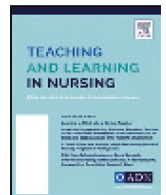




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## Research

## Speaking care: a collaborative online international learning experience in English with future nurses and pharmacists

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## ABSTRACT

**Background:** Collaborative Online International Learning (COIL) offers an inclusive approach to internationalisation by connecting students and faculty across borders through virtual teamwork. In health education, COIL promotes linguistic, intercultural, and interdisciplinary competencies essential for international and inter-professional communication.

**Aim:** This study examined how collaborative COIL activities – Padlet introductions, videoconferencing, poster design, and reflective writing – supported ‘Technical English in Health’ learning and soft skill development across Portuguese Nursing and Belgian Pharmaceutical Sciences students.

**Methods:** A qualitative case study design, aligned with the Standards for Reporting Qualitative Research, was used. Data from 29 IPV (Portugal) and 27 UMONS (Belgium) students were collected through observation, learning portfolios, and collaborative outputs, then analysed via reflexive thematic analysis.

**Results:** Findings indicated that COIL enhanced students’ technical English proficiency, teamwork, and problem-solving skills while fostering cultural awareness and interprofessional communication. Despite challenges in coordination and communication, participants reported increased confidence in interdisciplinary collaboration and patient education.

**Conclusions:** COIL represents an effective pedagogical strategy for developing linguistic and intercultural competencies in healthcare education, enriching students’ readiness for international professional contexts.

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## Introduction

In today’s globalised and interconnected world, the ability to communicate in foreign languages, especially English, is increasingly recognised as a crucial skill across various professional fields (Amante, 2025). In Higher Education, this trend has gained momentum, as institutions seek to internationalise their curricula – hence, broadening programmes delivered in English (Amante & Rodrigues, 2025) and expanding global cooperation. In addition to being a key tool for communication and knowledge transfer, Coleman (2006) argues that the spread of English in European Higher Education is driven by factors such as the rise of Content and Language Integrated Learning, internationalisation, staff and student mobility, the dominance of English-language research materials, and the growing emphasis on graduate employability in international markets.

This argument becomes especially urgent in healthcare education. As healthcare becomes more globalised, practitioners must be equipped to operate in diverse geographical, linguistic, and sociocultural settings, while maintaining high standards of care, patient

satisfaction, and service quality (Moreira-Cáceres, 2025). English is essential for interacting with international colleagues, accessing the latest research, and providing care to patients from various backgrounds (Socha-Dietrich & Lafortune, 2019). From a linguistic standpoint, nurses, in particular, are also expected to skilfully shift between different linguistic registers, interpret culturally sensitive language, and adapt communication strategies to patient needs (Shanavas, Singh, Vargheese, 2024). Research shows that culturally sensitive communication improves treatment adherence and patient engagement (Pira et al., 2025; San Miguel et al., 2006), and nurses are particularly well placed to bridge linguistic and cultural gaps. Their role in mediating between medical knowledge and patient understanding underscores why English for Health Purposes should be central in nursing curricula (Garone & Van de Craen, 2017).

However, while European nursing faculty generally demonstrate good cultural awareness, their practical application of culturally competent behaviours remains limited, with higher competence linked to international experience, and participation in programmes like Erasmus+ or internationalisation at home (Visiers-Jiménez et al., 2025). Scholars further suggest that integrating the humanities into healthcare education can strengthen emotional intelligence and ethical

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sensitivity in clinical practice (Malik et al. 2025; Rajabpour, Rayyani & Mangolian shahrbabaki, 2019).

Sceptics may argue that adding language training to already dense healthcare programmes risks overburdening students, yet evidence suggests the opposite. Ng and Cheung (2024), drawing on the work of Antić and Milosavljević (2016), emphasise that needs analysis lies at the heart of any successful English for Specific Purposes or English for Medical Purposes course. In healthcare, this involves developing the ability to understand complex medical texts, acquire specialised vocabulary, and engage in spoken interaction through role-plays, pair or teamwork, and scenario-based tasks that simulate real-life clinical exchanges.

Healthcare training must therefore combine domain knowledge with practical communication skills and professional values. Contemporary pedagogical models increasingly link professional competence development with measurable outcomes, such as interprofessional and transcultural collaboration, ethically sound decision-making, and the promotion of health equity through accessible and patient-centred care. This perspective is reflected in the work of Corrizato and Goracci (2013) as well as, more recently, Liu, Cai, Guo and Yang (2023), who criticise terminology-focused, writing-based instruction and instead advocate for a target-situation-based model that develops grammatical, sociolinguistic, and strategic competence through four stages: activation, analysis, practice, and feedback. Their framework demonstrates how language training can be aligned with authentic communicative tasks such as patient admission, history taking, or discharge education.

The COVID-19 pandemic further emphasised these needs of cultivating practical, relational, and intercultural skills in medical research and education (Alizadeh & Pourghane, 2023; Wu, Leask, Choi, Unangst & de Wit, 2020), as it pushed Higher Education into digital delivery and disrupted mobility and partnerships. This, in turn, called for swift cross-border communication, healthcare leaders who combined expertise with cultural awareness, rapid and coordinated public health measures, and joint scientific work (Wu et al., 2020).

Obstacles such as unreliable Internet connectivity, insufficient access to devices, and uneven preparedness complicated learning during this period. Institutions implemented a range of technological solutions, including online and blended learning, as well as flipped classroom models, but these also revealed difficulties in accommodating diverse learning preferences, managing time effectively, and adapting teaching strategies to suit online frameworks (Adedoyin & Soykan, 2020; Ali, 2020; Joseph et al., 2024).

Despite these challenges, Collaborative Online International Learning (COIL) emerged as a valuable alternative to traditional in-person interactions, enabling students to continue engaging with international peers and sustaining cross-border educational experiences. This transition to online collaborations not only preserved academic continuity but also opened up new opportunities for innovation in teaching methods and global connectivity (Barbosa & Ferreira-Lopes, 2021). In nursing education, however, COIL remains underused, with interactive and cooperative methods still limited (Pozzi et al., 2023). Expanding such opportunities could strengthen interprofessional and intercultural competence among nursing students.

In sum, integrating English for Health Purposes into nursing education through COIL (Chu & Takahashi, 2024; Hackett et al., 2024) supports professional excellence and prepares students to address global health challenges (Stötzer & Farkas, 2025, Shaw, Turick & Kie-galdie, 2025; Galan-Lominchar et al., 2024). Interprofessional collaboration does play a vital role in this context: studies show that teamwork across disciplines can overcome historical hierarchies, communication barriers, and cultural differences (Ahmed et al., 2025). As Ødegård et al. (2025) note, drawing on the World Health Organisation's (WHO) 2010 and 2022 reports, the concept centres on

students from two or more professional backgrounds learning *with*, *from*, and *about* one another to enhance teamwork and service delivery. Evidence shows such collaboration enhances comprehensive patient-centred care, enhancing clinical outcomes and fostering a more integrated healthcare system (Mostafa et al., 2025; Salazar Preciado, Mazar & Haack, 2025). As Kamal et al. (2025) also remind us, interprofessional education offers numerous advantages, such as greater mutual respect, clearer understanding of roles, better communication, increased job satisfaction, and fewer errors, as evidenced in the study discussed below.

#### Rationale for this Study

In light of this background, this article aims to present a case study focusing on interactions between Nursing students from a Portuguese Higher Education Institution, the Polytechnic University of Viseu, known as IPV, and Pharmaceutical Sciences students from a Belgian one, UMONS. By carrying out a COIL approach, we illustrate an example of interprofessional education that demonstrates how integrating real-world contexts into English for Health Purposes can contribute to improved technical vocabulary acquisition, sharpened critical thinking, greater cultural competency, and the development of effective communication skills in diverse healthcare settings. Thus, this study is guided by the following research question: In what ways does participation in a COIL-based project provide opportunities for students to use English for Health Purposes, develop intercultural communication skills, and engage in interdisciplinary collaboration in healthcare education?

In fact, COIL projects, a form of Internationalisation at Home, connect students and faculty from different cultural and academic backgrounds through virtual collaboration, as previously addressed. As defined by the SUNY COIL Center (2024), COIL involves professors working together to design a learning experience where students engage in intercultural collaboration to complete course tasks. These modules, typically lasting a minimum of five weeks, can be integrated across various disciplines, particularly in interdisciplinary settings, and are a graded component of the participating classes. Even though other approaches, such as telecollaboration and e-tandem, also fall within the broader concept of Virtual Exchange, as O'Dowd and Werner explain (O'Dowd & Werner, 2024), we intend to focus on this structured and widely recognised method, as its benefits are manifold. For students, COIL enhances language proficiency, fosters teamwork capabilities, and develops essential intercultural skills – all without requiring travel abroad. It also promotes active learning, digital literacy, and collaborative problem-solving skills, making it an invaluable tool for institutions aiming to enhance their internationalisation efforts (Hackett et al., 2023). Faculty also benefit, gaining exposure to international best practices, innovative teaching methods, and global expertise, which foster adaptability and forward-thinking within the institution. These initiatives align with the European Universities Initiative and offer a more inclusive and flexible approach to achieving international mobility in Higher Education.

The COIL project described below does exemplify this approach by bringing together students from the two aforementioned fields within healthcare – Nursing and Pharmaceutical Sciences – to collaboratively create patient education materials in English.

IPV's motto, "From IPV, we see the world", reflects its commitment to equipping students with the skills and perspectives needed to thrive in today's interconnected world. This vision emphasises the importance of bridging local education with international standards and practices, ensuring that students can seamlessly contribute to and excel in the international workforce, as we intend to demonstrate in the following sections of this study.

## Methodological Approach to Practice

This COIL project was approved for ethical clearance (32/SUB/2024), and the study's design and findings adhere to the Standards for Reporting Qualitative Research (SRQR), as outlined by O'Brien et al. (2014). This research adopts the case study methodology based on the framework developed by Creswell and Creswell (2018), an investigative approach widely applied across various disciplines to achieve a deep understanding of specific events, actions or processes. Harrison et al. (2017) similarly highlighted that the case study method enables researchers to thoroughly examine a problem within its specific context, aiming to understand it from the participants' point of view. This approach is particularly well-suited for analysing the impact of Collaborative Online International Learning (COIL) on Nursing students engaging in virtual exchanges with Pharmaceutical Sciences students. The participants included 29 first-year students, enrolled in a Portuguese Nursing Degree programme, who opted for Technical English in Health as their elective course unit in the second semester.

Additionally, 27 Belgian Pharmaceutical Sciences students in their third year participated, having expressed interest and availability to join the COIL project as part of the course unit entitled V-LANG-761 Transdisciplinary Aspects of Pharmaceutical Thematics (CLIL Course). These participants came together through a unique connection: their English Professors had previously engaged in an online international conference about linguistic and intercultural competence for a globalised world (2023). This collaboration was facilitated by the affiliation of both institutions with the European University for Customised Education (EUNICE) Alliance.

The COIL project facilitated virtual collaboration among students from IPV and UMONS, utilising various online platforms to support joint activities. These included Padlet for interactive content sharing, Zoom Colibri for real-time video conferences, Canva for collaborative and creative poster creation, EUNICE Moodle accessed through Edugain for a centralised learning management system, and social media messaging apps such as Instagram for informal communication and chatting. Back in 2015, Hajtnik et al. (2015) noted that social media had already become central communication tools for companies, public institutions, and individuals, with their relevance projected to grow sharply in the years ahead. That prediction has more than materialised and, today, such platforms are even more deeply integrated into everyday personal and professional interaction. In our case, Instagram was not suggested as a tool; instead, students were provided with Moodle, a secure learning management system offering forums and other interaction features, as mentioned. Yet, they gravitated toward Instagram group chats of their own accord, perceiving it as a natural, intuitive space for discussion and collaboration. This reflects the extent to which social media has become embedded in communication habits, even when more secure, institutionally approved platforms are available. This is not surprising, though, because research has demonstrated that using social media for project-based learning greatly benefits students' academic outcomes and satisfaction, and the integration of technology in education generally boosts learning, engagement, and the sharing of information (Inderawati et al., 2024; Amante, 2023; Lopes et al., 2023). It's important to note that, in this study, the Instagram materials were used for research purposes as they had been extracted from students' portfolios.

Qualitative methods were adopted to gather comprehensive data, including participant observations, task development such as oral presentations, recordings of student interactions during poster creation, and the above-mentioned reflective portfolios.

Participant observation was conducted by the instructors, who were embedded in the project as facilitators and observers. The Nursing instructor-researcher took detailed field notes during

synchronous sessions and reviewed student interactions on the previously mentioned digital platforms. These methods aimed to capture detailed insights into Nursing students' perceptions and experiences throughout the project, highlighting the educational impact of this innovative learning approach. This aligns with Amante et al. (2021, p. 222), who, in their exploratory research, employed a descriptive, qualitative content analysis (QCA) methodology, stating: "Being a case study, we believe this allows the researchers to explore students' perceptions of their own learning while providing insights into their collaborative experience and co-construction of knowledge." A thematic analysis was conducted following Braun and Clarke's (2021, 2022) six-phase framework, chosen for its flexibility and suitability in identifying patterns across a qualitative dataset. The analysis was inductive in nature, meaning it was data-driven and not guided by a pre-existing coding frame. The process involved a cycle of familiarisation with the data, generation of initial codes, theme development, review and refinement of themes, and the final articulation of findings. Through this iterative process, the researcher identified recurrent patterns related to students' learning, intercultural collaboration, and language use. The analysis also aimed to go beyond the manifest content of the student reflections and interactions to interpret underlying meanings.

By choosing a qualitative approach, the instructor-researcher prioritised the in-depth exploration of Nursing participants' perspectives over quantitative measurements, recognising the value of rich, detailed narratives that reflect the intricacies of the educational process. This aligns with the understanding that, in qualitative research, the researcher is not merely an observer but an active participant, engaging with the research environment and participants (Dodgson, 2017).

Reflexivity was embedded throughout the study via reflective notes maintained by the instructor-researcher, which served both methodological and pedagogical purposes. In parallel with these reflective practices, strict attention was paid to ethical considerations. Informed written consent was obtained from all participants, including explicit permission for the use of their images in Figs. All data were anonymised, securely stored in institutional password-protected systems, and handled in accordance with GDPR regulations.

## Results

The qualitative data collected from collaborative tasks, Nursing student portfolios, and instructor field notes were analysed using reflexive thematic analysis, following Braun and Clarke's six-phase approach, as mentioned. The findings are presented below, organised around six overarching themes that reflect both the stages of the COIL project and the patterns identified through thematic analysis, each supported by illustrative excerpts, as well as pictures or other relevant data sources, with further discussion provided in Section 4. The inclusion of direct student quotes throughout the findings contributes to grounding the interpretation in the participants' own voices and strengthens the credibility of the analysis.

- Building a cross-cultural community through informal asynchronous introductions

Platforms such as the Padlet wall created on EUNICE Moodle (cf. Fig. 1, below) served as the starting point for teacher and student introductions. Students were encouraged to create posts presenting personal and academic backgrounds, fostering a sense of community and shared purpose. They could comment on each other's posts, ask questions, and engage in discussions. This initial phase helped break down barriers and build rapport among participants, setting the stage for more effective collaboration, as one student noted in his portfolio

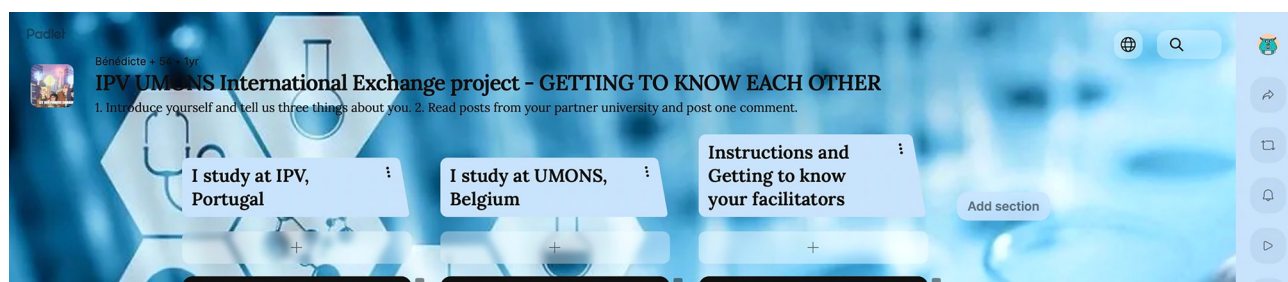


Fig. 1. Padlet wall on the EUNICE Moodle.

reflection: “It felt more natural when we saw each other’s posts. It helped me feel like I already knew them before we spoke live” (Group 2, Portuguese student). An even more illustrative example of how introductions adhered to an informal format can be found in the following excerpt from Group 1’s portfolio, specifically in the section they titled “First stage: Getting in contact”:

After we posted a little introduction about ourselves (...), including our hobbies, favourite foods and interests we got reached quite quickly by one of our partners (...). It was interesting because, we had read her post and we found her quite amusing, she seemed like a very sweet person. We spent some time getting to know her before we suggested that we worked together on the poster since she was one of the firsts to contact us. After a couple weeks, (...) presented us to the rest of our colleagues, which concluded our group. In the beginning we spent some time asking about each other’s countries, cultures, courses, and hobbies. We ended up agreeing on doing amoxicillin since it’s a drug that all of us knew well and its one commonly used in the clinical practice. We scheduled a meeting via zoom on our Instagram group, since that’s where we opted to communicate through. (sic)

Beyond the Padlet wall used for initial introductions, community building was intentionally supported through a dedicated Moodle Forum, which served as the central locus for sustained communication, collaborative problem-solving, and peer support, as Group 4 explains: “In order to form a team, (...) a forum/chat room (...) was created on (...) Moodle. (...) In our group, we didn’t have any trouble with the students from Belgium, we got along very well, so the (...) students suggested that we should do our work about penicillin...” Consistent with Garrison, Anderson, and Archer’s (2000) Community of Inquiry framework – and confirmed by more recent studies such as, for example, Suharno, Suherdi, and Gunawan (2023), which showed its effectiveness in fostering engagement and improving English language competency in secondary school contexts – the Forum fostered both cognitive and social presence by encouraging participants to post comments and questions, initially as individuals and later as representatives of their groups, thereby enabling an ongoing exchange of ideas.

Prior to formal group formation, students were provided with structured prompts to initiate contact, often leading to further exchanges via chat or virtual meetings. These strategies, combining procedural scaffolding with opportunities for informal relationship-building, align with cross-cultural collaboration literature that emphasises early engagement as a foundation for trust and shared understanding (Du et al., 2022; Ononiwu, 2021). However, while the forum succeeded in facilitating practical coordination and sustaining dialogue, the degree to which it nurtured deeper interpersonal bonds varied across groups, perhaps explaining why some students started using informal channels, such as Instagram, as seen and further described below, to foster a more personal and immediate form of connection.

- Informal digital communication as a bridge across cultures

Once groups were formed, communication shifted primarily and naturally to Instagram group chats, as previously explained. This platform offered a more informal and continuous means of interaction, enabling students to maintain constant contact, share updates, and coordinate tasks efficiently. The familiarity and ease of access to social media tools helped bridge any initial hesitations and discomfort and promoted a more dynamic and spontaneous exchange of ideas, as illustrated in Fig. 2, which was extracted from a Nursing group’s report.

Despite having the opportunity to hold videoconference calls through institutionally supported platforms such as Zoom Colibri or Microsoft Teams, students often opted for alternative channels, like Instagram, Facebook Messenger, and Google Meet. This is evidenced, for instance, by Group 5, when they described Task 2 in their portfolio:

On April 24th, we held our group meeting through Google Meets to discuss the conception of our upcoming poster. The meeting was planned to ensure everyone could share their ideas and contribute to the content of the poster. During the meeting we suggested a layout design and each member presented some ideas about the content that led us to the final result. We assigned specific tasks to each team member, ensuring that everyone had a clear role in the poster creation process. We also took some time trying to know each other and share interests and curiosities about our lives. This informal part was important to help our team bond and improve our communication skills in a different language. (sic)

This tendency suggests that, while official tools provided the necessary technical infrastructure, the students favoured platforms that were felt as more familiar, accessible, or socially embedded in their daily lives. Within the Community of Inquiry framework mentioned above, this behaviour can be interpreted as an attempt to strengthen the social presence component, compensating for limitations in the interactional warmth or spontaneity afforded by institutional tools. In this way, students actively bridged formal and informal communication spaces to support both collaborative tasks and the cultivation of a cohesive learning community.

- Interdisciplinary learning through collaborative poster creation

Afterwards, the process of creating the poster involved several stages, each requiring different levels of interaction and providing rich ground for interdisciplinary learning.

The division of tasks was based on the students’ areas of expertise: nursing students focused on patient care and effective communication for the holistic management of health conditions, while pharmacology students provided detailed insights into the medication, including its mechanism of action, safety considerations, and side effects. This collaborative effort not only enhanced their technical knowledge but also improved their ability to convey critical

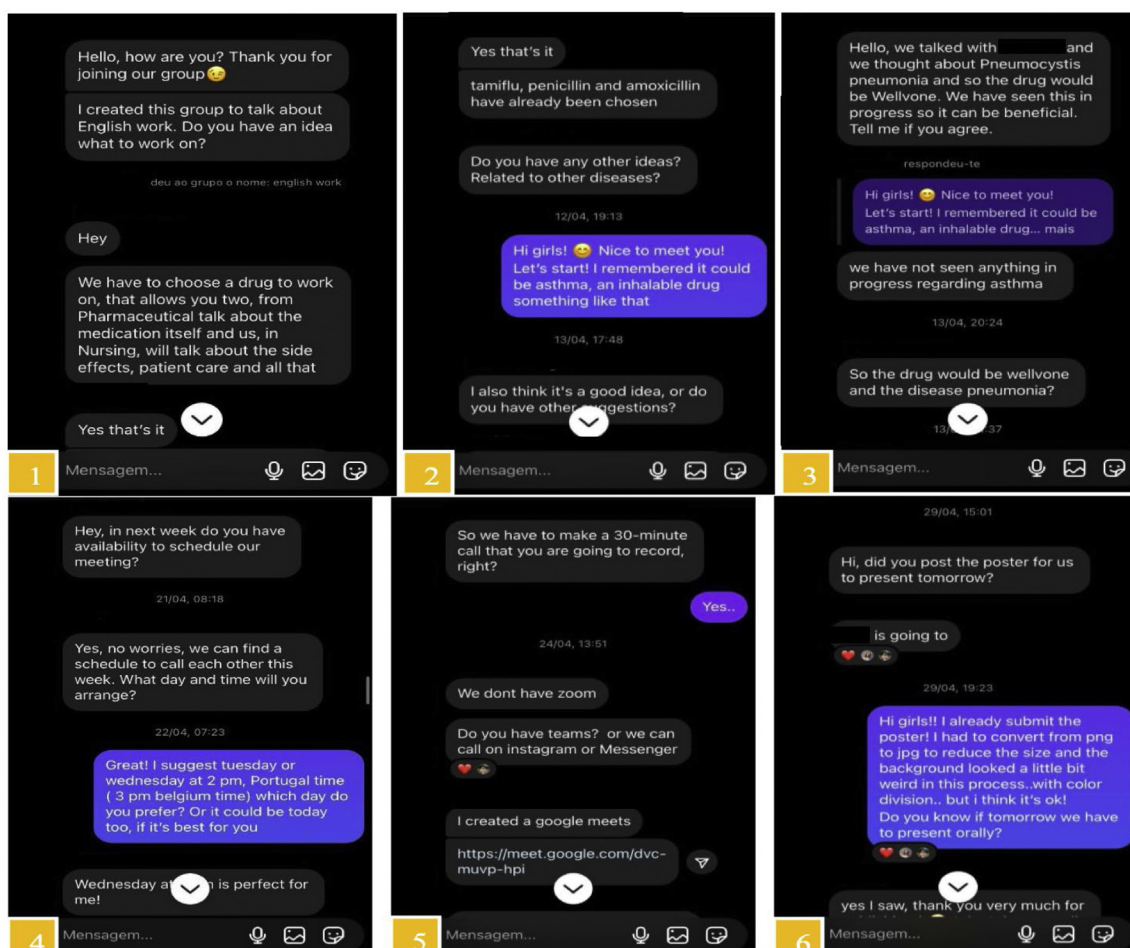


Fig. 2. Screenshots of an Instagram chat, in order (1-6), as an example from one of the reports by Nursing students.

health information in a compassionate and comprehensible manner. Group 1 provided support for this, as illustrated in the passage below:

On the first meeting, we spoke about the organization of the poster, and the information we thought was more important for us to include, since in our opinion the poster had to be synthesized and simple to understand for everyone. We wanted to make sure the poster had both the scientific aspect but also the nursing aspect which is equally important. We then waited on getting the information about amoxicillin from our colleagues, it came rather quickly which showed the great interest they had on helping us with this work. We scheduled another meeting so that when we were done putting the information, they had given us, we could get their opinion on the structure and on the information, .. (sic)

The same principle of communicating critical health information clearly to all target audiences was also demonstrated in other portfolios, such as by Group 4:

As nursing students, we had to search about the «nursing way» to use the penicillin, like the administration, what it is used for and the side effects.

The pharmaceutical students had to research about the mode of action, when it was discovered, its chemical formula and the effects of using these antibiotics.

We agreed on making a simple poster about penicillin, so everyone can understand it. We used the platform called Canva so each of us can edit it. (sic)

Another portfolio emphasised certain setbacks, but summarised the collaboration between the two groups as follows: “[they] were cooperative with the creation of the poster and provided useful information about the chosen drug giving the fact that we, nursing students, didn’t know much about the drug at the time” (sic).

The collaborative work on Canva enabled all team members to contribute to the design and content of the poster. This platform’s user-friendly interface facilitated real-time updates and feedback, ensuring that the poster was both scientifically accurate and visually appealing. To create the posters together, the students met online (cf. Fig. 3), and each international group’s first video call was recorded. These meetings, although initially marked by shyness, evolved into productive sessions where students discussed their progress, shared ideas, and provided feedback on the poster’s content and design. Several groups highlighted this transformation in their reflective reports, as exemplified by Group 3: “Initially, the atmosphere was a bit awkward, and we were shy, as we were meeting face-to-face for the first time. However, this quickly changed as we began to interact more freely” (sic). Reflecting on their collaborative efforts and the development of their project, Group 1 shared the following insights about their experience:

After the meeting we ended up including a little more of the nursing component since we thought it lacked it, in the nursing world, it’s important to give special attention to the Human aspect, since we work with people who need to always understand in what way and how the medication will affect their personal life’s. (sic)

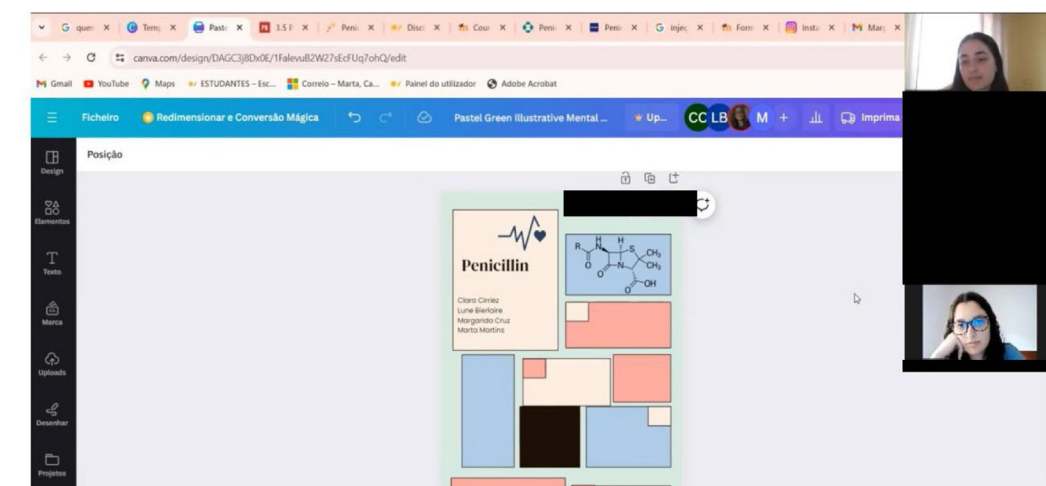


Fig. 3. Collaborative video call between students from IPV and UMONS using Canva to create their poster.

- Joint session, challenges and the way forward

One of the key moments was the joint presentation of posters during a synchronous Zoom session, which started with warm-up activities prepared on Woodclap. Despite the logistical challenges such as coordinating across different time zones and dealing with technical issues, the Belgian and Portuguese students' combined efforts were successfully showcased, highlighting the strengths of their interdisciplinary and cross-cultural collaboration, as the following testimonial extracted from Group 7's report makes clear:

One day, our class went to the computer room where we would all be on videocall with all the students for Belgium. When our English teacher came to us with her laptop, she requested us to present the poster. Luckily, our Belgian colleagues, [X] and [Y], were on call so we could do it all together. It was nice people acknowledged our work and it was a pleasuring feeling to know we could make our classmates learn a bit more about heart failure. (sic)

Among many other groups that reflected on strengths and weaknesses observed during the COIL project, one group summarised its findings and, seeing beyond the difficulties, concluded that the experience was transformative, highlighting the need for more institutions to adopt similar initiatives to enhance global learning and collaboration among students:

... not always understanding each other's cultures perfectly. We learned that in Belgian universities there's something called "Blocus", which is a period without classes where they are supposed to just be studying. This posed a significant challenge for us, as we had to balance our poster project and schedule an online meeting around their study commitments. (...) Putting apart those issues, this initiative offered an holistic learning experience that extended beyond the boundaries of traditional academic pursuits. It fostered academic excellence, cultural understanding, and social connections, leaving participants enriched and inspired. The memories, friendships, and lessons learned from the project will continue to resonate in participants' lives. As such, it deserves to be known and embraced by universities worldwide. (sic, Group 6)

Nonetheless, not all groups had an entirely positive experience, as this comment, by Group 7, demonstrates, indicating that the group had to turn to the professor for support: "During the initial stages of the poster, there was great difficulty regarding communication. Later,

an e-mail was sent by us to establish contact, but we did not receive any response. Therefore, we decided to communicate our problem to the Teacher to find a solution." Other communication-related challenges were also reported, as shown below:

Even though we tried to create a more informal conversation, we noticed that our (...) peers didn't feel as comfortable as we did, and they didn't want to turn on their cameras either. We feel that this situation made the meeting a bit awkward and diffculted the process of communication, networking and sense of interest. (sic)

However, despite these complaints, the Portuguese members from the group above remained undeterred. These challenges highlight the importance of ongoing attention to collaborative processes and intercultural communication.

- Feedback, language development and embracing mistakes

Regarding the posters themselves, students selected a range of drugs to focus on, including Amoxicillin, Fenoterol, Oxytocin, Furosemide, Prednisone, Carbamazepine, Atovaquone, Cotrimoxazole, Sulfadiazine, and Penicillin, among others. This diverse selection allowed for a comprehensive exploration of various medications, their mechanisms of action, safety considerations, and potential side effects. For nursing students, it provided a valuable opportunity to learn new vocabulary in context and to refine their communication skills with patients through role-playing different scenarios when they had to present the poster. For instance, Group 4 noted how content acquired earlier in Portuguese was mobilised for use in an international setting. Besides this, new technical terminology relevant to their field was also learnt: "In this work we were able to mobilize previously acquired linguistic knowledge and apply it in a new learning situation related to our professional domain. This work also enabled us to develop technical vocabulary in English necessary for communication in health."

This included the ability to adapt their language and register to convey complex medical information in a clear and empathetic manner. As previously mentioned, this ultimately ensures that patients fully understand their treatment plans and feel comfortable with the care they receive.

Even though the posters resulted in very interesting products, as shown in Fig. 4, we noticed a few mistakes that did not compromise the overall quality but highlighted areas for improvement. These issues ranged from minor typographical issues (e.g., "amoxicilin"; "dificulty breathing"; "complemntary exams"; "dever") to

**HEART FAILURE**

**Heart failure happens when your heart doesn't pump enough blood for your body's needs.**

**The Role of Nurses**  
Nurses play an important role in educating the patient, managing the symptoms, monitoring vital signs, offering emotional support, emergency responses and on the administration of proper medication. All of this while collaborating with a healthcare team and building a unique connection with each patient.

**Communication Strategies**  
Communication with patients with heart failure requires a compassionate, clear, and supportive approach. A nurse should show empathy by recognizing the impact of heart failure on the patient's life. Offer support and reassurance, and validate their emotions to build trust and create an open environment where patients feel comfortable expressing their concerns.

**Patient Preferences**  
By openly discussing their preferences with their nurse, patients can actively participate in their care and ensure that their treatment plan aligns with their individual needs, values and goals. For example, patients may have cultural considerations that impact their ability to adhere to dietary recommendations for heart failure management. They can discuss any challenges they face and work with the nurse to develop a sustainable meal plan.

**Furosemide in treatment of heart failure**

**Furosemide**  
Pharmacological class: Loop diuretic  
Class: Non-antibiotic sulfonamide  
Anthraniolic acid derivative  
Brand name: Lasix®  
Route of administration: Oral, IV, I.M.

**Mechanism of Action (MoA)**  
Kidney nephrons → Loop of Henle → Thick ascending limb → Inhibits sodium-potassium-chloride cotransporter (NKCC2) → Ions + water remain in the tubular fluid & are ultimately excreted in the urine

**Indications**

- Heart failure
- Hypertension
- Edema
- Kidney disorders

**Side effects**

- Dehydration
- Hypotension
- Electrolytes imbalance (hypokalemia, ...)
- Gastrointestinal Disturbances (nausea, vomiting, diarrhea, ...)

**Safety considerations**

- Drug interactions
- Food interactions (Avoid alcohol, licorice)
- Increase consumption of potassium rich foods
- Intravenous and intramuscular forms are typically limited to patients in emergency clinical situations and/or unable to take oral medication

**Carbamazepine**  
Carbamaz, Carbamaz, Epilob, Equam, Tegretol

**INTRODUCTION**

- Anticonvulsant: mixed seizures, partial seizures with complex symptoms, and generalized tonic-clonic seizures
- Control the symptoms of bipolar I (mania)
- Alleviates pain resulting from trigeminal neuralgia

**HOW SHOULD THIS MEDICINE BE USED?**

- Tablet (regular or chewable) or a suspension: 2-4x/day with meals
- Extended-release tablet: 2x/day with meals
- Extended-release capsule: 2x/day with or without meals

**MECHANISM OF ACTION**

- Inhibition of sodium channel firing
  - Prevention of action potentials = seizure control
- Increase in dopamine turnover and GABA transmission
  - Manic and depressive symptom control (Bipolar disorder)

**SIDE EFFECTS AND FOOD INTERACTIONS**

- Dizziness
- Drowsiness
- Difficulty speaking, thinking abnormal
- Shortness of breath
- Avoid alcohol: increase in side effects
- Avoid grapefruit products

**PATIENT TEACHING**

- Observations: signs of blood, liver or skin disorders
- Alert: fever, sore throat, rash, mouth ulcers
- Missed dose: to be taken asap
- No driving or machinery operating before day 3
- No Alcohol: exacerbation of sedative effects
- Evaluation of patient understanding: name the drug, its indication, adverse effects to watch for

**NURSING EVALUATION**

Observation:

- Confusion and agitation in older people
- Changes in mental state
- Allergic reactions (rashes, purpura)

Monitoring:

- Patient response to therapy (decrease in incidence or absence of seizures)
- Adverse effects
- Patient compliance to drug therapy

Fig. 4. Examples of posters created by international teams.

grammatical errors, such as the incorrect use of possessives (e.g., “In rare situations, amoxicillin can cause allergies because of it’s reaction on body proteins”); and other cumbersome sentence structures (“Amiodarone has and extremely long half-life, ranging from several weeks to months AND It has the ability to block ion channels at different stages off the cardiac action potential helping stabilize the heart’s electrical activity” (sic)). The mistakes made by these students were viewed not as setbacks but as valuable opportunities for feedback, growth, and continuous development. Some of the mistakes, whether in written tasks or oral interactions, were resolved immediately through feedback, which was integral to the learning process. This approach encouraged students to actively participate without fear of making mistakes, fostering an environment where they could experiment with language use and refine their skills during spontaneous or reflective learning activities.

- Assessment structures and learning outcomes

Regarding evaluation, the tasks and criteria were not exactly the same for Portuguese and Belgian participants, despite a shared core structure, as seen in Fig. 5, below.

For UMONS students, this COIL project was voluntary and valued as an additional component within the existing CLIL course unit. Conversely, for students enrolled in the Technical English in Health elective course, the project was an integral part of their assessment, with specific tasks contributing to their overall grade. Thus, the project started with information being presented at the beginning of the semester, and in early March asynchronous introductions began on Padlet, followed by synchronous group work sessions by videoconferencing, chat, and other social media apps. The collaborative poster was to be submitted by April 16, with its presentation and peer feedback session scheduled for April 30 during a synchronous Zoom

session for both international classes. For IPV students, the project contributed 65% to their final grade, distributed as follows:

- Task 1 – “Getting to know you” activity (Padlet) – 5%
- Task 2 – Video recording of one of the poster design/creation sessions – 10%
- Task 3 – Poster (submitted to EUNICE Moodle) – 5%
- Task 4 – Poster presentation – 10%
- Task 5 – Written reflective report about the whole process – 5%
- Task 6 – Report defence (a critical glimpse of the process) – 30%

The evaluation criteria encompassed several critical aspects to ensure the effectiveness and comprehensiveness of student outputs. These included the accuracy and completeness of the information provided, ensuring that the content was both correct and thorough. Communication clarity was also assessed, focusing on how well the information was conveyed to ensure understanding. Creativity and visual appeal were considered to evaluate the design and attractiveness of the created materials. Collaboration was a key criterion, reflecting the effectiveness of teamwork between Nursing and Pharmaceutical Sciences students. Feedback incorporation was another important measure for examining how well students integrated constructive criticism into their work throughout the various stages of the project. Reflective thinking was evaluated to understand the depth of students’ self-assessment and learning processes. Finally, English proficiency was assessed, emphasising the development of fluency, coherence, and accuracy in both written and oral Technical English in Health. These criteria collectively ensured a holistic evaluation of the students’ performance and learning outcomes in the interdisciplinary COIL project.

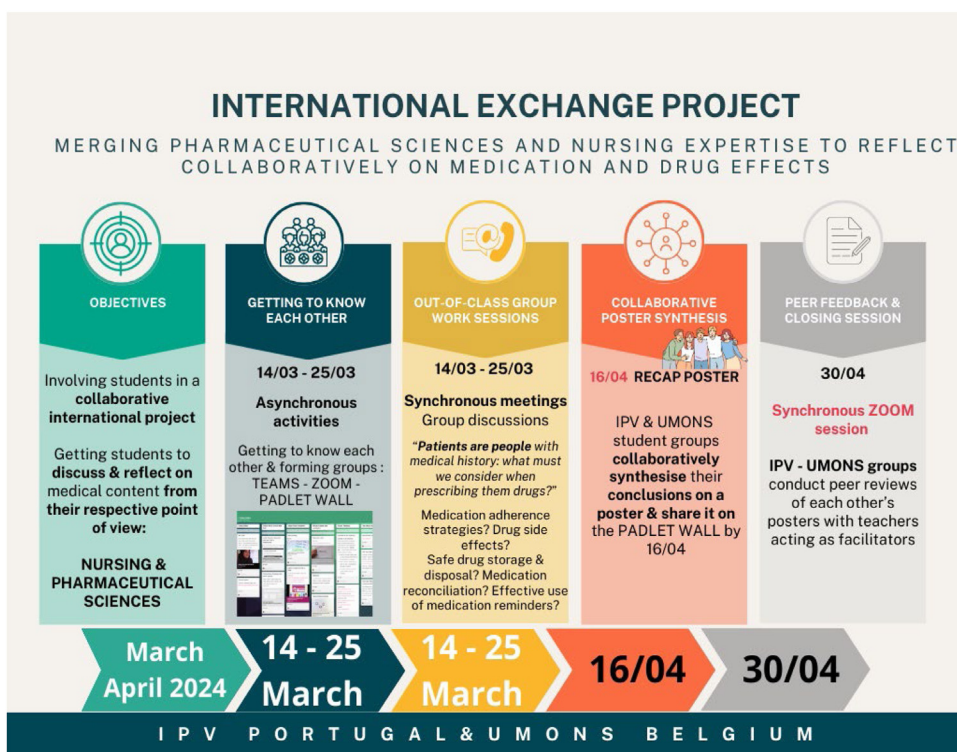


Fig. 5. Timeline and key activities of the COIL project (material designed by the UMONS lecturer).

## Discussion

The results indicate that the cross-cultural COIL project effectively facilitated meaningful interactions in English and collaboration between students from IPV and UMONS, supporting interdisciplinary learning, intercultural collaboration, and language use in an authentic, project-based environment. The themes discussed below reflect recurrent patterns identified through thematic analysis. Each theme addresses key aspects of the students' experiences and learning trajectories, offering insights into the educational impact of the initiative.

As is common in small-scale qualitative case studies, the analysis in this project was primarily conducted by a single researcher, and this may have influenced interpretation despite efforts to maintain reflexivity and transparency. To mitigate potential bias arising from the researcher's dual role as instructor and analyst, reflective journaling and regular exchanges with the COIL teaching partner were used as forms of informal peer debriefing. Reflective notes also helped monitor positionality and served a pedagogical function, supporting student learning through formative feedback by identifying linguistic or communicative challenges and prompting self-, peer-, or group-correction, as mentioned above and as we will further discuss below. While this approach strengthened the study's credibility, the inclusion of additional analysts or inter-rater validation in future work could further enhance methodological rigour and depth of interpretation.

### Enhancement of interdisciplinary and cross-cultural skills

The COIL initiative successfully enhanced students' ability to collaborate across disciplinary and cultural boundaries. The pairing of Nursing and Pharmaceutical Sciences students created opportunities for them to contribute their specific expertise while engaging in interdisciplinary dialogue. Nursing students practised communicating complex health-related information in English with clarity and

empathy, while pharmacology students contributed detailed medical and pharmacological knowledge. This synergy not only enriched their technical knowledge but also fostered essential transferable soft skills such as adaptability, negotiation, teamwork, and initial problem-solving efforts. As Moffett et al. (2021) have noted, when reviewing how undergraduate health professions' students engage with uncertainty, developing adaptability involves learning to manage ambiguity and uncertainty, skills that can be nurtured through humanities-based teaching, small-group learning, and simulation activities, all of which encourage reflection, empathy, and collaborative problem-solving. Similarly, the COIL experience required students to manage ambiguity and respond flexibly to challenges. While problem-solving was not a primary learning outcome assessed directly in this project, reflective reports indicate that students made efforts to manage project-based challenges collaboratively, namely by aligning content, coordinating roles, and adjusting communication styles. When difficulties arose that exceeded their ability to resolve independently, students expressed reassurance in knowing they could rely on the instructors, who acted as a supportive safety net and provided guidance to help overcome obstacles. Culturally, students reflected on how they became more aware of their own and others' perspectives, values, and communication preferences. This growth in intercultural competence was particularly visible when groups had to go through conflicting schedules and unfamiliar academic norms, or when they had to adapt to different working styles.

### The important role of digital literacy and informal communication

Digital tools were central to the project, both as platforms for collaboration and as enablers of cross-cultural interaction. Thematic analysis of reflections and communication patterns revealed a marked improvement in students' confidence and proficiency in using platforms like Padlet, Instagram, Canva, and video conferencing tools. Students displayed flexibility in selecting tools that best suited their groups' communication preferences, with many shifting from

formal educational platforms to more informal spaces like Instagram, where conversations were more spontaneous and ongoing. This choice reflects a broader shift in digital literacy and collaborative behaviour where the boundary between formal and informal learning spaces becomes blurred. As highlighted by [van Rensburg and Matahela \(2025\)](#), digital tools and environments can promote transformative learning by fostering reflection and collaboration in flexible, student-centred spaces. The success of such initiatives, however, depends on both students' and instructors' digital literacy and the creation of inclusive virtual communities that encourage dialogue and peer-to-peer learning. In this project, the ease of using digital tools contributed to a more fluid, continuous, and authentic use of English, allowing students to practise language in context, as previously outlined. While direct, measurable improvement in English cannot be claimed, the increased exposure to this foreign language in diverse communicative contexts, both spoken and written, represents an important opportunity for language development and reflective collaborative growth.

#### *Logistical challenges and coordination*

One of the most prominent themes was the challenge of coordinating across institutions with different academic calendars, assessment systems, and time zones. Students expressed difficulty in aligning their work during exam periods, particularly during the Belgian "Blocus", as seen before and reinforced by other groups, as further illustrated by the following quote: "We consider that the main difficulty in the whole project was to balance the different school schedules between ESSV-IPV and UMONS and the different assessment criteria and tasks given (*sic*, Group 5)." This often required creative scheduling and negotiation between group members to ensure tasks were completed. These obstacles, while stressful at times, became learning opportunities in themselves. They encouraged students to become more autonomous, resilient, and flexible, and these are traits that are essential for professional communication and project-based work in international healthcare contexts. Similar logistical and interpersonal challenges were also highlighted in the scoping review of interprofessional education in healthcare by [Patel et al. \(2025\)](#), which notes that difficulties in coordinating timetables, managing workload, and negotiating across professional and institutional boundaries are common barriers in interprofessional learning environments. Yet, as the review underscores, such challenges can ultimately foster teamwork, communication, and role clarity, which are core competencies for effective interprofessional collaboration in clinical practice.

#### *Learning reflections and personal growth*

The thematic analysis revealed strong evidence of metacognitive development: in their reflective reports, functioning much like e-portfolios that document learning experiences and personal growth ([Amante, 2024](#)), students noted the benefits and challenges of the collaborative experience. Their reflections not only depict student satisfaction but also reveal fears, uncertainties, and occasional frustrations, alongside evidence of growth in intercultural awareness and learner autonomy, which are core goals of internationalised curricula. What is more, the act of reflection itself emerged as a catalyst for personal development: by critically examining their experiences and connecting them to prior knowledge, students were able to make sense of challenges, recognise their evolving competencies, and identify strategies for more effective collaboration. But if in this COIL reflective learning has been shown to be pivotal, in other internationalised contexts it is no different. For instance, research on international students in China found that reflective journals and interviews enabled participants to overcome cultural, linguistic, and academic

challenges. Reflection supported cultural adaptation, language learning strategies, and personal development, even shaping identity and resilience ([Fu & Hali, 2025](#)). In this light, we can say that structured reflection is not merely a supplementary tool, but a transformative mechanism that empowers students.

#### *Quality of student outputs and language development*

The posters produced were of generally high quality, showing that students engaged meaningfully with both scientific content and design. Mistakes in language, such as the ones identified in the previous section, served as pedagogical moments for Nursing students. While the project did not include pre- and post-language testing to demonstrate proficiency gains, the instructional design created a supportive environment for real-time language use and refinement. This aligns with communicative language teaching principles, where errors are natural parts of learning and improvement. Similar to the findings of [Fernández-Córdoba and Mancho-Barés \(2025\)](#), who observed that Nursing students in English Medium Instruction Problem-Based Learning settings actively initiated language-related episodes to clarify vocabulary and disciplinary terminology, this COIL context also encouraged learners to negotiate meaning and refine their linguistic output collaboratively. Research on Language-Related Episodes suggests that when such moments are acknowledged and addressed, they become powerful opportunities for developing disciplinary literacy; conversely, when overlooked, they may lead to fossilised errors and hinder communication ([Doiz & Lasagabaster, 2017](#)). In this project, instructor feedback and peer interaction ensured that most language issues were resolved in context, fostering both linguistic precision and confidence. The students' growing comfort with using English to convey complex ideas, especially in interdisciplinary contexts, supports the claim that COIL experiences can promote language development, a conclusion further reinforced by the final written test results, which showed effective use of technical vocabulary, grammatical accuracy, and strong overall writing performance.

#### *Evaluation and student engagement*

Student engagement was reinforced by the alignment of the COIL project with local course structures and evaluation criteria. Although there were differences between institutional assessments, both cohorts engaged seriously with the project due to clear expectations and feedback mechanisms. The final reflective reports, task submissions, and oral defences all provided rich data that evidenced engagement, critical thinking, and collaborative effort. The variation in local assessment structures (e.g., voluntary vs. graded participation) highlights the need for better alignment in future projects to ensure fairness and shared commitment. Nonetheless, as [Nieminen and Boud \(2025\)](#) argue, authentic forms of assessment – those that connect meaningfully to students' present and future professional contexts – enhance motivation and perceived value, a benefit that was evident on both sides in this COIL, as mentioned, leading to strengthened student investment in the learning process.

#### **Conclusion**

In conclusion, this COIL project exemplified pedagogical innovation, cocreation, and the transformative impact of international virtual exchanges in enriching educational experiences and preparing students for the globalised landscape of healthcare. The combination of academic learning, meaningful cultural exchange, and personal development provided a comprehensive learning experience that will have a lasting impact and enduring benefits for all participants.

Looking ahead, for future iterations of this COIL project, it is recommended to introduce more structured ice-breaking synchronous

activities at the beginning to help students become comfortable with their international peers more quickly and foster deeper connections. Furthermore, aligning tasks and assessments across participating institutions will optimise collaborative efforts, help mitigate misunderstandings, and ensure that cultural differences are effectively respected and accommodated.

While this study provides valuable insights into the educational impact of COIL, its scope remains context-specific. As is characteristic of qualitative inquiry, the findings are intended to offer depth of understanding rather than statistical generalisation. Variations in institutional settings, student motivation, and linguistic proficiency may influence outcomes in other contexts. Future research could therefore explore similar initiatives across other health-related fields and institutions to deepen understanding of how virtual exchanges can best support intercultural and professional competence development.

By addressing these considerations and continuing to refine the model, institutions can better prepare students for the complexities and demands of an ever-changing, interconnected, multicultural world, thereby promoting their readiness for global healthcare environments.

### Bionote

Susana Amante is an associate professor at the School of Technology and Management of the Polytechnic University of Viseu (IPV), Portugal. She holds a Ph.D. in English Philology from the University of Salamanca, Spain, and she was awarded the “Doctor Europaeus” Mention through a joint supervision programme with the University of Coimbra, Portugal (2011). She was PI of the “Learning based on co-creation processes” project at IPV (2021–2023), and her research spans Literatures and Cultures, Gender Studies, Language Didactics, Translation, and Languages, Innovation and Entrepreneurship. Currently, she is the Pro-President for International Affairs and leads the Experiential Learning Work Package (WP3) in the EUNICE Alliance.

### Declaration statement

#### Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request. The datasets generated and/or analysed during the current study are available on EUNICE Moodle and ESSH Moodle.

#### Participation consent statement and permission to reproduce materials

ESSV and UMONS participants willingly submitted their tasks on (social and/or academic) platforms and other apps for evaluation and research purposes. No additional permissions were required to reproduce these materials.

#### Clinical trial registration

N/A.

### Declaration of competing interest

The author declares that she has no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

### CRediT authorship contribution statement

**Fátima Susana Mota Roboredo Amante:** Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project

administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

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