



Relational pedagogies and student wellbeing in COIL: Insights from an international collaboration

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Abstract

Higher education continues to seek sustainable and equitable approaches to internationalisation that do not depend on physical mobility. Collaborative Online International Learning (COIL) offers one such approach, enabling intercultural collaboration through digitally mediated environments. This study examines a COIL initiative between students at the University of Glasgow, Scotland, and the University Niccolò Cusano, Italy, implemented across two academic years. Drawing on ethically approved focus groups and student feedback, a thematic analysis identified three interrelated dimensions, digital empathy, digital connectedness, and digital presence as central to students' experiences of participation and relationship-building. These dimensions contributed to the emergence of relational spaces characterised as safe, brave, and grounded in connected empathy, within which students navigated linguistic differences, developed confidence, and engaged in shared intercultural learning. Rather than offering generalisable claims, the study provides situated insights into how intentional pedagogical design and relational scaffolding can support connectedness and collaboration within COIL settings. The findings highlight the value of relational and culturally attentive digital pedagogies in shaping future approaches to Internationalisation at Home and Internationalisation at a Distance.

Keywords: Collaborative Online International Learning (COIL), digital empathy, digital connectedness, digital presence, intercultural collaboration, internationalisation

Introduction

Internationalisation has long been a cornerstone of higher education, providing opportunities for mobility, intercultural exchange, and global collaboration. Yet these opportunities are not always equally accessible, as they can be shaped by economic, political, and social constraints (Juntunen et al., 2022; Pokhrel & Chhetri, 2021). Alongside these barriers, concerns have grown around student wellbeing, with studies reporting high levels of anxiety, stress, and pressure linked to academic performance and future uncertainty (Son et al., 2020). These challenges highlight the importance of exploring innovative approaches that can sustain global engagement while also developing connection and belonging.

Collaborative Online International Learning (COIL) has emerged as a promising response. Using digital platforms, COIL enables students and educators in different countries to collaborate in shared learning activities, supporting the development of intercultural competencies such as open-mindedness, global awareness, adaptability, second language skills, and respect for diversity (Appiah-Kubi & Annan, 2020; Chan & Dimmock, 2008). Its capacity to overcome geographical barriers and promote cross-cultural exchange has

made it increasingly recognised as a core dimension of internationalisation strategies in higher education (Rubin, 2017; Rubin & Guth, 2022; Mittelmeier et al., 2020). By enabling meaningful global learning experiences, COIL contributes to sustaining international perspectives while also addressing the emotional and relational needs of students in digitally mediated classrooms (Loades et al., 2020; Killgore et al., 2020). Although the COVID-19 pandemic intensified interest in online collaboration, it is important to distinguish between the emergency remote teaching necessitated during lockdown periods and the planned, pedagogically structured online learning that pre-dates COVID-19. Much of the early pandemic literature focused on the challenges of the rapid digital pivot (Hodges et al., 2020), whereas established research on online learning including the influential Community of Inquiry (CoI) framework (Garrison et al., 2000) has long demonstrated that meaningful digital learning environments require the intentional cultivation of teaching presence, social presence, and cognitive presence. In this study, the CoI framework underpins the analysis of digital empathy, digital connectedness, and digital presence, providing a theoretically grounded lens for understanding how relational interaction is intentionally built and sustained within a COIL environment.

The current study explores a COIL initiative implemented between students at the University of Glasgow, Scotland, and the University Niccolò Cusano, Italy, across two academic years. While the Scottish and Italian participants engaged differently because of linguistic and contextual factors, both perspectives inform the relational and intercultural dimensions of this analysis. The study examines how COIL can support not only academic collaboration but also the human connections essential to student wellbeing, with particular attention to how students navigated language, expectations, and cultural differences during online interaction. Drawing on focus groups and student feedback, the study identifies digital empathy, digital connectedness, and digital presence as central to students' experiences of belonging and participation in online international classrooms. These dimensions supported the creation of safe and brave learning spaces for both Scottish and Italian students, where participants described increased confidence, intercultural understanding, and authentic collaboration. By situating these findings within contemporary discussions of internationalisation, wellbeing, and online presence, the study highlights how COIL can contribute to relationally attentive, equitable, and emotionally supportive models of global learning.

Background

Disruption, wellbeing, and the shift to digital internationalisation

Recent years have brought considerable disruption to the internationalisation of higher education, with wide-ranging consequences for institutions and students alike (Savage et al., 2020; Holmes et al., 2020; Meda et al., 2021). Long-standing barriers such as financial constraints, unequal access, and institutional reliance on mobility-dependent models were further exposed during the COVID-19 pandemic, which intensified pressures on students' wellbeing and highlighted the fragility of traditional approaches to global engagement (Meda et al., 2020; Ismaili, 2021). Alongside these structural challenges, educators were required to adapt rapidly to online delivery, with many students reporting heightened stress, isolation, and uncertainty during this transition (König et al., 2020; Ismaili, 2021). However, it is important to distinguish this emergency shift from intentionally designed online international learning. Prior to the pandemic, extensive research on digital pedagogy and the CoI framework (Garrison et al., 2000) demonstrated that social presence, teaching presence, and cognitive presence underpin meaningful online interaction. This distinction is central to understanding the present study, as the COIL initiative was not merely an adaptation to crisis conditions but an example of structured, relational, and pedagogically designed international

collaboration. Yet this shift also accelerated investment in digital approaches, encouraging experimentation with new modes of international collaboration (Nambiar, 2020). As Savage et al. (2020) emphasise, student motivation and wellbeing in online contexts depend less on the technical delivery of courses and more on the extent to which digital environments cultivate belonging, connection, and relational trust. This reinforces the importance of examining how students actively constructed relationships and emotional connections within COIL, rather than focusing solely on the digital tools they used. These insights underline the need for pedagogical approaches that move beyond replicating classroom teaching online, instead adopting intentional, relational, and intercultural spaces where students can experience authentic global learning.

Internationalisation of higher education

The internationalisation of higher education can be categorised into three types: Internationalisation Abroad (IA), Internationalisation at Home (IaH), and Internationalisation at a Distance (IaD), which utilises digital technology for remote learning (Mittelmeier et al., 2020; Zhang, 2022). IA involves the physical movement of educators and students across countries, while IaH integrates international and intercultural elements into the curriculum, bringing global perspectives directly to the campus (Wächter, 2003). With the help of technology, IaD allows students to engage in international learning experiences from home through online courses and workshops (Mittelmeier et al., 2021). Global integration, a fundamental practice within HE, is often seen as an essential institutional commitment, with IA programmes linked to improved research performance, higher university rankings, increased prestige, and positive educational outcomes for students (Zhang, 2022).

While IA has demonstrated institutional and academic benefits, technology-enhanced approaches such as IaD and IaH have emerged as vital complements to create a virtual learning environment that is globally enriched, culturally diverse, and aligned with the interconnected nature of the contemporary world (Mittelmeier et al., 2020; Mittelmeier et al., 2019). Within this scenario of virtual exchanges, there is growing evidence highlighting the beneficial effects of well-structured COIL initiatives on developing intercultural learning (Hackett et al., 2023). This educational strategy enables students and teaching staff from two international partner institutions to engage in collaborative activities through virtual platforms while remaining physically based at their home universities.

In response to these trends, and particularly during the challenges posed by COVID-19, the authors of this article implemented a COIL approach within the Initial Teacher Education (ITE) programmes at the University of Glasgow's School of Education with the aim to provide students with meaningful online opportunities to enhance their international competencies by collaborating with partner institutions in Italy and India (for further details, see Rodolico et al., 2022a; 2022b). On reflection after the original study, authors identified the SUNY COIL model (SUNY COIL Center) as the main structure to support student engagement through group projects, shared learning experiences, and intercultural dialogue (Rubin, 2017). However, they also identified a more tailored structure to enhance the quality and sustainability of the COIL practices: by drawing from both academic literature and insights gathered from student focus groups, they developed four additional guiding principles: Co-operative Teaching, Active Participation, Mutual Enrichment, and Topics of Common Interest (Rodolico et al., 2021a). Integrating these principles ensured that the COIL design prioritised relational interaction, a key theme across both Scottish and Italian student feedback, and aligned with Col-informed understandings of how cross-cultural online communities are promoted.

Connection

Human connection

Human connection is a central determinant of physical, social, and psychological functioning (Loades et al., 2020; Killgore et al., 2020). Across the lifespan, individuals rely on relationships for wellbeing and resilience, with strong evidence linking social interaction to improved mental health outcomes (Martino et al., 2015). Maslow's (1943) hierarchy of needs is often used to illustrate the foundational role of belonging within human motivation (Shoib et al., 2022). While useful as a broad conceptual frame, Maslow's model cannot fully explain how belonging is cultivated in online educational environments. The relational processes that shape digital belonging, such as building trust, reducing linguistic anxiety, and negotiating intercultural differences, are more effectively theorised through contemporary perspectives on social presence and digital relationality (Garrison et al., 2000; Lowenthal & Dunlap, 2020). These frameworks emphasise how emotional visibility, responsiveness, and relational care enable students to feel recognised and connected in virtual spaces. Extensive research demonstrates that disruptions to social connection heighten psychological distress and feelings of dislocation (Holt-Lunstad, 2021; Loades et al., 2020), whereas strong interpersonal ties support emotional regulation, self-esteem, and overall wellbeing (Allen et al., 2021). Global reports similarly highlight social connectedness as a fundamental psychological need (WHO, 2022; Holmes et al., 2020). Against this backdrop, examining how digital environments support (or inhibit) interaction becomes crucial. COIL is increasingly recognised as a space that can promote intercultural learning and collaborative engagement, although its effectiveness depends on contextual and institutional factors (Naicker et al., 2021). In this study, both Scottish and Italian students described relational gains, including reduced anxiety, increased confidence, and feelings of inclusion, suggesting that connection in COIL emerged through concrete interpersonal practices such as adaptive communication, patience, and mutual support.

Digital empathy

Digital empathy is an increasingly significant concept within contemporary educational theory, particularly in response to the rapid digitisation of teaching and learning environments (Hua & Le 2024). As education shifts toward hybrid and online modalities, the capacity to recognise, understand, and respond to others' emotional states in virtual spaces has become essential (Seppälä, 2014; Cook, 2013). Digital empathy expands upon traditional conceptions of empathy by accounting for its expression and reception through digital platforms, where the key component is not only the empathy between online learners, but also between educators as task designers and learners as engaged individuals. Educators must consider how learners will feel when connecting with each other in online environments where non-verbal cues, emotional signals, and spontaneous interpersonal interaction are limited (Morel, 2021; Hehir et al., 2021; Hua & Le, 2024). Within COIL environments, this form of empathy plays a crucial role in supporting intercultural sensitivity, trust, and emotional presence, key components of relational pedagogy (Martino et al., 2015; O'Dowd, 2021). As students engage across linguistic and cultural boundaries, synchronously and asynchronously, digital empathy enables a form of connection that supports both psychological safety and academic belonging. In this way, it serves as a foundational element in promoting wellbeing and meaningful collaboration in online international education. Friesem (2016b) identifies six key elements of digital empathy: (a) the ability to analyse and evaluate another's internal state (empathy accuracy), (b) a sense of identity and agency (self-empathy), (c) the capacity to recognise, understand and predict others' thoughts

and emotions (cognitive empathy), (d) the ability to feel what others feel (affective empathy), (e) role play (imaginative empathy), and (f) compassion towards others (empathic concern). These dimensions align with wider research on empathy in online and face-to-face contexts (Sperandeo et al., 2021). Zainudin (2025) highlights that empathetic interactions between teachers and students in any environment can impact the affective domain of learning, enhancing student motivation and supporting stronger engagement with the learning content. Furthermore, when online, empathic interactions could serve as a connector, reducing the emotional gap commonly felt in online learning settings. Hua and Le (2024) similarly found that higher levels of teacher digital empathy improved students' willingness to participate and contributed to more meaningful engagement in online learning. To strengthen its relevance to this study, digital empathy can also be viewed as closely aligned with social presence in the Col framework (Garrison et al., 2000). Social presence emphasises projecting oneself as a 'real' and relational participant online, and digital empathy offers one mechanism through which social presence is enacted. This is particularly relevant in COIL, where linguistic differences and intercultural uncertainty mean that students rely on empathic behaviours, such as slowing speech, rephrasing ideas, and offering reassurance to establish trust and reduce anxiety across cultural groups. For both Scottish and Italian students in this project, digital empathy was not only conceptual but demonstrated through practical actions that helped build emotional safety and confidence during collaboration. The critical importance of digital empathy in educational settings, especially where digital communication is dominant, becomes evident. In the digital age, the ability to effectively express and understand emotional signals in virtual environments is seen as equally essential as traditional teaching skills (Hua & Le, 2024).

Digital connectedness

To explain the concept of digital connectedness, it is useful to first consider social connectedness. Social connectedness is a recognised determinant of mental and physical wellbeing (Lee et al., 2001). Within education, feelings of connectedness enhance students' health and wellbeing (Arslan, 2021), while fostering belonging and supporting academic success and graduate prospects (Gail-Thomas & Hanson, 2014). Hehir et al. (2021), in their systematic review, suggest that digital environments can help sustain student connectedness through several factors, including the usability of digital resources, meaningful teacher interaction (Stone & Springer, 2019), immediacy of feedback (Bolliger & Martin, 2018), synchronous opportunities for communication, and collaborative learning communities that build a sense of belonging. These factors offer a framework for promoting a sense of digital connectedness in learning environments, drawing attention to how technology can support not just communication, but also deep relational and emotional engagement. Digital connectedness refers to the social and emotional quality of relationships maintained through digital platforms, encompassing learners' sense of presence, belonging, and mutual engagement in virtual spaces (Lowenthal & Dunlap, 2020; Greenhow & Lewin, 2016). It is not merely about being online; it is about being socially and emotionally present in ways that make others feel seen, heard, and valued (Lowenthal & Dunlap, 2020). This understanding broadens the concept of digital connection, which encompasses how individuals interact, communicate, and form relationships through digital technologies. While digital connection includes access and the functional use of tools, digital connectedness highlights the emotional, cognitive, and relational dimensions of these interactions, particularly in educational contexts (Bozkurt et al., 2020; Jandrić et al., 2020). Early interpretations of digital connection tended to emphasise technological infrastructure and access (Van Dijk, 2019). More recent perspectives highlight how digital spaces mediate human relationships, identity, and emotional engagement (Bayne & Gallagher, 2021). This shift aligns with the concepts of digital presence and digital empathy, which suggest that meaningful online interaction requires attentiveness, responsiveness, and

mutual recognition (Lowenthal & Dunlap, 2020). In higher education, encouraging digital connectedness is vital for student engagement, collaboration, and well-being, particularly in online and hybrid learning environments. A strong sense of connectedness with peers and educators has been shown to predict motivation, retention, and academic success (Lowenthal & Dunlap, 2020). COIL, for example, relies on digital platforms to build cross-cultural connectedness and global learning communities (Rubin, 2017; Rubin & Guth, 2022). Digital connectedness also supports emotional and identity development, especially when learners experience care, recognition, and reciprocity (Greenhow & Lewin, 2016; Bali & Caines, 2018). In the wake of COVID-19, the absence of connection intensified the emotional challenges of remote education, reinforcing the need for pedagogies that intentionally design for connection (Bozkurt et al., 2020). However, this experience is not universal, persistent digital divides in access, literacy, and cultural attitudes continue to shape who can meaningfully connect and how (Van Dijk, 2019; Bozkurt et al., 2020). Furthermore, the emotional labour required to sustain digital presence can disproportionately affect educators and students from marginalised backgrounds (Macgilchrist et al., 2019). Thus, digital connectedness is more than a feature of online learning; it is a relational and pedagogical priority. As digital education evolves, creating deep and equitable connectedness is essential to supporting emotional well-being, meaningful engagement, and inclusive participation in global learning communities. Research highlights that effective digital pedagogy must prioritise care, empathy, and relational trust (Bali & Caines, 2018; Bozkurt et al., 2020; Hehir et al., 2021; Shange, 2023; Dulfer et al., 2024). Students who experience a strong sense of social and emotional connection are more likely to feel engaged and succeed academically (Lowenthal & Dunlap, 2020). Moreover, when digital spaces are intentionally designed to promote belonging and identity development, they can become sites of meaningful human connection and relational engagement (Bond et al., 2021; Hehir et al., 2021). In the context of this COIL study, digital connectedness was demonstrated through practical relational behaviours enacted by both Scottish and Italian students. These included initiating cross-country group chats, adapting communication styles to support peers working in a second language, and maintaining regular informal contact between synchronous sessions. Such actions map closely onto the social presence dimension of the Col framework, illustrating that connectedness was not merely conceptual but actively constructed by students.

Digital presence

Following on from the previous point, the sense of community is an important factor in ensuring success in online educational activities. This is closely linked to the broader concept of digital presence, which is critical for developing meaningful online learning environments. Although the term digital presence may appear vague, the Col framework provides clarity. It identifies three interdependent elements essential for sustaining engagement: teaching presence, defined as the design, facilitation, and direction of cognitive and social processes to support meaningful learning (Anderson et al., 2019); social presence, which refers to students' ability to project themselves as real and connected members of the group; and cognitive presence, the process through which learners construct meaning by integrating new information with prior knowledge (Garrison et al., 2000; Swan, Garrison & Richardson, 2009). These dimensions of presence are not only vital in planned online learning but have also been shown to be particularly important in contexts where teaching is rapidly adapted to digital environments, such as during the COVID-19 pandemic (Cheong et al., 2021; Bozkurt & Sharma, 2020; Hodges et al., 2020). In contrast, within COIL the focus is not on emergency adaptation but on the intentional design of cross-cultural interaction. The Col framework positions teaching, social, and cognitive presence as deliberately cultivated elements rather than incidental outcomes, making it particularly relevant for understanding how students in Scotland and Italy engaged with one another during the structured collaboration. In intentionally designed COIL settings, presence is

nurtured through explicit pedagogical strategies such as structured breakout-room interaction, multimodal communication channels, and guided intercultural dialogue. In this study, digital presence was evident in several observable practices: students maintained active engagement across synchronous sessions, responded consistently within group communication channels, and adapted their communication styles to include peers communicating in a second language. These actions align directly with Col's notions of teaching and social presence and illustrate how presence was *enacted* rather than simply conceptualised. When embedded within structured approaches such as COIL, these relational practices support academic engagement and promote confidence, participation, and collaboration in global online learning environments.

Research question

How do students from two collaborating universities experience connectedness and participation within a purposefully designed COIL environment, and how do digital empathy, digital presence, and digital connectedness shape these interactions?

Methodology

Universities involved

- University of Glasgow (UoG), School of Education (SoE) Scotland.
- University Niccolo' Cusano (UNC) Italy.

Participants

Year 1 2020-2021

- 18 Year 3 undergraduate students studying at the UoG, School of Education on the Master of Education (MEduc) ITE programme.
- 12 undergraduate Italian student teachers and 4 postgraduate students attending the course 'Science of Education' at UNC Italy.

Year 2 2021-2022

- 21 Year 3 undergraduate students studying at the UoG, School of Education on the Master of Education (MEduc) ITE programme.
- 60 undergraduate Italian student teachers and 4 postgraduate students attending the course 'Science of Education' at UNC Italy. These numbers represent the students who participated in the COIL learning activities, not the research sample.

Research participants

Across both years, all participating students contributed to the COIL activities and provided session feedback through Padlet and digital platforms. However, only a smaller volunteer subset from each institution took part in the focus groups that form the basis of the qualitative analysis. To support natural

conversational flow and ensure that participants could express themselves fully, the focus groups were conducted in English for the Scottish cohort and in Italian for the UNC cohort, facilitated by a bilingual member of the research team. This approach reduced linguistic barriers and enabled more detailed and comfortable reflections from both groups.

Workshops key elements

Workshops were designed in line with Sufi et al.'s (2018) typology of exploratory, learning, and creative workshops, providing a structure that supported discussion, knowledge-building, and collaborative task completion. These were further shaped by the four COIL design principles identified by Rodolico et al. (2022a): a topic of common interest, mutual enrichment, active participation, and remote cooperative teaching. A series of sessions was delivered using Zoom for synchronous interaction, Figshare for shared resources, Padlet for feedback, Flipgrid for video-based tasks, and student-selected social media platforms for informal collaboration. Live online sessions made use of interactive features such as breakout rooms for small-group work and shared-screen activities for co-construction. In Year 1 (2020), the topic of common interest was parental engagement, while in Year 2 (2021) it shifted to the impact of food and health on learning, following consultation with students from both countries during the COIL design stage.

Important considerations

It is important to note that the data collection took place during the COVID-19 pandemic, which shaped the conditions of implementation. Study 1 was conducted at a time of full lockdown in both Scotland and Italy, requiring all students to participate online synchronously. Study 2 took place in 2021 during the gradual easing of COVID-19 restrictions in the UK, which enabled Scottish students to resume in-person seminars at the University of Glasgow. In Italy, national restrictions had also begun to ease; however, the University Niccolò Cusano elected to retain remote delivery for the remainder of the academic year. The difference in learning modes during Study 2 therefore reflected institutional policy decisions rather than divergent national pandemic timelines. The description of Study 2 as “IaD” refers specifically to the learning configuration, not to the data collection model. The pedagogical design established in Study 1, co-taught, synchronous online collaboration between Scottish and Italian students was replicated in Study 2, even though Scottish students were physically on campus while Italian students participated remotely.

A further consideration concerns the larger number of Italian participants in Study 2. Twenty-one UoG students took part, alongside more than sixty Italian students situated across Italy. While all students engaged in the COIL learning activities, only a smaller subset contributed written feedback and focus group data. Building upon the framework established in Study 1, the research methodology incorporated focus groups as a primary tool for gathering qualitative insights, complemented by feedback provided by both students and tutors. This approach enabled a richer exploration of varied perspectives and experiences, providing deeper insight into the relational and intercultural dynamics of the COIL initiative.

International sessions strategy

The teaching team comprised one Italian native speaker, one native English speaker, and one bilingual Italian–English tutor whose educational background was in the Italian system and whose teaching experience was primarily in Scotland. All three tutors supported both cohorts, ensuring cultural and linguistic accessibility throughout the COIL activities. Although English served as the working language for all intercultural collaboration, the teaching team drew on their combined linguistic and cultural expertise to support students during synchronous interactions. Session materials were discussed and adapted to the cultural norms of both countries. For example, the first session was presented in English to Scottish student

teachers and followed a student-centred pedagogical approach expressed through active learning. The same session was translated into Italian and delivered concurrently, with a lecturing style for the Italian cohort of students. Despite differences in pedagogical style across institutions, opportunities for intercultural interaction took place during shared synchronous segments and through follow-up group tasks. Students collaborated in mixed-nationality groups using English as the common working language, supported by multimodal communication tools such as Zoom breakout rooms, shared online documents, and informal messaging platforms. These tools enabled both Scottish and Italian students to participate actively despite linguistic and contextual differences.

The COIL sessions were delivered over a three-week period, allowing time for connection, communication, and reflection during and between synchronous meetings. All students were required to contribute to a shared collaborative output, drawing on their cultural perspectives and navigating linguistic diversity as part of the learning process. While English was used for synchronous collaboration and written tasks, Italian-language session content was also provided to support comprehension and ensure parity of learning across both cohorts.

Ethical approval

Ethical approval was sought and granted by the UoG College of Social Sciences ethics committee. Eliciting student feedback is routine practice within the SoE, and ethical approval was requested to use this feedback as data to inform the focus group questions and to receive permission to carry out the research. The focus group was conducted online via the university IT platform Zoom. The researchers accept the limitations of such a small-scale study and do not seek to generalise but rather to offer points of discussion to inform further research on how to support internationalisation using IT platforms.

Ethical approval from UNC was sought and granted with a simpler process and by means of approval letter from the university managers and consent forms from participants.

Data Collection

Students' session feedback

Data were collected through tutors' reflective journals, students' session feedback, and focus groups. Student feedback was gathered using Padlet and Zoom polls during and immediately after the COIL sessions, while students also used informal communication tools such as Messenger and shared documents to support collaboration. These informal interactions, although not part of formal data collection, were referenced in students' reflections and informed the thematic analysis. The feedback highlighted early patterns such as differing levels of confidence across languages, the value of repeated contact for building rapport, and students' perceptions of group cohesion. These preliminary concepts were used to refine the focus group questions, enabling deeper exploration of students' experiences of session structure, multilingual interaction, language barriers, active participation, and mutual enrichment. Importantly, the session feedback did not simply precede the focus groups but also contributed conceptually to the emergent analysis. Several of the early ideas identified in the Padlet and poll data aligned with inductive themes later reported in the results section, demonstrating continuity between the initial reflections and the more detailed qualitative accounts. In line with Hallberg (2006), the use of preliminary concepts to inform subsequent data collection reflects an iterative qualitative process in which emerging ideas guide

further inquiry until additional data no longer yield new insights, sometimes described as theoretical saturation within qualitative traditions.

Focus groups

Two focus groups were organised each year: one with Scottish students and one with Italian students. Focus groups were selected because they enable open discussion, allowing participants to build on each other's ideas in a natural conversational setting, which is particularly valuable when exploring relational and intercultural experiences (Morgan & Krueger, 1993). Students also reported feeling relaxed and willing to share honest reflections in these group settings. Participation in the focus groups was voluntary, across both institutions, the groups were comparable in size, typically involving around five to six students per session. However, the Italian students contributed fewer extended quotations overall, which reflected differences in linguistic confidence and communication pace rather than disparities in analytic weighting. All Scottish focus groups were conducted in English, while the Italian focus groups were conducted in Italian by a bilingual member of the research team to ensure that participants could express complex or emotive reflections without the constraints of a second language. This approach supported richer data generation and reduced the likelihood that linguistic barriers shaped the depth or quality of contributions.

Data analysis

Data were thematically analysed using a combined deductive and inductive approach (Braun & Clarke, 2006). This article presents an extended second-stage analysis of the *same dataset* used in the earlier publication (Rodolico et al., 2022b). The initial analysis drew on a deductive rubric based on the COIL design principles of mutual enrichment, active participation, and cooperative teaching. The second-stage analysis incorporated an additional deductive framework informed by digital empathy, digital connectedness, and digital presence, interpreted through the CoI lens. Using both deductive and inductive lenses allowed the researchers to examine how the COIL design principles appeared in the data while also identifying new relational and emotional themes that were not captured in the original coding. This dual approach aligns with the exploratory aims of the study and strengthens the interpretive depth of the analysis. Data were coded using descriptive, in vivo, and emotion coding techniques (Saldaña, 2014). The coding process involved three stages:

1. Pre-coding identified preliminary patterns using the deductive frameworks outlined above and supported the development of new inductive codes.
2. Descriptive and in vivo coding were then applied across all transcripts, with each participant's data coded individually. Insights generated during this stage informed subsequent re-coding of other transcripts, allowing patterns to evolve iteratively.
3. Emotion coding was particularly important for the Italian focus group. These transcripts were analysed *in Italian* by a bilingual researcher to ensure that emotive nuance, cultural meaning, and tone were not lost through translation.

Finally, each member of the research team independently re-coded the dataset before meeting to compare interpretations and agree on the final coding structure. This collaborative process supports the trustworthiness and rigour of the analysis while acknowledging the small-scale and non-generalisable nature of the study.

Results

The thematic analysis results for the two focus groups carried across the 2 years highlighted an overlap between the deductive themes with the identification of 3 key inductive themes:

Deductive key themes

- Digital Empathy
- Digital Connectedness
- Digital Presence

Inductive key theme

- Space of connected empathy,
- Brave space
- Safe space

In addition to the focus groups, preliminary analysis of the session feedback (Padlet reflections and Zoom polls) informed the deductive-inductive structure. Students' early feedback highlighted recurring issues such as linguistic confidence, the value of repeated contact, uncertainty in initial collaboration, and the usefulness of small-group work. These insights shaped the focus group prompts and contributed to the emergence of the inductive themes.

Figure 1 below shows a framework constructed around the deductive and inductive themes. Digital empathy was evident among Scottish students who adapted their communication to overcome language barriers, incorporated the ideas of their Italian peers, and considered their needs during collaboration. Italian students also referred to feeling "supported" and "not judged," particularly when Scottish peers slowed their speech or rephrased explanations. Several Italian participants described initial anxiety about speaking in English but explained that "after a few meetings we felt more relaxed because they understood us." Students also demonstrated digital presence through consistent communication via platforms like Zoom, Messenger, and Facebook, actively supporting and collaborating with their peers. Both groups noted that maintaining visibility between sessions (e.g., through informal messaging) helped them remain engaged and better prepared for synchronous meetings. Digital connectedness was seen in the Scottish students' efforts to develop bonds with the Italian students, highlighting potential future collaborations and networking opportunities. Italian students also identified a sense of connection, commenting that "we felt part of their group" and that the collaboration offered "a new way to meet people from another place."

Where these themes intersected, three inductive themes were identified: Safe Space, Brave Space, and Connected Empathy Space.

Safe Space

In higher education, a safe space refers to an environment in which students feel able to express themselves without fear of criticism or judgment (Flensner & Von der Lippe, 2019). Within this project, both Scottish and Italian students described such conditions emerging through patience, encouragement, and mutual respect. Italian participants noted feeling able to "ask questions without embarrassment," while Scottish students commented that "everyone looked out for each other," illustrating the relational

attentiveness that supported early participation. These dynamics contributed to creating a foundation of emotional security from which collaboration could develop.

Brave Space

A brave space extends the notion of safety by encouraging learners to engage constructively with difference, challenge assumptions, and listen across cultural and linguistic boundaries (Arao & Clemens, 2013). Students from both institutions described moments when they questioned their prior assumptions about schooling in each other's contexts or contributed ideas despite initial hesitancy. Such experiences reflect that collaborative discomfort was *productive* rather than discouraging, enabling participants to engage in more authentic dialogue and develop intercultural awareness.

Connected Empathy Space

Connected Empathy Space captures students' ability to use digital tools to form emotionally attuned, supportive, and reciprocal relationships across distance (Friesem, 2016a). This was illustrated in participants' reflections on being listened to "with patience" and gaining awareness of "how difficult it must be to speak in another language." These moments emphasise the relational labour and digital empathy that underpinned collaboration, helping students to recognise and accommodate the emotional and linguistic realities of their peers.

Interpretation across the themes

Across both cohorts, these inductive themes demonstrate how students navigated linguistic differences, emotional uncertainty, and cultural unfamiliarity to co-create relational online learning spaces. Importantly, these themes do not suggest reductions in isolation or general wellbeing outcomes, but instead reflect students' descriptions of increased comfort, confidence, and interpersonal understanding within the specific context of this COIL partnership.

Finally, communication, both formal and informal and the structure of the COIL activities were central to enabling these relational processes. These aspects are examined further in the discussion section.

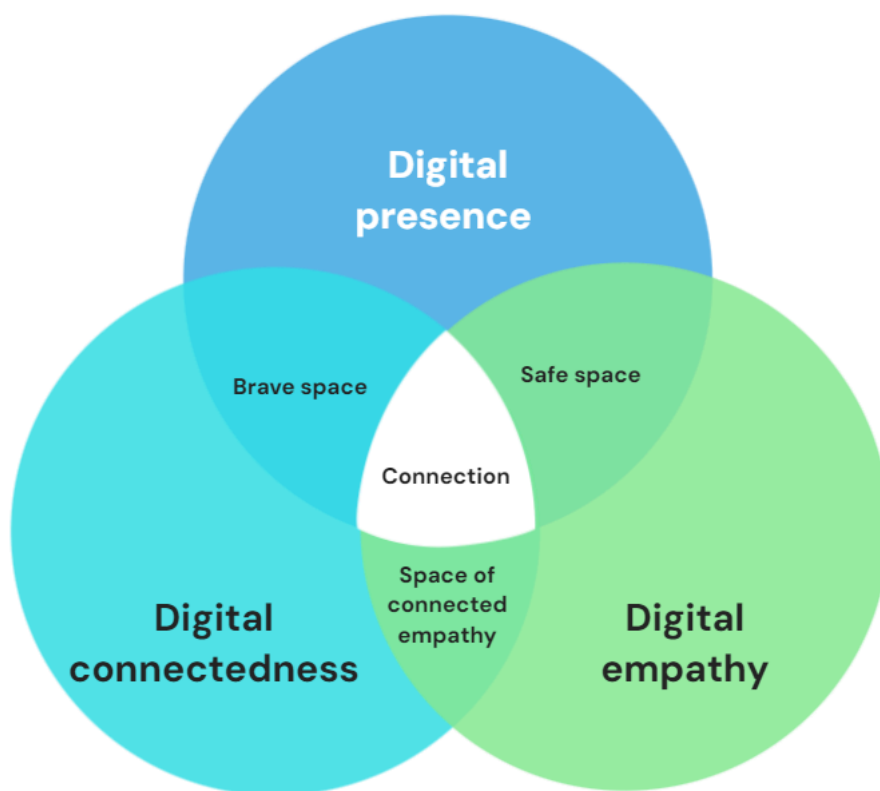


Figure 1: Relational COIL Model Integrating: Digital Presence, Connectedness, Empathy, and Safe/Brave/Connected Empathy Spaces

Discussion

This section presents the findings through a dual-layered thematic framework. Three deductive themes; digital empathy, digital presence, and digital connectedness provided the conceptual structure. These were enriched by three inductive themes, safe space, brave space, and connected empathy, which emerged through participant reflections.

Importantly, all discussions and collaborations between students took place in English, the native language of the Scottish cohort but not of the Italian students, although many of the latter spoke it well as a second language. This linguistic context shaped early group dynamics, as Italian students reported feeling anxious, cautious, and less confident in contributing. As Fleischmann et al. (2020) note, language fluency can significantly impact intercultural team dynamics, often positioning non-native speakers in more passive or reactive roles during early collaboration. In the initial phases of the project, Scottish students took the lead initiating dialogue, guiding tasks, and adjusting their communication, which reflects an early enactment of digital empathy, characterised by adaptive behaviours and sensitivity to others' communicative needs (Bali & Caines, 2018). Their willingness to modify their speech and take responsibility for inclusion helped create a foundation of psychological safety, a key condition for equitable engagement in digital learning environments. This pattern illustrates how digital empathy functioned as a practical relational resource rather than an abstract concept, aligning with the focus group findings where both cohorts described moments of reassurance, patience, and mutual encouragement. As the project progressed, the sustained presence and responsiveness of the Scottish students mirroring the relational dimensions of digital presence described by Lowenthal and Dunlap (2020) helped create a safe and brave online space in which

all students felt increasingly supported. This environment enabled Italian students to develop intercultural confidence, transitioning from reactive participants to active contributors. Italian students' comments in the results section (e.g., feeling "supported," "more confident," or "less afraid to speak") corroborate this shift.

The shift highlights the importance of connectedness in digital pedagogy, where informal interaction and emotional solidarity, as emphasised by Greenhow and Lewin (2016), are central to student engagement and growth. Ultimately, the relational trust and inclusivity embedded in the Scottish students' approach supported mutual development, laying the groundwork for shared understanding and deeper collaboration.

Digital empathy

In the early stages of collaboration, Scottish students were aware of the linguistic imbalance and proactively adjusted their communication, demonstrating digital empathy to include their Italian peers, who were initially hesitant to contribute in English. The students consistently mentioned adapting their communication to accommodate the Italian students' language barriers:

Practically as well, sometimes the way that we explained it the first time was quite difficult to understand, so being able to try and change your explanation but still get the same message across... That was quite tricky to get originally, but the more time you spent with them and more dialogue we had, that line of communication was a lot better.

This reflects a deliberate effort to reduce the anxiety associated with contributing in a second language, aligning with Bali and Caines' (2018) emphasis on nurturing connected, inclusive learning environments. Empathy was also demonstrated through a sensitivity to how language and culture intersect to dismantle emotional barriers. Another aspect of digital empathy was evident when a student reflected on the perspective of the Italian students: "If I was put with five Italian students, how would I feel because their English wasn't amazing, and it probably was quite daunting". This reciprocal perspective-taking indicates not only emotional awareness but intercultural humility, aligning strongly with the inductive theme of connected empathy.

Over time, these empathetic acts contributed to a collective emotional shift. As Italian students were consistently invited, supported, and treated with patience, they began to take up space, express ideas more confidently, and reciprocate relational cues, this marked the development of a genuinely safe and connected collaborative environment. The progression illustrates how digital empathy, when enacted consistently, can create the conditions for both safe spaces, where students feel secure to participate and brave spaces where they feel able to take interpersonal and intercultural risks. These emerging relational dynamics reflect the inductive themes identified in the analysis. These linguistic dynamics shaped initial group interactions and directly relate to the research question, which examines how students experienced connectedness and participation within a cross-cultural COIL setting, and how digital empathy, presence, and connectedness supported those interactions. In the early stages, Italian students described feeling anxious and hesitant to contribute, while Scottish students naturally assumed more active roles, initiating tasks, guiding communication, and adjusting their language to ensure inclusivity. These early actions reflect an emerging culture of mutual respect and digital empathy (Bali & Caines, 2018), laying the groundwork for psychological safety. This aligns with the AAC&U Global Learning VALUE Rubric, which identifies communication across difference, global self-awareness, and intercultural understanding as core learning outcomes of meaningful global education.

As the COIL project progressed, the environment evolved into one of cooperative teaching and learning, where Italian students transitioned from reactive to increasingly active and empowered participants. This growth, encouraged by consistent support from peers and instructors, illustrates COIL's potential to nurture connectedness and intercultural competence. These developments speak directly to the research aim by showing how intentional design and relational pedagogy can transform participation into shared ownership, emotional engagement, and intercultural collaboration. According to Collett et al. (2024), COIL can promote positive impacts on students' learning experiences by applying the key elements of response-able pedagogy attentiveness, curiosity, responsibility, and rendering each other capable.

Digital Presence

(Inductive link: Brave Space & safe space)

Because all discussions were conducted in English, Scottish students naturally assumed more active roles at the outset structuring conversations, initiating Messenger groups, and encouraging Italian participation. Italian students, while engaged, were often tentative during the early synchronous sessions, with several describing the experience as "a bit intimidating" and noting that they preferred to "listen first before speaking." Despite this initial imbalance, Scottish students approached the collaboration with patience and flexibility, adjusting their communication pace and tone to support their peers. As one student reflected:

We could go away and have more communication in different forms... we'd formed a Facebook group chat... then come back and have verbal dialogue again.

These early interaction patterns show how digital presence was gradually scaffolded through consistent visibility and responsiveness, forming the foundation for the inductive themes of safe space (security and support) and brave space (willingness to take interpersonal and intercultural risks).

These recurring touchpoints, both synchronous and asynchronous, functioned as mechanisms through which digital presence was gradually scaffolded. Students from both countries described "feeling more familiar" with each other after repeated interactions, suggesting that presence was not a fixed construct but a relational process built through consistency, visibility, and responsiveness. As the collaboration progressed, these inclusive communication practices created space for Italian students to become more visible, vocal, and confident. Italian participants noted that they felt increasingly "comfortable taking part," indicating that digital presence emerged through mutual adjustment rather than one-directional support. What began as an initial imbalance evolved into braver and more equitable engagement, reflecting Lowenthal and Dunlap's (2020) view that digital presence must be relationally scaffolded, built intentionally through continued interaction, trust, and emotional attentiveness. This developmental trajectory also aligns closely with the inductive themes identified in the analysis. The patience and consistency demonstrated by peers contributed to the emergence of a safe space, where students felt secure to participate. As confidence grew, a brave space emerged, enabling participants to take interpersonal and intercultural risks and engage in more open and authentic dialogue.

While these findings arise from a specific partnership and qualitative sample, they offer valuable insights into how digital presence can be enacted and experienced within COIL collaborations. The results should be understood as contextually situated rather than generalisable claims, yet they nonetheless illuminate relational dynamics that may inform the design of similar initiatives.

Digital Connectedness

Despite the challenges of communicating in English, students reported forming genuine cross-cultural connections as the collaboration progressed. Scottish students often led early engagement, using informal dialogue and humour to create a relaxed and welcoming tone. One student explained: “We’d formed like a Facebook group chat... and just used humour to keep things light.” Humour functioned as a valuable relational tool, reducing tension, creating emotional comfort, and encouraging participation. This aligns with Harshavardhan et al.’s (2019) finding that humour and informal discourse can enhance emotional ease and engagement in digitally mediated learning spaces. It also echoes Lowenthal and Dunlap’s (2020) observation that these informal relational exchanges are central to building social presence. Italian students similarly described how humour and informal messaging helped them “feel part of the group,” noting that such interactions made it “easier to speak in the sessions” and reduced the pressure of communicating in a second language. These interpersonal strategies contributed to the development of connected empathy and helped shift group dynamics from cautious engagement to mutual openness. This progression aligns directly with the inductive themes of safe space and connected empathy, as several students described feeling increasingly comfortable and relationally supported as trust developed. Rather than suggesting improved wellbeing outcomes, these reflections point to a growing sense of relational ease and intercultural confidence within the context of this collaboration.

This shift also relates directly to the study’s research question, illustrating how the COIL framework supported mutual enrichment and active participation across groups. It aligns with competencies highlighted in the AAC&U Global Learning VALUE Rubric, including communication across difference, intercultural empathy, and global self-awareness. As two participants reflected: “We actually did stay in touch with the girl after it.” “There was a mutual kind of empathy... we knew there was a bit of a barrier, but we were going to get there.” These comments indicate a movement from initial linguistic self-consciousness toward a deeper sense of belonging. Italian students who were initially hesitant later described contributing ideas, feeling integrated within the group, and recognising the value of the exchange. This evolution reflects the situated nature of digital connectedness within this COIL partnership, emerging through repeated interaction, relational attentiveness, and the co-construction of safe and brave spaces across linguistic and cultural boundaries. For some students, these digital relationships extended beyond the formal task, offering ongoing informal contact. While such continuity cannot be assumed across all COIL contexts, it illustrates how relational practices within this partnership supported a deeper sense of connection among participants.

Networking potential

One student reflected on the longer-term significance of these emerging relationships:

If there was ever to become an occasion when I'm teaching that I'm like, OK, we're going to focus on Spain, I've got a contact... building that bond where, in my future, I can call upon them.

This illustrates how some students viewed the collaboration not merely as an academic task but as an opportunity to build international friendships and professional networks. This interpretation aligns with Bozkurt et al.’s (2021) view of online learning as a human-centred, relational experience, and with Greenhow and Lewin’s (2016) argument that digital environments can bridge formal learning with real-world connection. Italian students similarly noted the value of “meeting people from another country” and described the experience as “useful for future work.” While these perceptions suggest perceived long-term value, they should be understood as subjective accounts within a qualitative study rather than generalisable outcomes.

Language, inclusion, and the development of participation

Although all collaboration took place in English, a second language for the Italian students, this created subtle power imbalances that shaped the early dynamics of the groups. Italian students frequently described feeling hesitant to speak, concerned about clarity, pace, or the possibility of making mistakes. These linguistic asymmetries, however, were not left unaddressed. Scottish students demonstrated digital empathy by slowing their speech, rephrasing explanations, and initiating inclusive dialogue, helping reduce communicative pressure and foster early participation. Italian participants noted that these behaviours “made it easier to speak” and reduced their initial anxiety, indicating that early hesitancy gradually gave way to increased confidence.

As the project progressed, this relationally attuned environment supported Italian students in contributing more actively not only to the academic task but also to the emotional rhythm and social tone of the collaboration. Their growing participation illustrates how scaffolding through empathy, responsiveness, and consistent presence can help redistribute interactional power and support more equitable intercultural engagement. These developments provide a situated example of how relational scaffolding can sustain participation in cross-cultural digital environments. Importantly, the findings do not suggest reduced isolation or broader wellbeing outcomes; rather, they reflect students’ reported experiences of increasing comfort, confidence, and relational ease within the context of this specific project. This developmental shift speaks directly to the research question by demonstrating how mutual enrichment, cooperative teaching, and attentive interpersonal practices can promote connectedness across linguistic and cultural boundaries.

The impact of the deductive themes

The integration of digital empathy, digital presence, and digital connectedness played a central role in shaping interaction within this COIL project. At the outset, Scottish students often adopted proactive and supportive roles, helping to navigate the linguistic and cultural asymmetries that characterised the early stages of collaboration. Their consistent emotional sensitivity, visible engagement, and relational commitment contributed to the emergence of an online environment in which communication felt safe, respectful, and increasingly reciprocal. Italian students’ reflections echoed this pattern. Several described feeling “supported,” “encouraged,” and “more confident” as the project progressed, illustrating how the deductive themes were experienced across both cohorts. Within this supportive digital environment, many Italian students transitioned from tentative contributors to more active co-creators. This shift suggests that the combination of digital empathy, connectedness, and presence provided relational scaffolding that enabled participation to evolve from basic task exchange toward a more reciprocal sharing of ideas, emotional reassurance, and intercultural understanding. Within the COIL framework, the three deductive themes may be understood as interlocking dimensions of intercultural competence. Digital empathy enables students to adjust their communication to accommodate linguistic and cultural difference; digital connectedness cultivates a sense of shared purpose and belonging; and digital presence supports sustained, authentic engagement across time and platforms. Together, these elements shaped the conditions through which students in this project were able to learn with and from one another.

Safe space, brave space, and connected empathy space

The interaction of the deductive themes also contributed to the emergence of three inductive relational spaces identified through thematic analysis.

Safe Space

Safe Space refers to a higher education context where students feel secure in expressing themselves without fear of criticism or judgment from their peers or instructors (Flensner & Von der Lippe, 2019). Both Scottish and Italian students described moments where ideas were welcomed, even when tentative or

divergent from the main discussion. Italian participants highlighted being able to “ask questions without embarrassment,” while Scottish students commented that “everyone looked out for each other.” These accounts point to the co-creation of an atmosphere marked by psychological security and mutual respect.

Brave Space

Beyond safety, brave spaces invite participants to take interpersonal and intellectual risks by engaging openly with difference (Arao & Clemens, 2013). Students from both countries described moments of challenge and self-expression, such as discussing future aspirations abroad or offering an idea despite linguistic uncertainty that demonstrate a willingness to move beyond comfort while still feeling supported.

Connected Empathy Space

Connected Empathy Space describes the capacity to build empathetic relationships through digital means. It involves leveraging technology to form genuine, supportive, and emotionally aware connections with others despite physical and cultural distances (Friesem, 2016a). Examples included patience during linguistic negotiation, humour that eased tension, and expressions of understanding across cultural boundaries. These spaces emerged organically through repeated interaction, adaptability, and mutual curiosity, reflecting students’ subjective experiences rather than generalisable outcomes.

Conclusion

This study set out to explore the role of COIL as a means of supporting connectedness and relational engagement in an international online learning environment. Drawing on a unique case study across two culturally and geographically distinct higher education institutions, the findings demonstrate that thoughtfully designed COIL initiatives can serve as powerful tools for fostering emotional support, intercultural empathy, and sustained collaboration in virtual environments.

Through thematic analysis, three interrelated dimensions, digital empathy, digital connectedness, and digital presence emerged as foundational to building human connection in online global classrooms. These themes shaped participants’ experiences of engagement and contributed to the creation of relationally attuned spaces for collaboration. The inductive emergence of *safe space*, *brave space*, and *connected empathy* further enriched the analysis, illustrating how COIL environments can evolve into spaces characterised by trust, mutual respect, and authentic exchange.

The impact of language asymmetries and cultural contexts was also evident. Early interactions were shaped by English-language dominance, which contributed to initial power imbalances and feelings of hesitancy among Italian students. Through consistent supportive practices, including adaptive communication, clarification strategies, and encouragement, students, particularly from Scotland, helped establish conditions in which their Italian peers felt increasingly confident to participate. Italian students’ reflections confirmed this development, describing greater comfort, reduced anxiety, and a growing willingness to contribute as the collaboration progressed. Although both cohorts contributed equally to the focus groups, the study remains small-scale and shaped by the specific disciplinary, linguistic, and institutional conditions of this partnership. Importantly, the study affirms that COIL is not merely a workaround for disrupted mobility but can offer a pedagogically meaningful approach to internationalisation when designed with relational, cultural, and emotional dimensions in mind. Claims regarding student wellbeing must, however, be interpreted cautiously: the findings reflect students’ subjective experiences of comfort, confidence, and relational ease rather than measurable psychological outcomes. Rather than relying on Maslow’s hierarchy

of needs, which was not directly evidenced within the dataset, the study instead foregrounds students' articulated experiences of belonging and relational connection within this specific partnership.

As higher education institutions navigate post-pandemic realities, the lessons from this study point to the value of virtual international collaborations that are emotionally attentive, inclusive, and responsive to diverse learner needs. These insights echo wider developments in online pedagogy, which emphasise the intentional cultivation of teaching presence, social presence, and relational care in digital spaces. The future of internationalisation may lie not only in renewed physical mobility but also in designing digitally mediated environments where global peers can meet, connect, and learn together.

Recommendations

This study highlights the capacity of COIL to support intercultural engagement, communication across difference, and global connectivity within a contextually specific collaboration. Building on these insights, several implications emerge for practice, institutional policy, and future research.

Practice

COIL initiatives benefit from being designed with relational and emotional considerations at their core, educators should intentionally embed opportunities for connection, empathy, and inclusive engagement alongside academic content. This includes scaffolding confidence-building for students communicating in a second language, offering multimodal communication options, and structuring groups in ways that support equitable participation. Pedagogical strategies must be sensitive to linguistic dynamics and cultural expectations, ensuring that safe and brave spaces develop iteratively rather than being assumed. Educators also require support in facilitating reflective dialogue, intercultural exchange, and collaborative meaning-making, which are central to nurturing relationally grounded online learning spaces. These practices reflect broader online pedagogical principles that emphasise the cultivation of presence, social connection, and relational trust in digital environments.

Policy

From a policy perspective, institutions should consider how COIL can be embedded as a sustainable component of Internationalisation at Home and Internationalisation at a Distance. Rather than viewing COIL solely as a substitute for physical mobility, universities might recognise it as a complementary pathway for developing culturally responsive, inclusive, and globally engaged learners. Institutional support must extend beyond technical infrastructure to acknowledge the relational and emotional labour involved in facilitating COIL partnerships. This includes recognising staff development needs in empathy-driven pedagogy, intercultural communication, and equitable partnership-building. While COIL may enhance students' sense of connection, institutions should remain cautious about overstating its impact and instead evaluate its contribution within wider strategic aims for equity, access, and intercultural engagement.

Future research

Several avenues merit further exploration, longitudinal research could examine whether connections formed in COIL settings influence identity, intercultural competence, or professional networking beyond the immediate collaboration. Comparative studies across disciplines and international partnerships may shed light on how relational dynamics vary across contexts. Given the central role of language in shaping participation, future research should explore linguistic power and strategies to support equitable multilingual collaboration. Educator perspectives also warrant attention, particularly concerning the

emotional and organisational labour required to sustain COIL initiatives and partnerships, and the institutional conditions that enable or constrain this work.

Taken together, these recommendations highlight COIL's potential as a pedagogical model that extends beyond technological functionality toward a more relationally grounded and culturally responsive approach to internationalisation. When designed thoughtfully and interpreted modestly, COIL can support global learning environments that nurture connection, curiosity, and inclusive participation.

Limitations

This qualitative study offers situated insights into the emotional, relational, and intercultural dimensions of COIL; however, several limitations must be acknowledged. The participant cohorts differed across institutions and between years, with variations in academic level, disciplinary background, and levels of digital readiness. These factors may have shaped students' engagement, confidence, and perceptions of the experience, and the findings should therefore not be understood as representative of either institution as a whole.

Although the overall intervention involved a substantial number of students, participation in the follow-up focus groups was voluntary and involved only a small subset of students from each institution. As a result, the qualitative dataset reflects the views of a limited group of Scottish and Italian participants, which may have reduced the breadth of perspectives captured and introduced response bias. The findings therefore represent the experiences of those who chose to participate, rather than the full range of possible views within either cohort.

A further contextual consideration relates to the high levels of engagement displayed by participants, who were all enrolled in teacher education programmes and therefore shared a strong professional interest in collaboration, communication, and intercultural learning. This intrinsic motivation supported the development of positive relational dynamics in the present study; however, levels of motivation can vary across COIL contexts and may influence how such dynamics unfold elsewhere.

Most collaboration and data collection occurred in English, which may have influenced participation patterns and the ability of some students to express complex or emotive reflections. Linguistic asymmetries likely shaped early group dynamics and contributed to differing levels of confidence across cohorts. Although Italian focus groups were conducted in Italian to mitigate this limitation, language remains an important contextual factor.

Taken together, these considerations highlight the importance of attending to language, timing, sample composition, motivational factors, and institutional alignment when designing and evaluating COIL initiatives. They also underline the need for caution when interpreting the findings beyond the specific context of this partnership.

Biographies

Mr Mark Breslin is a Senior Lecturer in Health and Wellbeing and Initial Teacher Education at the University of Glasgow. His research explores children's mental health, wellbeing, and behaviour in schools, with a particular emphasis on strengthening teacher confidence in supporting emotional regulation, engagement, and belonging. He also leads internationalisation initiatives through Collaborative Online International Learning (COIL), fostering innovative cross-cultural partnerships that enrich teaching and learning. Drawing

on more than 25 years' experience across early years, primary, secondary, and higher education, Mark combines academic scholarship, policy engagement, and hands-on expertise in community-based wellbeing interventions to advance inclusive and supportive educational practice.

Dr Gabriella Rodolico is Director of Internationalisation and Senior Lecturer in Science Education at the University of Glasgow's School of Education. She leads global engagement by embedding systems-thinking approaches, expanding Collaborative Online International Learning (COIL), and enhancing student and staff mobility through innovative, inclusive pedagogies.

A recognised educational innovator, she integrates virtual/extended reality (VR/XR) and generative AI into learning and teaching. She has led international VR projects, funded, for example, by British Council Going Global, building capacity with platforms such as ClassVR Avantis and HTC Vive Focus, and installing immersive technologies such as the Edify pod at the School of Education.

In COIL, Dr Rodolico designs and scales project-based, cross-institutional modules that connect Glasgow students with peers worldwide through co-taught, synchronous and asynchronous learning. Her approach prioritises intercultural competence, and aligns assessment across partners to embed COIL within programmes rather than as an add-on.

Her work includes co-leading the XR in Education White Paper, developing the widely adopted Generative AI in Education MOOC, and implementing COIL as a core internationalisation-at-a-distance experience that demonstrably improves student learning and outcomes. Her contributions have been recognised with the LearnSci Teaching Innovation Award (2021) and highlighted by Education Scotland and the Scottish Government.

Anna Maria Mariani is a psychologist, Associate Professor of Didactics and Special Pedagogy at Pegaso Telematic University. Her research focuses on the development of new competencies for teachers, with a particular interest in the role of the body in teaching and learning processes.

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