for students, while allowing them some flexibility in choosing their communication methods for quick meetings or task clarifications. The criteria for selecting tools included ease of access, usability, ability to facilitate online task-oriented interaction, and functionality for posting and sharing group work (Corbett et al., 2024, p. 26; Simon and Fierro,

[2] Padlet is "digital notice board for teachers and students to share posts in forms of text, documents, presentations, videos, images, audios, and links. It enables students to collaborate by posting and sharing with others their findings, project results." (Janík, 2024, Chap. 7).

2023, p. 315). For real-time interactions and presentations, we used Zoom, which facilitated screen-sharing and group discussions in breakout rooms (for further details, see Janík, 2024, Chap. 7). Zoom was also available for individual COIL team sessions, with some teams opting to use WhatsApp for immediate communication. Padlet was used for posting and sharing students' findings and for presenting final group work outcomes. Additionally, MUNI students met online on an MS Teams channel for support, as they did not have the opportunity to meet in person.

This setup proved helpful in minimizing challenges in online interaction and reducing student anxiety. The MUNI teacher responsible for online support noted:

> For communication with the MUNI students, we created a channel in the MS Teams online environment. This proved to be very useful during the actual implementation of COIL—we were able to quickly address mainly organizational uncertainties. Sometimes it was also necessary to use WhatsApp to help students resolve individual queries, such as difficulties joining a breakout room.

The following chapter describes and analyze each of the COIL stages (see Table 2), focusing on students' experiences and learning, the challenges encountered, and the pedagogical interventions employed to address these issues. The analysis is based on data gathered from the post-pilot survey, MUNI and UCL teachers' testimonies, and the author's participant observation. The analysis also includes students' selected end-products of group work in COIL teams.

COIL and its impact on the development of students' competences

COIL stage	Time	Mode of interaction
Two introductory virtual activities: Why is gender equality one of the SDGs? What are the targets of gender equality?	Day 2, 100 min	Synchronous online in 10 COIL teams using breakout rooms in Zoom. UCL students join from the classroom.
Stage 1: Creating timeline of daily routines and activities with a focus on the influence of gender	Day 3	Individual work in students' local contexts (at home, work, etc.)
Stage 2: Comparing gender-based differences and similarities in timelines, focusing on gender issues	Day 4, 120 min	MUNI and UCL students work separately: UCL students in the classroom and MUNI students online via MS Teams videoconference.
Stage 3: Sharing and discussing findings from Stage 2, focusing on cross-cultural differences	Day 5 – 10[3]	Synchronous online in 10 COIL teams using breakout rooms in Zoom. UCL students join from

[3] Due to limited time, students were instructed to meet twice during the UCL students' regular class time. Each meeting lasted for 120 minutes.

and similarities, and creating a poster-based presentation		the classroom. Some COIL teams meet independently outside of the main class videoconference.
Stage 4: Final presentation of COIL teams' posters	Day 11, 120 minutes	Synchronous online videoconferencing for the 10 COIL teams split into two breakout rooms in Zoom. UCL students join the videoconference from the classroom

Table 2: COIL structure and timeline

In a COIL project, students enter an online environment with peers they do not know and who may speak different languages (Corbett et al., 2024, p. 44). Ideally, we would provide students with more time and opportunities for ice-breaking activities to foster familiarity (see Janík, 2024, Chap. 8). However, due to time constraints, we replaced these activities with two lesson-based virtual sessions, hoping to stimulate student curiosity and engagement in their COIL teams (ibid., p. 45). The students participated in a Zoom videoconference and worked in ten breakout rooms corresponding to the ten COIL teams, under the guidance of teachers from both institutions. Two MUNI teachers facilitated online, while two UCL teachers were present on-site with the UCL students.

The first virtual activity (see Table 2) involved students brainstorming and discussing for 30 minutes within their COIL teams why gender equality is one of the Sustainable Development Goals (SDGs). They watched a video Understand Goal 5: Gender Equality (Participate, Inc., 2019) which helped them articulate how gender equality contributes to sustainable development. Additionally, students discussed barriers to gender equality and sustainable development, particularly regarding access to education, healthcare, employment, and socio-economic status. Team members decided who would post notes from their discussion in Padlet and who would summarize the team's key points in the main Zoom session within three minutes.

The students' responses regarding why gender equality is the fifth SDG were consistent across the COIL teams. Key themes included the creation of equal rights and opportunities for all, the necessity of supporting individual health and well-being, the prevalence of gender inequality in non-Western countries, the empowerment of women to foster economic growth, and the promotion of sustainable lifestyles regardless of gender. Overall, the students demonstrated a strong understanding of the interconnection between gender equality and sustainable development.

The second virtual activity aimed to enhance students' knowledge of the United Nations' targets for gender equality (United Nations, n.d.) and to raise their awareness of global issues related to gender inequality. Each COIL team received a set of facts and figures highlighting gender inequality issues worldwide and was tasked with matching these issues to specific UN targets designed to address and redress them.

The purpose of the second virtual activity was not only to familiarize students with global issues of gender inequality that they might not have previously known about but also to encourage them to relate these issues to their personal experiences and observations in their local contexts. By inviting them to share and compare aspects of their experiences regarding

gender (in)equality, we hoped to foster familiarity and mutual trust, facilitating effective collaboration in their COIL teams. After a 30-minute discussion and note-taking, the students shared interesting personal insights and stories on Padlet for others to see. For example, many teams expressed shock at instances of gender inequality worldwide, with some finding the information eye-opening. Some students related global issues to their personal experiences or cited examples of gender discrimination in their countries. Common themes included assumptions about Danish culture—such as the belief that "healthcare specialists are not educated in the treatment of trans and gender-diverse people"[4]—and Czech culture—like the observation that "pubs are often full of men while women are at home with children." Additionally, there were non-country-specific statements, such as "women do a lot of work that goes unnoticed" and "hygiene products are much more expensive for women than for men." Some team members also shared personal experiences with gender issues, stating, "We have experienced catcalling in public" and "I work in a bar, and many men call me 'honey' or 'sweetheart.'"

The two virtual activities were designed and conducted with the expectation that they would help students establish trust and mutual respect for collaboration within their COIL teams. However, this was not universally the case. As explained later, some teams and their members expressed negative feelings and frustration regarding the lack of collaboration among team members. The possible causes for these issues are analyzed below.

As noted earlier, the students' COIL work was divided into four stages (see table 2). In the first stage, students worked individually, reflecting on their daily routines and activities. They created timelines focusing on their study and work obligations, leisure activities, interactions with others throughout the day, accomplishments, and challenges.

The students' timelines served as input for the second stage, where UCL students met in the classroom while MUNI students participated online. Both groups examined their timelines to identify gender-based differences and similarities. A set of guiding questions facilitated their discussions and helped them prepare a poster presentation for their COIL teams for the subsequent work in Stage 3:

- What do girls/boys or women/men do in their free time? What would they like to do in their time? How do you think their time-use will change as they get older?
- How do workloads/study load and how people spend free time vary between the sexes and what about their mobility?
- Do you observe any differences between females and males? What do you think are the reasons for the difference? Are there underlying causes that need to be addressed? What changes do you think are necessary?

Interestingly, we observed differences in the responses of UCL and MUNI students. In most COIL teams, UCL members reported not perceiving any influence of gender on their daily activities or only in relation to leisure (e.g., male students watching football and playing video games, while female students painted their nails, spent more time on morning routines, used different social media platforms, and engaged in conversations with friends).

As one of the UCL teachers observed during the session, particularly the UCL male students claimed that gender inequality is not an issue in Denmark, while their female counterparts

[4] Both MUNI and UCL students used the English language. To maintain the students' authentic voice, the author made only minor adjustments and only in cases where understanding of the text was impeded.

"did not object". As discussed later, some female students at UCL, might have felt limited in their opportunities to state their views and assert their self-identity in front of others. However, other UCL students recognized gender issues in a broader Dutch context, noting that "household chores and childcare are predominantly done by women, as seen in our families." They expressed hopes for "greater acceptance of gender differences and laws protecting transgender and non-binary rights." Only one UCL student shared openly a personal perspective on gender, stating, "Race might also impact how we think about gender; my experience as a white trans person can be very different from that of a person of color." The UCL teacher monitoring the UCL students' work in the session added that about five UCL students in fact disclosed their bi-sexual identity for the first time ever before other UCL students, but perhaps did not feel empowered or comfortable enough to engage in discussion on such a sensitive topic.

In contrast, MUNI students shared more personal accounts and asserted self-identity on Padlet, when reflecting on their perceptions and experiences regarding gender issues. These included gaps in income and career progression, inequalities in labor opportunities, and disparities in domestic work division. While no definitive conclusions can be drawn from these findings, the different ages and experiences of MUNI students could play a role. The MUNI students included three mothers, two of whom were single parents juggling childcare, full-time work, and university studies, and they expressed their perspectives candidly: "I feel like a magnet for violence against women," "I would need more breaks at work when I menstruate," "A lot of my female friends and relatives drink wine when stressed," "There are longer queues for women's than men's toilets [in a university building]," "My friend and I often experience catcalling: men call out to us, and it's uncomfortable, so we often dress inconspicuously," and "I work at a restaurant. If I don't dress up and wear makeup, my boss gets mad at me. Customers can sometimes be rude and verbally abusive."

We expected that students would feel comfortable opening to one another, whether in group discussions or through written communication on Padlet. This expectation aligned with our reasoning that when students can personally relate to a topic and explore gender issues from their own perspectives, they will engage in more autonomous learning and increase their sense of agency regarding global gender issues and inequalities, a key task in Stage 3 of COIL. Additionally, we anticipated that during Stage 3, when students met in intercultural COIL teams to share findings from the previous stage, they would relate to one another's perspectives and develop mutual trust and respect for further collaboration. However, this was not the case for all teams, as some COIL groups struggled to engage each member equally in collaborative tasks. In her separate focus group interview with five female UCL students, the UCL teacher learnt that the students felt dominated by their male peers in the collaboration: "They [i.e. the male students] often instructed the female students what to do and did not give them the opportunity engage in full collaboration".

The unequal status of some of the student participants in collaboration probably made them reluctant to share self-identity and personal gender-related views and issues. Different perceptions of status and empowerment among the students in the collaboration could heighten their anxiety from interaction with unfamiliar others (Gudykunst, 2005) and "the new" in COIL. Furthermore, if students were denied the opportunity to affirm their self-esteem and self-identity, they could be significantly limited in intercultural learning. "The degree to which an individual feels secure in his or her identity" (Deardorff, 2009, p. 266) determines his or her intercultural competence, a critical outcome of COIL.

Likewise, students might consider personal issues too culturally different to relate to. As previously mentioned, when students are exposed to differences without reflecting on their ethnocentric viewpoints and cultural assumptions, negative experiences may not lead to intercultural learning (Guth and Helm, 2017, p. 6) and may even generate an "us" versus "them" mentality between student groups (Lee et al., 2012, p. 47). Signs of non-collaboration among MUNI and UCL students during Stage 3 of COIL might have resulted from the issues and the perception of unequal status in Stage 2. To address these and other issues, we implemented pedagogical interventions during Stage 3. The following section describes Stage 3, the main stage of COIL, the issues that arose during the students' group work, and the pedagogical interventions we implemented to mitigate these challenges and minimize their impact on student collaboration.

Students' COIL-based group work, challenges, pedagogical intervention

The third stage (see Table 2) engaged UCL and MUNI students in collaborative group work within their COIL teams. In each team, the groups of UCL and MUNI students began by presenting their posters, which showcased their findings from the second stage, followed by a whole team discussion reflecting on the cultural differences and similarities they observed. Guiding questions prompted students to consider the issues of gender inequality they had learned about and to think about potential solutions:

- What are the most important things that should change for girls/women in the cultures and localities you have learnt about (e.g., in relation to decision making/choices, access to services, mobility)?
- What barriers to change exist, and which of these should be prioritized for addressing? How?

Additionally, students were instructed to relate their findings and observations to the targets and statistics from SDG #5 that they learned about during the introductory virtual activity (see above):

- Which gender equality targets are applicable to what you have learned in your COIL team discussions?
- Do you observe any connections between the statistics from the virtual activity and the stories (including facts and experiences) shared by other team members?

COIL teams were responsible for dividing work and roles, preparing a 10-minute presentation in the form of a poster, and uploading the poster to Padlet for the final COIL videoconference in Stage 4. Ideally, during this phase, teachers would recommend the time and number of collaborative online meetings necessary for group work, leaving it to students to agree on their meeting times (Janík, 2024, Chap. 8). However, since the MUNI and UCL students had only one week to complete the tasks in Stage 3, the teachers intervened by creating a meeting plan for the students. The schedule was based on the availability of the UCL students, who needed to participate in project partners' pilots in the following weeks and thus had a busier schedule than the MUNI students, who were piloting only the Health & Sustainability submodule. Consequently, the MUNI students attended two online meetings (each approximately 120 minutes) during the UCL students' regular class times.

A problem arose when the UCL students, all physically present in the classroom, were asked to communicate in Zoom breakout rooms with the MUNI students, who were connecting virtually and individually from their homes. Although the issue of classroom noise and echoes

disrupting conversations was addressed by physically separating the UCL students into different classrooms, disparities in collaborative opportunities remained. Specifically, the MUNI students relied solely on remote communication with their team members and teachers, while the UCL students benefitted from in-person collaboration and on-site support. This discrepancy led to unmet expectations and challenges among both students and teachers.

In the post-pilot anonymous survey, some MUNI respondents expressed concerns about unequal collaboration:

> The topic for the poster was chosen for us (...) My listening English was bad, and I knew it. I wanted to chat or email with the Danish colleagues about gender and poster, but I was ignored (...) The experience was demotivating.

From the UCL perspective, one respondent stated that the MUNI students did not participate effectively in the COIL:

> It didn't really work, since the COIL students from Masaryk university didn't really participate much.

It appears that the UCL students' opportunity for in-person communication and clarification put the MUNI students at a disadvantage, limiting their access to collaboration. The author of this study encountered a similar issue as described by the MUNI respondent. While facilitating group work in COIL teams and providing online support to the MUNI students, he was called upon by MUNI members in one of the teams to address their UCL peers, who were conversing only among themselves and would not enable their microphone for the MUNI students to join the conversation. The author attempted to alert the UCL students to the issue through chat and by calling them, but they initially ignored him, later claiming their microphone was broken. It was only after he contacted the UCL teacher on-site that the UCL students turned on their microphones and included the MUNI students in the conversation. Similarly, another teacher in the MUNI team observed that UCL students did not always reflect the comments and opinions of their MUNI peers.

In the ensuing discussion with MUNI and UCL colleagues during the pilot, the author of this study concluded that the disparity in collaborative opportunities between MUNI and UCL students was the main cause of miscommunication among both students and teachers. Other factors contributing to the issues and miscommunication may include the novelty of COIL (as it was a new experience for most students and teachers) and the language barrier. Similarly to the perceived unequal status of some of the participants in collaboration and the sensitivity of the gender issues, the language barrier cannot be ruled out as a factor affecting students' communication in COIL. As the MUNI respondent above openly admitted, "My listening English was bad." Likewise, the UCL student who perceived the MUNI students as non-participatory may have been influenced by a possible deficiency in English language skills on one or both sides of the collaboration. Nonetheless, this issue did not arise in other COIL teams, where the English language skills of the MUNI and UCL students were comparable. Still, the misalignment in communication opportunities could exacerbate potential language barriers and further demotivate those students who felt excluded from the collaboration.

Perhaps more importantly, it was the novelty of the COIL experience for students on both sides that most likely contributed to the challenges and issues encountered. Fifty-nine percent of the 37 respondents in the post-pilot survey indicated that it was their first time participating in COIL, and 30% stated that it was also their first time interacting online with someone abroad.

When properly structured and facilitated by teachers, and reflected upon by students, a new experience with COIL can lead to students' intercultural learning (Guth and Helm, 2017). As explained above, COIL's objective is to build students' intercultural competences. Drawing on Deardorff's model of intercultural development (Deardorff, 2009), our attitudes toward the unknown and different can either inhibit our interaction with others or transform into respect for others, acceptance of multiple perspectives, and curiosity about other cultures. While the latter represents intercultural learning, the former was probably the experience of some of the students in the pilot, as the two respondents indicate:

> Participating in COIL did unfortunately not help me obtain other competences because it is something that is very much out of my comfort zone, which causes me to want to avoid attending as much as possible.

> It was very tiring to work in zoom and in the padlet, when some are seeing it for the first time.

Rather than maintaining a curious attitude toward other students' cultures, affirming their self-esteem and sharing personal perspectives on gender-related issues, some students likely experienced anxiety (Gudykunst, 2005) in the face of the new, unfamiliar, and unpredictable interactions in the COIL environment. In the pre-COIL preparation, we alerted students to the fact that they would collaborate with others whom they did not know and who might think differently, and that they would be exposed to various perspectives through interaction with students from other countries (Janík, 2024, Chap. 2). However, this turned out to be a one-way flow of information. Teachers on both sides of the collaboration should have created more opportunities for students to practice and experience what it is like to work with unfamiliar peers in an online environment before the full-scale COIL.

Exposing students to the new experience of COIL without adequate preparation for online interactions with peers from other cultures and languages was therefore another factor contributing to miscommunication and challenges in collaboration within some COIL teams.
One of the respondents shared:

> I think [COIL] can be integrated very well with many different topics whatever its sustainability or something else. But preparation from all countries is crucial. It might be good to meet online beforehand, so that we have time to talk about ourselves so that we have a relation to the other students and their lives. Getting to know each other makes it more comfortable for everyone. I'm okay with speaking English with people I don't know, but other people might find it hard to just switch to another language than their own.

This suggests that the students would welcome more time and opportunity for mutual interaction to establish familiarity with one another, for example through engaging in ice-breaking activities.
Quite a different opinion was expressed by one of the UCL teachers in the full-scale pilot:

> We knew from the beginning that there was no time for ice-breaking activities, which might have affected the collaboration. Still, these students are over 21 years of age, often working with children and young adults themselves. So, we expected a more mature attitude from the UCL students.

The need for creating opportunities for students to engage in less formal interactions in COIL that allow them to learn more about one another is emphasized in COIL impact reports (Guth and Helm, 2017; Helm and Velden, 2021). In our pilot, as explained above, we were limited both by time and opportunities to meet this important criterion for a successful COIL (for more criteria see Janík, 2024, Chap. 8).

The MUNI team attempted to address the issues and their possible causes through a pedagogical intervention implemented as a videoconference for students during their ongoing group work in COIL teams. The author of the study created a presentation aimed at raising students' awareness of the challenges they might encounter in online collaboration and providing them with tips on how to address these challenges.

The presentation first focused on the novelty of the COIL experience and the potential anxiety students may feel due to unfamiliarity. It explained the difference between social media networking, where students typically connect with individuals they choose and who share similar opinions and interests, and COIL, where students are tasked "to collaborate with those who often think differently from themselves" (Janík, 2024, Chap. 2).

Secondly, the presentation addressed the issue of encountering the 'unexpected' in COIL, which can arise from differences in students' expectations, namely, expectations about studying and preferences regarding who to interact with and how. The students' varying academic cultures likely influenced their expectations regarding what to study and how to collaborate. These expectations pertain to the norms and rules they agree to follow, such as who will take on leadership roles, what tasks are expected of each team member, and whether to divide tasks or work collaboratively (Caroll, 2015). Indeed, some respondents in the post-pilot survey critically pointed out differing expectations regarding knowledge transfer and collaboration in COIL:

> I would like to highly criticize the level of knowledge we have been working with. There has been no new info or lessons from the teachers, it has just been our own thoughts and experiences.

COIL aims to engage students' diversity and promote intercultural learning by centering on their own experiences, perspectives, and differences. Students accustomed to expert-centered pedagogy, which fosters the "uncritical absorption of disciplinary knowledge" (Lee et al., p. 48) and learning where the teacher is the source of knowledge and the communication flows from the teacher to students, may find working in COIL challenging. Unlike this traditional approach, intercultural learning through COIL values "students' lived experiences and situated perspectives on course content" (ibid., p. 56).

Some of the UCL students felt challenged by the novelty of COIL yet found the learning content below their academic level. As the UCL teacher observed, the students often complained "this is too difficult, we are only first year students" and moments later would claim, "the academic level is too low – we knew all about this beforehand." The students' expectations about the learning content conflicted here with the 'unexpected' and 'new' in COIL.

Rather than merely highlighting differences in the students' expectations, our goal was to explain how these differences stem from varying cultural backgrounds. This part of the presentation aimed to raise students' cultural awareness, a central component of building intercultural competence (ibid., p. 35). This awareness encompasses understanding the diverse experiences of students from different cultures and age groups, their varying perspectives on gender and discourse surrounding it, and their differing views on effective learning and teaching.

Lastly, the pedagogical intervention sought to prompt students to reflect on their learning experiences and consider two possible paths for continuing their work in COIL teams: they could either cling to their unmet expectations or embrace the new experiences and adjust to their peers. The reflection segment concluded with an inspirational quote to encourage students to maximize their intercultural learning opportunities:

> If we only interact with those who are similar to ourselves, we never have the opportunity to realize there are other ways of thinking and behaving (Saphiere et al., 2005. p. 24).

Due to the tight timeline, with less than a week to complete the task in Stage 3, we did not have sufficient time to assess the impact of the pedagogical intervention on students' group work or identify potential improvements. Although students generally viewed their engagement in COIL as positive, it is unclear to what extent this perception was influenced by the pedagogical intervention.

It must be emphasized that the disparities in collaborative opportunities were primarily caused by the differing expectations and perspectives of the teachers, rather than the students. Just like the students, the teachers came from different disciplines and educational systems, and their values regarding teaching likely influenced their vision for student collaboration in COIL (Janík, 2024, Chap. 3). The teachers in the pilot, including the author of this study, did not dedicate enough time to sharing and discussing their varying perspectives on how to implement COIL effectively and how to mutually adapt their teaching approaches to incorporate COIL attributes and objectives (Rubin, 2023b, p. 11).

As a MUNI teacher in the pilot, the author of this study observed the differences in how MUNI and UCL teachers approached monitoring and facilitating students' group work. While the MUNI teachers encouraged independent work without direct supervision, providing online facilitation, the UCL teachers tended to monitor group work more closely, likely due to their in-person contact with the students in the classroom

One MUNI teacher commented on differing expectations regarding how to structure students' interactions during COIL. She noted that the students lacked the privacy needed to discuss culturally sensitive topics:

> In terms of organization, the placement of the groups in one larger classroom was not ideal - groups interfered with each other while working and, according to feedback I received from the MUNI students, in some parts there was not safe enough space for sharing views on sensitive topics.

These discrepancies further complicated the ability of teachers on both sides to create opportunities and effectively support students while managing their anxiety during COIL. It remains unclear whether the teachers successfully challenged students' existing mindsets, encouraged them to shift their cultural frames of reference, and transformed conflicts and misunderstandings arising in group work into opportunities for intercultural learning (Lee et al., 2012, pp. 57-58). With high certainty, the teachers on both sides of the COIL did their best in turning the new experience with COIL into learning not only for the students but also for themselves. As the UCL teachers stated, the full-scale pilot was the first time they implemented COIL and they also "became learners in the process".

Students' presentation of end-products and further challenges

The simultaneous use and overlap of classroom management techniques by UCL teachers and the online management of group work by MUNI teachers also impacted the concluding, fourth stage of COIL. Two days after completing their group work in Stage 3, the students and teachers participated in a two-hour Zoom videoconference to conclude their work in COIL teams. The ten COIL teams were split into two breakout rooms and presented their findings from Stage 3. Each team viewed four 10-minute poster presentations from other COIL teams. The viewers were asked to take notes and identify three themes they learned from the activity. Each team's spokesperson, selected by team members, documented the main themes in Padlet to share with all COIL teams and teachers. The selected content of the students' presentations is analyzed and interpreted below. First, the following part evaluates the teachers'

management of the students' discussion and group work during the COIL teams' online presentations.

The UCL teachers effectively controlled and managed students' interactions in the classroom but fell short of fully including MUNI students and teachers in the discussion. The UCL teacher in charge of coordination admitted that the hybrid part of interaction was challenging and a "very ambitious part of the full-scale pilot." Rather inadequate use of technology (only the teacher in the room had a microphone, and no portable microphones were available for the UCL students to be heard by the online audience) met with a lack of training in managing hybrid interactions and as a result the online audience was neither asked questions nor given opportunities to provide comments or concluding remarks on the collaboration.

Some MUNI respondents in the post-pilot survey also commented on this issue:

> COIL is [a useful method], but it has to be done properly. Either everyone has to be on Zoom or everyone has to be in class, or the technical abilities of the teachers have to be on par or at least knowledgeable enough to be able to compensate for technical difficulties.

> I feel like the idea is great, however I would suggest better management of the debate. Maybe portable microphone so that people in Zoom can hear everything [said in the classroom]. And also motivate people in zoom to turn their cameras on so that it would feel more personal.

From the perspective of MUNI students and teachers, the hybrid format negatively impacted collaboration. The misalignment in access to information and content led to frustration and unmet expectations, especially among MUNI students.

Despite the challenges and issues analyzed above, the post-pilot survey results indicate that the COIL contributed to the development of students' intercultural competence. Seventy-three percent of the respondents (27 out of 44 students who participated in the pilot) reported that COIL helped them understand other students' perspectives on gender issues. An equal number of students also indicated that they were able to recognize both their own and others' cultural differences. Additionally, 54% of the participants noted that COIL facilitated their understanding of other students' cultures, values, and worldviews. The same percentage of respondents agreed that COIL improved their understanding of topics related to gender equality. Forty-three percent were able to connect local and global issues related to gender and sustainable development, while a smaller proportion (27%, or 10 students) reported that they understood how other students approached and resolved gender and sustainability-related problems.

The survey suggests some development in the students' intercultural competences, particularly in terms of self-awareness and cultural awareness (understanding one's own and others' cultures and perspectives). To a lesser extent, the students also achieved learning outcomes related to sustainable competences, such as the ability to compare and understand gender issues from different locations and propose solutions. However, the students' sense of agency and empowerment to explore gender issues from diverse perspectives appeared less developed. These gaps may be attributed to the challenges students encountered during the COIL experience.

It is important to acknowledge that students' intercultural competence was not formally assessed before and after the COIL (for intercultural assessment tools, see Paige, 2003; Guth and Helm, 2017; Janík, 2024, Chap. 8 and 9). The pilot relied solely on students' self-reporting, which has certain limitations, as will be discussed later.

At the same time, the final products of group work in COIL teams, particularly the posters, demonstrate a certain level of achievement regarding the learning outcomes defined in the

submodule. Based on the analysis of selected posters, the following part comments on the students' learning outcomes.

The poster titled "Why are women afraid of walking alone in the dark?" (image 1) builds on the MUNI students' experiences with catcalling and street harassment, as shared during the second stage of COIL. These experiences had an impact on the male peers in the COIL team, who reflected on their perspective and acknowledged that "most men are aware that [walking behind a woman in the dark] might make her uncomfortable or even scared, so we [i.e., the male peers] need to become more self-conscious about it." The team members collectively concluded that men should "check up on their female friends, ask if they need help, or offer to walk them home." This poster demonstrates the students' capacity for empathy and gender awareness.

Image 1: Poster "Why are women afraid to walk alone in the dark?"

The poster titled "How can we change gender stereotypes?" (image 2) provides various definitions of gender stereotypes and explains the difference between positive and negative stereotypes. It further highlights the harmful and undesirable effects of positive stereotypes, noting that "we should always think twice when holding a positive stereotype that can lead to a negative scenario." This poster illustrates the students' ability to recognize gender stereotyping and reflect on cultural assumptions related to gender discrimination. However, the poster is primarily knowledge-based, offering a detailed summary of the history of gender perception from ancient times to the modern era, including the role of the feminist movement in challenging gender stereotypes. While the poster effectively presents a global perspective on gender stereotyping—specifically linking it to SDG 5 on gender equality—it does not include the students' personal perspectives or evidence of engagement with one another's viewpoints.

Image 2: Poster "How can we change gender stereotypes?"

"The path towards equality in workspaces" (image 3) is a poster that focuses exclusively on the Danish and "Scandinavian" perspective ("In Scandinavia, we are setting a great example of financial equality"), with no apparent contribution from MUNI students. The absence of diverse perspectives on the issue suggests possible collaboration and communication problems within the team. Consequently, the poster does not meet the criteria of COIL, particularly in terms of sharing intercultural perspectives.

Image 3: Poster "The path towards equality in workspaces"

In contrast, the poster titled "How does the pay gap differ in gender in Denmark and the Czech Republic?" (image 4) showcases the authors' ability to gather data and statistics on the gender pay gap in their respective countries. However, these rich statistics are not supplemented by the students' perspectives and experiences. Moreover, the students' comparisons of the two countries lack critical reflection, fail to identify different approaches used in each country, and do not propose cross-cultural solutions. The students may have fallen into the pitfall of comparative tasks (Janík, 2024, Chap. 5), where they recognized only superficial differences and generalizations rather than arriving at a more complex understanding of people's identities and realities. As a result, this poster does not demonstrate the students' engagement with other perspectives or their intercultural learning.

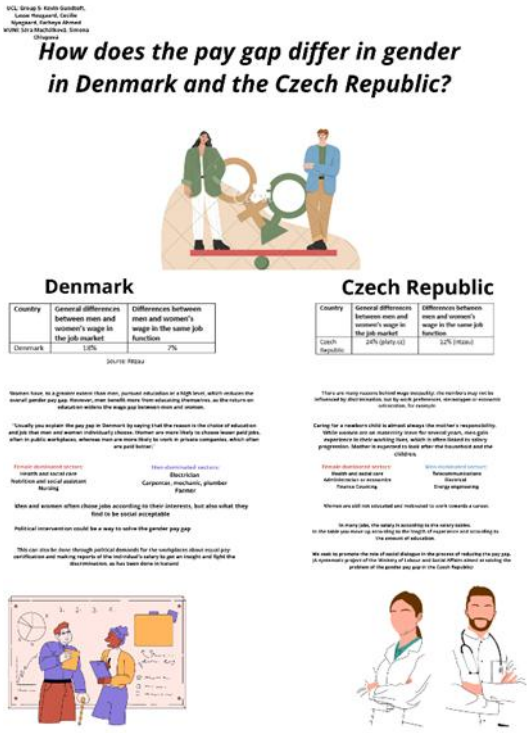

Image 4: Poster "How does the pay gap differ in gender in Denmark and the Czech Republic?"

The poster "Male workers in kindergarten" (image 5) also compares data and statistics between Denmark and the Czech Republic, supported by reliable sources from statistical offices and ministries in both countries. Unlike the previous poster, this one adds value by identifying cultural differences in the employment of males in traditionally female-dominated type of work. Specifically, the students explore differences in gender-specific job titles used in the Czech Republic versus Denmark and discuss the ethics of male conduct in kindergartens in Denmark, which are absent in the Czech Republic. This focus on nuanced differences, rather than superficial ones, demonstrates intercultural awareness and an ability to understand the complexity of the topic. However, as with the previous poster, the students did not include their personal perspectives on the issue.

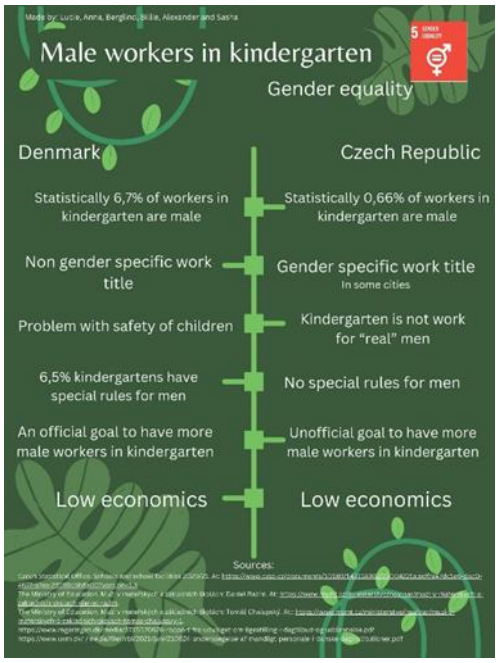

Image 5: Poster "Male workers in kindergarten"

The absence of personal perspectives and experiences on gender and gender issues was a common theme across most of the COIL teams' final presentations. Similarly, students rarely included their own suggestions for solutions or ideas for personal involvement in sustainable development. However, the lack of personal perspective and responsibility in the posters does not necessarily mean that students did not share personal stories or demonstrate a sense of agency during discussions, either online or offline. In fact, as one of the MUNI teachers observed, some students expressed a desire for more opportunities (and privacy) to share their personal concerns and views on gender and gender issues within their COIL teams. Given that listening to and learning from others' perspectives is essential for COIL-based collaboration and intercultural learning, these student comments offer valuable insights and lessons from the full-scale pilot.

The students also self-reported their accomplishments in sustainable and other competences through the post-pilot survey. The minimal evidence of agency demonstrated in the posters was reflected in the survey results: 38% of the 37 respondents felt a low degree of inspiration to act toward gender equality, 49% felt inspired to some degree, and only 14% felt highly inspired. The pilot as a whole and COIL particularly seemed to have minimal impact on the students' English language competence: 41% perceived a low increase in language competence, 43% perceived some increase, and only 19% experienced a high degree of language competence growth. It is important to note that the answers do not indicate the respondents' institutions (MUNI or UCL). UCL students used and practiced English in all the piloted submodules, and their perception of language competence might pertain to other piloted submodules as well. On the other hand, the respondents' assessment of digital competences primarily relates to the use of COIL and the results are not encouraging: 54% reported a low degree of improvement, 35% some degree, and only 11% a high degree of digital competence growth as a result of participating in COIL. Perhaps more alarmingly, 49% of the respondents admitted that COIL group work contributed little to the development of their sustainable competences,

while 38% reported some improvement, and only 19% saw a high relevance of COIL in building their sustainable competences.

Discussion and conclusion

The research findings have limitations, and no definitive conclusions can be drawn from them. First, the survey gathers self-reported data by assessing the subjects' perceived improvement in sustainable competences and 21st-century skills. Self-reported quantitative data to measure the development of respondents' intercultural, language, and digital competences is inherently subjective and, as such, should be supplemented by qualitative data in the form of interviews, testimonies, and other qualitative methods (Baroni et al., 2019, p. 15). A mixed-methods approach was our intention, but the scope of qualitative data from the teachers' interview is limited and the testimonies we received from MUNI students during COIL were mostly immediate, on-the-spot responses to challenges and requests for teacher support rather than post-COIL reflections on the experience. Indeed, a significant limitation in the research design lies in the lack of pre-test and post-test data collection approaches. Due to time and other constraints, as explained above, we were unable to run a pre-COIL and post-COIL survey to monitor students' progress and measure improvements more accurately based on data from the post-COIL survey. Furthermore, the survey, designed by a team of scholars from all four project partners designing the *SustainComp* curriculum, asks general questions about students' perceived improvement of competences across all project partners' submodules. For example, "Did you have an outcome from participation with regard to intercultural competences (interacting with students from another country)?" To gain a better understanding of the impact of COIL and the learning content of submodule(s) on students' competences, instruments that measure specific competences—digital, intercultural, and language—need to be included in the research methods (see, for example, Baroni et al., 2019, pp. 16-17). Additionally, the anonymous survey fails to distinguish between MUNI and UCL respondents, and possible differences in impact between the two cohorts could only be inferred from two open-ended responses: "Did participating in COIL help you obtain other competences?" and "How can the COIL method be integrated into the educational materials?" The students' answers revealed the issues and challenges in COIL that were interpreted above.

Lastly, the limitations in researching the impact of COIL could be significantly reduced if more qualitative data from interviews with the UCL and MUNI teachers were available. However, this limitation is partly mitigated by the author's participant observation. The author's previous experience with multiple COILs and involvement in the design, preparation, and conduct of the COIL in this study, including negotiations with the UCL teachers and the facilitation and monitoring of the students' work, contributed to the findings on the impact of COIL, particularly regarding the issues and challenges experienced by the students and teachers.

In conclusion, the gathered data helped identify the issues and challenges that impacted the students' and teachers' work in the pilot and to identify their possible causes. The issues included discomfort and possible anxiety from participating in COIL, students' lack of collaboration and trust on both sides, and unequal collaboration when some students felt excluded from COIL team group work. These issues can be attributed to the following:

- The limited time of 2 weeks for the pilot, during which pre-COIL student preparation, collaboration in COIL teams, and final presentation of the team's end results had to be accomplished.

- The large class size of 61 students, with 44 UCL and 17 MUNI students, resulting in disproportionate team compositions of 4 UCL to 2 MUNI students and, in one case, 5 UCL to 1 MUNI student.
- Differences in age and experience between MUNI and UCL students, coupled with insufficient time for students to learn about each other's differences.
- The novelty of the COIL experience for most students and the absence of ice-breaking activities to help students establish familiarity with one another.
- Differing expectations among students, including expectations about learning and different academic experiences.
- Differing expectations and perspectives among teachers about education and how to teach, coupled with limited time for negotiation on 'how to COIL.'
- Differing expectations about student autonomy in COIL: MUNI teachers provided online facilitation and relied on students' independent work, while UCL teachers tended to monitor group work more closely.
- Disparity in collaborative opportunities between MUNI and UCL students: MUNI students had to rely solely on remote and virtual communication with both team members and teachers, whereas UCL students benefited from in-person collaboration and on-site teacher support in the classroom.

The disparity in access to information and structured interaction was perhaps the most significant cause of MUNI students' lesser involvement in collaborative tasks. MUNI students had different access to information and a differently structured interaction than UCL students and, as a result, did not feel included in COIL. However, this is not an isolated issue. A similar problem was identified by the Evaluate Group in the report on the impact of COIL on 1,018 students from 16 countries (Baroni et al., 2019, p. 3). The issue concerned a discrepancy in the structure of interaction during the videoconference in the final stage of a COIL project: some teachers required their students to work in small groups using videoconferencing tools such as Zoom, while others organized 'class to class' videoconferencing (ibid., p. 78). Consequently, as one of the interviewed teachers noted, "in the final session, [my partner teacher] tried to get as much out of the conference as possible, and her students had hundreds of questions, while my students didn't have time to ask any" (ibid., p. 80). Similarly, during the final videoconference in stage 4 of the COIL, the MUNI students and teachers who joined the event online were neither asked questions nor given the opportunity to comment on the collaboration.

Other possible causes of the issues that arose in the full-scale pilot were:

- The perceived unequal status of some of the student participants in collaboration and the reluctance (or the lack of opportunity to) share self-identity.
- The sensitivity of the gender issues, mostly shared by MUNI students, as opposed to those shared by UCL students, could have widened the gap between the two cohorts.
- The language barrier in connection with the misaligned structure of interaction and discrepancies in communication opportunities.

The students' perceptions of COIL, including the challenges and issues as reflected by both the students and the teachers, significantly contributed to the creation and design of a concise Instructor's Guide for Collaborative Online International Learning (Janík, 2024). The guide addresses these challenges and provides tips on how to counter them. More specifically, the third chapter, "First steps before COIL," examines the situational variables affecting the preparation of COIL, including class size ratios and experience with COIL, which also impacted the

full-scale pilot. The chapter also cautions COIL teachers and designers to share and deliberate on each other's expectations about teaching and 'how to COIL.' The sixth chapter, "Instructor's roles," is inspired by discrepancies in the structure and facilitation of student interactions and emphasizes how a COIL instructor's roles differ from those in traditional classroom settings. Lastly, and equally importantly, Chapter 8, "Running the COIL," offers multiple pieces of advice on how to prepare students for COIL and create opportunities for online socializing through ice-breaking activities, while Chapter 9 shares examples of quantitative and qualitative research methods to measure the impact of COIL on students' learning outcomes.

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