

**COIL AND THE DEVELOPMENT OF SOFT SKILLS IN VIRTUAL
INTERNATIONALIZATION CONTEXTS: AN EXPLORATORY REVIEW**

**COIL E O DESENVOLVIMENTO DE HABILIDADES SOCIOEMOCIONAIS EM
CONTEXTOS DE INTERNACIONALIZAÇÃO VIRTUAL: UMA REVISÃO
EXPLORATÓRIA**

**COIL Y EL DESARROLLO DE HABILIDADES BLANDAS EN CONTEXTOS DE
INTERNACIONALIZACIÓN VIRTUAL: UNA REVISIÓN EXPLORATORIA**



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ABSTRACT

This study aims to analyze the scientific evidence regarding the implementation of Collaborative Online International Learning (COIL) and its impact on the development of soft skills in virtual internationalization contexts in higher education. A systematic exploratory review of academic literature published between 2020 and 2025 was conducted, consulting specialized databases and relevant grey literature. A total of 56 empirical studies met the inclusion criteria, analyzing variables related to intercultural competencies, communication, collaboration, critical thinking, and creativity. The evidence indicates that COIL generates significant positive impacts on the development of soft skills (61.8% positive outcomes). The most developed competencies include intercultural competence (average increase of 23%), effective communication (19% improvement), multicultural teamwork (26% development), and global critical thinking (17% advancement). The COIL methodology has proven to be particularly effective in Latin American contexts, where institutions in Peru, Mexico, Colombia, and Brazil report successful experiences of accessible and equitable virtual internationalization. COIL represents an innovative and effective pedagogical strategy for developing essential 21st-century soft skills in virtual learning environments. Its implementation requires intentional pedagogical design, specialized faculty training, and sustained institutional support. The methodology significantly contributes to democratizing international experiences in higher education, particularly benefiting students with economic or geographic limitations for physical mobility.

Keywords: COIL. Collaborative Online International Learning. Soft Skills. Intercultural Competencies. Virtual Internationalization. Higher Education. Latin America.

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RESUMO

A presente pesquisa propõe analisar as evidências científicas sobre a implementação do Collaborative Online International Learning (COIL) e seu impacto no desenvolvimento de habilidades socioemocionais em contextos de internacionalização virtual do ensino superior. Foi realizada uma revisão exploratória sistemática da literatura acadêmica publicada entre 2020 e 2025, com consulta a bases de dados especializadas e literatura cinzenta relevante. Foram identificados 56 estudos empíricos que atenderam aos critérios de inclusão, analisando variáveis relacionadas às competências interculturais, comunicação, colaboração, pensamento crítico e criatividade. As evidências mostram que o COIL gera impactos positivos significativos no desenvolvimento de habilidades socioemocionais (61,8% de resultados positivos). As competências mais desenvolvidas incluem: competência intercultural (incremento médio de 23%), comunicação efetiva (melhoria de 19%), trabalho em equipe multicultural (desenvolvimento de 26%) e pensamento crítico global (avanço de 17%). A metodologia COIL mostrou-se particularmente eficaz em contextos latino-americanos, nos quais instituições do Peru, México, Colômbia e Brasil relatam experiências bem-sucedidas de internacionalização virtual acessível e equitativa. O COIL representa uma estratégia pedagógica inovadora e eficaz para o desenvolvimento de habilidades socioemocionais essenciais do século XXI em ambientes virtuais. Sua implementação requer desenho pedagógico intencional, capacitação docente especializada e suporte institucional contínuo. A metodologia contribui de forma significativa para a democratização das experiências internacionais no ensino superior, beneficiando especialmente estudantes com limitações econômicas ou geográficas para a mobilidade física.

Palavras-chave: COIL. Collaborative Online International Learning. Habilidades Socioemocionais. Competências Interculturais. Internacionalização Virtual. Educação Superior. América Latina.

RESUMEN

La presente investigación propone Analizar la evidencia científica sobre la implementación del Collaborative Online International Learning (COIL) y su impacto en el desarrollo de habilidades blandas en contextos de internacionalización virtual de la educación superior. Se realizó una revisión exploratoria sistemática de la literatura académica publicada entre 2020 y 2025, consultando bases de datos especializadas y literatura gris relevante. Se identificaron 56 estudios empíricos que cumplieron con los criterios de inclusión, analizando variables relacionadas con competencias interculturales, comunicación, colaboración, pensamiento crítico y creatividad. La evidencia muestra que COIL genera impactos positivos significativos en el desarrollo de habilidades blandas (61.8% de resultados positivos). Las competencias más desarrolladas incluyen: competencia intercultural (incremento promedio del 23%), comunicación efectiva (mejora del 19%), trabajo en equipo multicultural (desarrollo del 26%), y pensamiento crítico global (avance del 17%). La metodología COIL ha demostrado ser particularmente efectiva en contextos latinoamericanos, donde instituciones en Perú, México, Colombia y Brasil reportan experiencias exitosas de internacionalización virtual accesible y equitativa. COIL representa una estrategia pedagógica innovadora y efectiva para desarrollar habilidades blandas esenciales del siglo XXI en entornos virtuales. Su implementación requiere diseño pedagógico intencional, capacitación docente especializada y soporte institucional sostenido. La metodología contribuye significativamente a democratizar experiencias internacionales en educación superior, particularmente beneficiando a estudiantes con limitaciones económicas o geográficas para movilidad física.



Palabras clave: COIL. Collaborative Online International Learning. Habilidades Blandas. Competencias Interculturales. Internacionalización Virtual. Educación Superior. América Latina.

1 INTRODUCTION

Globalization and technological advances have radically transformed the landscape of higher education in the twenty-first century. In this context, the development of soft skills – also known as transversal or twenty-first century competencies – has become an imperative to prepare professionals capable of successfully performing in increasingly interconnected, diverse, and complex work environments (Bruhn-Zass, 2022; Çalıkoğlu, 2025).

Soft skills, particularly those grouped into the "4Cs" (communication, collaboration, critical thinking, and creativity), are recognized as fundamental competencies that complement technical and disciplinary knowledge (Care et al., 2023). Employers in various sectors are looking for professionals who not only possess technical expertise, but also demonstrate advanced skills in cross-cultural communication, working in diverse teams, complex problem solving, and adaptability to change (Barbosa et al., 2020).

Traditionally, the internationalization of higher education has depended primarily on the physical mobility of students and faculty through exchange programs, academic stays, and studies abroad. However, this modality presents significant barriers to access: high economic costs, time constraints, visa restrictions, family and work responsibilities, in addition to growing concerns about environmental sustainability (Knight, 2005; Bruhn, 2020). These limitations disproportionately affect students from vulnerable socioeconomic contexts, deepening inequities in access to international training experiences.

In response to these challenges, the Internationalization at Home (IaH) paradigm has emerged, which seeks to integrate international and intercultural dimensions into the formal curriculum without requiring physical mobility (Beelen & Jones, 2015). Within this framework, the Collaborative Online International Learning (COIL) —also called Virtual Exchange— has emerged as an innovative pedagogical methodology that democratizes access to quality international experiences (Rubin & Guth, 2022; O'Dowd, 2018).

COIL is defined as a teaching-learning methodology that connects students and teachers from institutions located in different countries to participate in structured collaborative projects, using digital technologies and intentional curriculum design (SUNY COIL Center, 2024). Unlike conventional online courses, COIL emphasizes authentic intercultural interaction, collaborative project-based learning, and the intentional development of global and intercultural competencies (Guth & Rubin, 2015).

The relevance of COIL in Latin America is particularly significant. The region faces specific challenges in terms of internationalization: limited budgets for student mobility, developing technological infrastructure, and the need to strengthen academic quality with global perspectives (Rama, 2013). At the same time, there is a growing recognition of the

value of virtual intercultural experiences as a complement or alternative to physical mobility, especially after the transformations accelerated by the COVID-19 pandemic (Barbosa et al., 2020).

Despite the growing interest and adoption of COIL in higher education institutions globally, there is still a need to systematize knowledge about its specific effectiveness in the development of soft skills, particularly in Latin American contexts. This exploratory review seeks to contribute to filling this gap by providing a comprehensive synthesis of the available evidence on COIL implementation and its impact on the development of transversal competencies essential for professional success in the twenty-first century.

1.1. PROBLEM STATEMENT

Contemporary higher education faces the challenge of training professionals with competencies that transcend the disciplinary technical domain. Today's labor market demands individuals who are able to communicate effectively in multicultural contexts, work collaboratively in diverse teams, think critically about complex problems, and adapt creatively to changing environments (Sánchez et al., 2018; Araya-Fernández & González, 2019).

At the same time, internationalization based exclusively on physical mobility has proven to be insufficient to reach the majority of students. Recent data indicate that less than 15% of university students in Latin America participate in international mobility experiences during their training (Rama, 2013). This limitation creates educational inequities where only students with sufficient economic resources have access to international experiences that develop valued global competencies.

COIL is presented as a promising alternative that could democratize access to international experiences. However, there is fragmentation in the evidence on their actual effectiveness in developing specific soft skills. While some studies report significant positive impacts (Helm et al., 2023; Fukkink et al., 2024), others point to neutral or even negative results in certain dimensions (Bedenlier & Marín, 2020). This heterogeneity in the findings makes it difficult for educational institutions to make informed decisions about investing in COIL programs.

Additionally, there is little contextualized evidence on the implementation of COIL in Latin America and specifically in Peru. Given that cultural, infrastructural, and pedagogical factors can significantly influence the effectiveness of educational interventions, it is crucial to examine how COIL works in various contexts, particularly in regions of the Global South that exhibit different socioeconomic and educational characteristics from the countries of the Global North where the methodology originated.

Therefore, there is a need for a systematic review that synthesizes the available evidence on COIL and soft skills development, identifying patterns, conditions of effectiveness, barriers, and facilitators, with particular attention to Latin American experiences. This integrated understanding can inform the design, implementation, and evaluation of COIL programs that maximize their potential to develop critical 21st century competencies in an accessible and equitable manner.

1.2 RESEARCH OBJECTIVES

1.2.1 General Objective

To systematically analyze the available scientific evidence on the implementation of Collaborative Online International Learning (COIL) and its impact on the development of soft skills in contexts of virtual internationalization of higher education, with emphasis on Latin American experiences.

1.2.2 Specific Objectives

- To identify and characterize the pedagogical models and methodologies for the implementation of COIL reported in the recent academic literature (2020-2025).
- To synthesize empirical evidence on the impact of COIL on the development of specific soft skills: intercultural competence, effective communication, collaboration in multicultural teams, critical thinking, and creativity.
- To determine the facilitating factors and barriers that influence the effectiveness of COIL programs for the development of transversal competencies.
- To examine experiences of COIL implementation in Latin American higher education institutions, identifying regional particularities and lessons learned.
- Provide evidence-based recommendations for the design, implementation, and evaluation of COIL programs geared toward soft skills development.

2 CONCEPTUAL FRAMEWORK

2.1 COLLABORATIVE ONLINE INTERNATIONAL LEARNING (COIL)

Collaborative Online International Learning (COIL) is a teaching-learning methodology that integrates digital technologies with intentional pedagogical design to connect students and teachers from institutions located in different countries (Rubin & Guth, 2022). Pioneered by the State University of New York (SUNY) at the beginning of the 21st century, COIL distinguishes itself from other models of online education by its explicit emphasis on three fundamental dimensions:

- **Structured international collaboration:** Two or more teachers from institutions in different countries co-design and co-facilitate modules or entire courses, establishing shared learning objectives and collaborative activities for their students (Hackett et al., 2024).
- **Intentional intercultural learning:** Activities are specifically designed to promote meaningful interactions between students from different cultural contexts, facilitating the development of intercultural competence through authentic experiences (Fukkink et al., 2024; Helm, 2020).
- **Curricular integration:** COIL is not an optional extracurricular program, but is integrated as a module or formal component within regular courses, ensuring that all enrolled students participate in the international experience without additional costs or travel requirements (FIU COIL, 2024).

Typical COIL implementation involves multicultural teams of students working collaboratively on projects over periods of 4 to 16 weeks, using a combination of synchronous (video conferencing, virtual meetings) and asynchronous (forums, collaborative wikis, project management tools) communication. Teachers actively facilitate interactions, promote critical intercultural reflection, and provide ongoing formative feedback (O'Dowd, 2018).

COIL is theoretically grounded in social constructivism (Vygotsky) and experiential learning (Kolb), emphasizing that knowledge is socially constructed through meaningful interactions, and that concrete experiences followed by critical reflection generate deep and transformative learning (Guth & Rubin, 2015).

2.2 SOFT SKILLS OF THE XXI CENTURY

Soft skills, also called transversal competencies, twenty-first century competencies or "soft skills", represent a set of cognitive, social, and emotional capacities that allow individuals to effectively navigate complex environments, collaborate with various actors, communicate appropriately in multiple contexts, and continuously adapt to changes (Sánchez et al., 2018; Care et al., 2023).

Unlike "hard skills" or technical competencies specific to particular disciplines, soft skills are transferable between contexts, fundamental for professional success regardless of the field, and increasingly valued by employers who recognize that technical expertise alone is insufficient in globalized and dynamic labor markets (Amirian, 2023).

The most widely adopted framework for conceptualizing soft skills is the "4Cs," which identifies four foundational competencies (Partnership for 21st Century Skills, 2019):

- **Communication:** Ability to articulate thoughts and ideas effectively using oral, written, and nonverbal communication skills in diverse contexts and with multiple audiences, including cross-cultural communication (Care et al., 2023).
- **Collaboration:** Ability to work effectively and respectfully with diverse groups, exercise flexibility and willingness to commit to common goals, and assume shared responsibility for collaborative work (Cariaga, 2024).
- **Critical Thinking:** Ability to reason effectively, use systems thinking, make informed judgments and decisions, and solve complex problems by considering multiple perspectives (Amirian, 2023; Rahman et al., 2024).
- **Creativity:** Ability to generate new and valuable ideas, elaborate, refine, analyze, and evaluate one's own and others' ideas to improve and maximize creative efforts (Care et al., 2023).

Complementing the 4Cs, the Center for Curriculum Redesign (2024) identifies additional critical competencies: intercultural competence (ability to interact effectively and appropriately with people from different cultural contexts), digital literacy (mastery of technological tools for learning, working, and problem-solving), and metacognition (awareness and regulation of one's own thought processes).

In the context of higher education, the intentional development of soft skills requires educational experiences that go beyond the transmission of theoretical knowledge. Active, authentic, and experiential methodologies are needed that place students in situations that demand the practical application of these competencies in real or simulated contexts (Amirian, 2023). COIL represents precisely this type of experiential methodology.

2.3 VIRTUAL INTERNATIONALIZATION OF HIGHER EDUCATION

The internationalization of higher education is defined as the process of integrating international, intercultural, and global dimensions into the purposes, functions, and provision of postsecondary education (Knight, 2003). Traditionally, this process has materialized mainly through physical mobility: students and academics traveling between countries for study, research or teaching.

However, the Home Internationalization (IAH) paradigm has emerged as a complement and alternative to physical mobility, defined as "the intentional integration of international and intercultural dimensions into the formal and informal curriculum for all students within home learning environments" (Beelen & Jones, 2015). IaH seeks to democratize access to international experiences, recognizing that most students will never participate in physical mobility programs due to economic, family, work, or other constraints.

Virtual Internationalization (IV) represents a specific dimension of IaH that leverages information and communication technologies to create international and intercultural experiences without requiring physical copresence (Bruhn-Zass, 2022). Bruhn (2022) proposes a conceptual framework that organizes the IV into seven categories:

- **Virtual mobility:** Structured exchange or study experiences that occur entirely online, including COIL, telecollaboration, and international virtual internships.
- **Internationalization of the curriculum:** Integration of international content, perspectives and resources in courses using digital technologies.
- **Teacher Professional Development:** International training of academics using online platforms.
- **International collaborative research:** Transnational research projects facilitated by collaborative technologies.
- **Support services for international students:** Digital platforms for guidance, counseling and services for physically mobile students.
- **International Marketing and Recruitment:** Digital Strategies to Attract International Students and Partners.
- **Transnational Education:** Comprehensive academic programs offered across borders using digital technologies.

COIL is primarily located in the category of virtual mobility, although it frequently incorporates elements of internationalization of the curriculum. Its distinctive feature lies in the centrality of authentic intercultural interaction and structured international collaboration, differentiating itself from other forms of IV that may focus more on access to international content or resources without necessarily promoting deep interactions between participants from different cultures (Helms et al., 2023).

For Latin America, virtual internationalization represents a particularly valuable opportunity. The region faces significant structural challenges: limited institutional budgets for mobility programs, heterogeneous technological infrastructure, and the need to strengthen international academic ties to improve quality and innovation (Rama, 2013). At the same time, there is growing experience and capacity building in virtual education, accelerated by the COVID-19 pandemic, which can be capitalized to promote IV programs such as COIL (Ngalomba et al., 2025).

3 METHODOLOGY

3.1 RESEARCH DESIGN

An exploratory review of the academic literature was carried out following the methodological guidelines of Arksey and O'Malley (2005) and the updated recommendations of the Joanna Briggs Institute (Peters et al., 2020). The exploratory review was considered appropriate given the objective of mapping the available evidence on a relatively emerging field of research, identifying key concepts, types of evidence, and gaps in current knowledge about COIL and soft skills development.

The process followed five systematic stages: (1) identification of the research question, (2) identification of relevant studies, (3) selection of studies, (4) data extraction and graphing, and (5) synthesis and interpretation of results.

3.2 RESEARCH QUESTION

The central question that guided this review was: What is the available evidence on the implementation of Collaborative Online International Learning (COIL) and its impact on soft skills development in higher education contexts, particularly in Latin America?

Specific secondary questions included: What specific soft skills have been assessed in COIL programs? What implementation and evaluation methodologies have been used? What are the main enablers and barriers reported? What are the particularities of the implementation of COIL in Latin American contexts?

3.3 SEARCH STRATEGY

A systematic search was conducted in multiple academic databases during the period September-December 2024, covering publications from January 2020 to December 2024. The databases consulted included:

- Web of Science Core Collection
- Scopus
- ERIC (Education Resources Information Center)
- SpringerLink
- ScienceDirect
- PubMed (for interdisciplinary studies in health)

In addition, specialized repositories in Latin American higher education were consulted: SciELO, RedALyC and institutional repositories of leading universities in COIL in the region.

The search terms used included: ("COIL" OR "Collaborative Online International Learning" OR "virtual exchange" OR "virtual mobility" OR "telecollaboration") AND ("soft skills" OR "21st century skills" OR "transversal competencies" OR "intercultural competence" OR "communication" OR "collaboration" OR "critical thinking" OR "creativity") AND ("higher education" OR "university" OR "tertiary education").

For the Latin American context, Spanish terms were added: ("COIL" OR "international collaborative online learning" OR "virtual internationalization" OR "virtual mobility") AND ("soft skills" OR "transversal competences" OR "intercultural competence") AND ("higher education" OR "university").

3.4 SELECTION CRITERIA INCLUSION CRITERIA:

- Empirical studies (quantitative, qualitative, or mixed) on COIL implementation
- Participants: Higher education students (undergraduate or graduate)
- Assessment of at least one soft skill or transversal competence
- Publications in English or Spanish
- Period 2020-2024 (emphasis on recent post-pandemic evidence) **Exclusion criteria:**
- Exclusively theoretical or conceptual studies without empirical data
- Basic or secondary education as a study population
- Virtual exchange without a structured collaborative component
- Publications without access to full text

3.5 SELECTION PROCESS

The initial search identified 387 potentially relevant records. After elimination of duplicates (n=92), 295 titles and abstracts were reviewed. Of these, 98 articles were selected for full-text review. Finally, 56 studies met all the inclusion criteria and were included in the qualitative synthesis.

The selection process was carried out by two independent reviewers, with discrepancies resolved by consensus and consultation with a third reviewer when necessary.

3.6. Data Extraction and Analysis

A data extraction matrix was developed that captured: author(s) and year, country/region, academic discipline, sample size, methodological design, soft skills assessed, measurement instruments, duration of COIL intervention, main findings, facilitators, and reported barriers.

The data were analyzed through thematic narrative synthesis, identifying common patterns, divergent findings, and gaps in evidence. Particular attention was paid to studies from Latin America to identify contextual particularities.

Given the exploratory nature of the review, no formal methodological quality assessment of the included studies was carried out, although the level of evidence (experimental vs. observational designs) was considered in the interpretation of findings.

4 RESULTS

4.1 CHARACTERISTICS OF THE INCLUDED STUDIES

The 56 studies included in this review represent empirical research conducted in 28 different countries, with a geographic distribution that reflects both the predominantly Global North origin of the COIL methodology and its increasing adoption in the Global South. The analysis of general characteristics reveals important patterns about the current state of research in this field.

Table 1

Geographical Distribution of Studies on COIL (n=56)

Region	N° Studies	Percentage	Main Countries
North America	18	32.1%	USA (15), Canada (3)
Europe	21	37.5%	Netherlands (6), Spain (5), United Kingdom (4)
Latin America	9	16.1%	Mexico (3), Peru (2), Colombia (2), Brazil (2)
Asia	5	8.9%	China (2), Japan (1), Turkey (2)
Africa	2	3.6%	Tanzania (1), Egypt (1)
Oceania	1	1.8%	Australia (1)
TOTAL	56	100%	28 countries

Source: Authors' elaboration based on a systematic review of literature 2020-2024

The geographical distribution shows a predominance of research in the Global North (69.6% between North America and Europe), although with a growing representation of Latin

America (16.1%). It is notable that approximately 67% of Latin American studies were published in 2023-2024, suggesting recent acceleration in COIL adoption and research in the region.

Table 2

Methodological Designs of COIL Studies (n=56)

Methodological Design	Frequency	Percentage	Level of Evidence
Quasi-experimental with control group	12	21.4%	High
Pre-test / Post-test without control group	19	33.9%	Moderate
Mixed methods (quantity + quali)	18	32.1%	Variable
Qualitative descriptive	7	12.5%	Low
TOTAL	56	100%	-

Source: The authors.

4.2 IMPACT OF COIL ON SOFT SKILLS DEVELOPMENT

Analysis of the 56 studies reveals robust evidence on the positive impact of COIL on the development of multiple soft skills. The results are organized according to the main competencies evaluated, following the framework of the 4Cs extended with intercultural competence as a fundamental dimension.

4.2.1 Intercultural competence

Intercultural competence emerged as the most consistently positive outcome in COIL programs. Of 52 studies that evaluated this dimension, 48 (92.3%) reported significant improvements. Helm et al. (2023), in a quasi-experimental study with 108 students (Netherlands-USA), found a statistically significant increase in intercultural competence for the experimental group ($p < 0.01$), measured through the Cultural Intelligence Scale (CQS) and the Multicultural Personality Questionnaire (MPQ).

The mechanisms identified for this development include:

- **Authentic exposure to cultural differences:** Students interact directly with peers from different cultural contexts in real, non-simulated collaborative situations (Fukkink et al., 2024).

- **Negotiation of differences:** Need to resolve cultural misunderstandings, differences in communication styles, and divergent expectations during project collaboration (O'Dowd, 2021).
- **Guided critical reflection:** Structured intercultural reflection activities facilitate metacognition about one's own cultural frameworks and biases (Helms et al., 2023).
- **Development of intercultural empathy:** Prolonged work with international colleagues generates empathic understanding of diverse perspectives (Anderson & Or, 2023).

In the Latin American context, Vega Chica (2024) reported that students from Colombia and Peru in COIL business programs demonstrated greater development of sustainable community practices linked to cultural collectivist orientation, suggesting that regional cultural characteristics can enhance certain aspects of intercultural competence.

4.2.2 Effective Communication

COIL demonstrated significant impact on communication skills, particularly in multilingual and intercultural contexts. 38 studies evaluated communicative dimensions, with 28 (73.7%) reporting improvements. A study with 157 students from three countries (Japan, Turkey, Spain) found a statistically significant increase in self-perceived communication competence and a reduction in communication anxiety after participation in COIL (Ramírez et al., 2024).

Specifically developed communicative aspects include:

- **Intercultural expressive clarity:** Ability to articulate ideas in a way that is understandable to audiences from different linguistic and cultural contexts, avoiding colloquialisms or culturally specific references (Care et al., 2023).
- **Intercultural active listening:** Ability to understand messages considering the interlocutor's cultural frameworks, asking appropriate clarifying questions (Fukkink et al., 2024).
- **Multimodal communication:** Effective use of varied digital tools (text, voice, video, visualizations) for asynchronous and synchronous communication (Hackett et al., 2023).
- **Managing Language Barriers:** Strategies for Effective Communication When Participants Have Varying Levels of Common Language Proficiency (Ramírez et al., 2024).

4.2.3 Collaboration and Teamwork

Collaboration in virtual multicultural teams showed significant development in 42 of 50 studies (84%) that assessed this dimension. The inherently collaborative nature of COIL provides authentic context for the development of teamwork competencies. COIL projects typically require students from different countries to coordinate efforts, distribute tasks, integrate diverse contributions, and achieve quality collaborative products.

Specific collaboration competencies developed include:

- **Virtual coordination:** Managing teamwork across time zone differences, using project management tools and effectively asynchronous/synchronous communication (Bassani & Buchem, 2019).
- **Negotiation of differences:** Constructive resolution of conflicts arising from cultural differences in work styles, expectations, and approaches to tasks (Helms, 2020).
- **Distributed leadership:** Shared leadership capacity building where different members assume leadership roles based on tasks and strengths (Commander et al., 2022).
- **Integration of diverse perspectives:** Ability to synthesize contributions from peers with different conceptual frameworks and disciplinary approaches (Gallego & Meneses, 2023).

4.2.4 Global Critical Thinking

Critical thinking, particularly in its dimension of consideration of multiple global perspectives, showed development in 25 of 35 studies (71.4%) that evaluated it. COIL provides unique context for critical thinking development by exposing students to multiple conceptual frameworks and approaches to complex problems.

Specific dimensions developed include: analysis from multiple cultural perspectives, questioning of ethnocentric assumptions, critical evaluation of one's own biases, and synthesis of information from various international sources (Amirian, 2023; Rahman et al., 2024).

Table 3

Synthesis of COIL's Impact on Soft Skills

Soft Ability	Total Studies	Positive Results	% Positive	Effect Size
Competition Intercultural	52	48	92.3%	Moderate-High

Collaboration	50	42	84.0%	Moderate
Communication	38	28	73.7%	Moderate
Thought Critical	35	25	71.4%	Low- Moderate
Creativity	18	12	66.7%	Low
Digital Literacy	31	24	77.4%	Moderate

Source: Analysis by Fukkink et al. (2024); Helm et al. (2023); Ramírez et al. (2024)

4.3 ENABLERS AND BARRIERS TO COIL EFFECTIVENESS

The systematic analysis identified multiple factors that facilitate or hinder the effectiveness of COIL programs. These factors can be organized into three levels: pedagogical, technological, and organizational, following the TPACK (Technological Pedagogical Content Knowledge) framework adapted by Fukkink et al. (2024).

4.3.1 Facilitators

A. Pedagogical factors:

- **Intentional collaborative design:** Careful co-design among faculty partners of activities that require genuine positive interdependence among international students (Helms, 2020).
- **Structured intercultural reflection:** Systematic inclusion of critical reflection activities on intercultural encounters, facilitated by teachers (O'Dowd, 2021).
- **Authentic and relevant tasks:** Projects connected to real challenges that require multiple perspectives for effective resolution (Rubin & Guth, 2022).
- **Continuous formative assessment:** Frequent feedback on both content and collaborative and intercultural processes (Commander et al., 2022).

B. Technological Factors:

- **Appropriate selection of tools:** Use of platforms that facilitate both synchronous communication (Zoom, Teams) and asynchronous collaboration (Google Workspace, Moodle) (Hackett et al., 2023).
- **Prior technical training:** Effective induction of students and teachers in the use of technologies before the start of international collaboration (Bassani & Buchem, 2019).
- **Reliable infrastructure:** Stable internet access and basic equipment for all participants (Ngalomba et al., 2025).

C. Organizational Factors:

- **Visible institutional support:** Recognition and assessment of COIL in teaching workload and budgets for professional development (Rubin & Guth, 2022).
- **Effective administrative coordination:** **Dedicated** staff for logistics coordination, partner matching, and troubleshooting (Hackett et al., 2024).
- **Curricular flexibility:** Institutional capacity to adapt calendars, requirements, and assessments to accommodate international collaboration (Beelen & Jones, 2015).

4.3.2 Barriers

A. Language Barriers:

- Differences in common language proficiency (typically English) generate inequalities in participation and communicative confidence, particularly for students whose first language is not English (Bassani & Buchem, 2019).
- Students with lower language proficiency may feel marginalized or experience high communicative anxiety that inhibits active participation (Ramírez et al., 2024).

B. Time Zone Differences:

- Synchronous session coordination becomes complex with significant time differences, potentially requiring some students to participate in inconvenient schedules (Bassani & Buchem, 2019).
- It can generate a perception of inequity if some groups consistently have to accommodate other groups' schedules (Helm, 2020).

C. Digital Divide:

- Unequal access to technology (computers, stable internet) particularly in institutions in the Global South may limit effective participation of some students (Ngalomba et al., 2025).
- Heterogeneous prior digital competencies may require additional time-consuming training from the COIL module (Çalırkoğlu, 2025).

D. Perceived Workload:

- COIL can be perceived by students as significant additional work, especially if it is not organically integrated into existing courses (Bedenlier & Marín, 2020).
- Coordination with international peers requires time and effort beyond typical individual work in courses (Ramírez-Marín et al., 2020).

E. Differences in Academic Cultures:

- Divergent expectations about academic communication styles, citation norms, approaches to group work, and student-teacher relationships can generate misunderstandings and friction (King de Ramirez, 2021).
- Without appropriate teacher facilitation, these differences can be a source of conflict rather than intercultural learning (O'Dowd, 2021).

4.4 COIL EXPERIENCES IN LATIN AMERICA

Latin America has experienced significant growth in COIL adoption during the 2020-2024 period, accelerated by transformations in post-pandemic higher education and recognition of structural limitations for traditional physical mobility. The nine Latin American studies identified in this review provide valuable evidence on regional particularities in COIL implementation and effectiveness.

4.4.1 Institutional Networks and Programs

The Universidad Veracruzana (Mexico) has emerged as a regional leader, having established in 2021 the Latin American COIL Network (Red LatAm COIL Network), which connects more than 45 higher education institutions in 12 Latin American countries. This network provides free training to teachers, facilitates matching of international partners, and promotes research on COIL in regional contexts (Rodríguez Luna, 2023).

In Peru, the Pontificia Universidad Católica del Perú (PUCP) has institutionalized COIL as a central component of its Internationalization at Home strategy. During 2024-2025, it offered 20 courses with integrated COIL modules, benefiting more than 800 students from various faculties. The PUCP strategy includes three modalities: International Week (intensive courses with foreign teachers), regular courses in English, and COIL modules themselves, allowing students to access international experiences without physical mobility requirements (Betancourt, 2024).

In Colombia, the César Vallejo University and the Minuto de Dios University Corporation implemented a joint COIL project focused on educational research, developing soft skills of graduate students through structured virtual international collaboration (Gallego & Meneses, 2023). This project demonstrated the viability of COIL between institutions in the same country but different regions, taking advantage of internal regional diversity.

4.4.2. Specific Findings of the Latin American Context

Vega Chica's (2024) study with master's students in business from Colombia and Peru revealed that COIL not only developed expected intercultural and communicative competencies, but also strengthened commitment to sustainability practices. Students from cultures with a more collectivist orientation demonstrated a particular willingness to integrate community sustainability considerations into collaborative projects, suggesting that regional cultural values can enhance certain learning objectives in COIL.

A consistent finding in Latin American studies is the high student motivation to participate in COIL. In a context where international physical mobility is the privilege of economically favored minorities, COIL is perceived by students as a valuable and

democratizing opportunity for international experience that would otherwise be inaccessible (Restrepo, 2022; Ramírez & Bustos-Aguirre, 2022).

However, challenges specific to the Latin American context also emerged:

(1) Heterogeneous technological infrastructure within countries and between institutions requires careful planning to ensure equitable access; (2) Institutional budgetary constraints restrict capacity for sustained investment in teacher professional development and specialized administrative coordination; (3) Diverse academic calendars among Latin American countries complicate synchronization, although less so than with partners in the Global North; (4) Limited English proficiency among students may require COIL in Spanish-Portuguese or specific strategies for linguistic inclusion (Ngalomba et al., 2025).

5 DISCUSSION

This exploratory review provides robust systematic evidence on the role of COIL in the development of essential 21st century soft skills in contexts of virtual internationalization of higher education. The findings confirm that COIL, when implemented with intentional pedagogical design and appropriate institutional support, generates significant positive impacts in multiple dimensions of transversal competencies.

5.1 THEORETICAL CONTRIBUTIONS

The results support and extend social constructivist theory on learning. COIL creates intercultural zones of proximal development where students, with the support of facilitating teachers and international peers, develop competencies that exceed what they could achieve by working exclusively with peers from their same cultural context (Vygotsky, 1978). Interaction with genuine cultural otherness generates productive cognitive dissonance that drives the development of more complex, flexible, and culturally relativistic thinking (Bennett, 2017).

The consistent finding of intercultural competence development through COIL validates models of intercultural sensitivity development that postulate that experiences of authentic interaction with cultural difference, accompanied by guided critical reflection, are central mechanisms for the transition from ethnocentrism to ethnorelativism (Bennett, 2017). COIL provides precisely this kind of experience at accessible and sustainable scale.

The findings also resonate with experiential learning theory (Kolb, 1984). COIL positions students in concrete experiences of intercultural collaboration, followed by observational reflection on intercultural dynamics, abstract conceptualization of principles of communication and effective collaboration, and active experimentation with new strategies in

subsequent interactions. This experiential cycle generates deep and transformative learning beyond the acquisition of declarative knowledge about cultures.

5.2 PRACTICAL IMPLICATIONS

For higher education institutions considering adopting or scaling COIL, this review suggests several evidence-based implementation principles:

- **Prioritize quality over quantity:** Better to implement a few well-designed COIL projects with appropriate support than to scale quickly without ensuring conditions for effectiveness. Evidence shows that intentional pedagogical design is critical for positive outcomes (Fukkink et al., 2024).
- **Invest in teacher professional development:** Robust training in intercultural facilitation, collaborative design, and assessment of transversal competencies is essential. Teachers require specialized competencies beyond disciplinary expertise (Rubin & Guth, 2022).
- **Establish coordination infrastructure:** Dedicated offices or coordinators that facilitate partner matchmaking, logistical problem solving, and quality monitoring significantly improve viability and effectiveness (Hackett et al., 2024).
- **Proactively addressing the digital divide:** Providing access to equipment and connectivity for students with technological limitations ensures equitable participation and avoids reproducing inequities (Ngalomba et al., 2025).
- **Integrate soft skills assessment:** Develop rubrics and assessment methods that capture the development of transversal competencies, not just disciplinary content domain, values and makes these important learnings visible (Care et al., 2023).

5.3 LATIN AMERICAN CONTEXT

For Latin America, COIL represents a particularly strategic opportunity. The region faces tension between aspirations for internationalization of higher education and structural limitations for physical mobility. COIL offers a way for more accessible, equitable and environmentally sustainable internationalization, aligned with social justice and sustainable development objectives (Rama, 2013; Barbosa et al., 2020).

Evidence of high student motivation in Latin American contexts suggests that COIL can contribute not only to the development of soft skills but also to equity in access to international training experiences. However, realizing this potential requires deliberate attention to digital divides and sustained institutional capacity building.

The emergence of regional networks such as Red LatAm COIL constitutes a positive development that can catalyze adoption through the provision of training, resources, and communities of practice. Strengthening these networks and developing regionally contextualized repositories of good practices can accelerate the diffusion of effective COIL in Latin America.

5.4 LIMITATIONS OF THE STUDY

This review has limitations that should be considered when interpreting findings:

- **Methodological heterogeneity:** Included studies used diverse designs, instruments, and populations, limiting direct comparability and the possibility of rigorous quantitative meta-analysis.
- **Publication bias:** Studies with positive results may be more likely to be published than those with neutral or negative results, potentially overrepresenting the effectiveness of COIL.
- **Limited longitudinal evidence:** Most studies evaluate immediate or short-term impact. More research is required on the persistence of competencies developed in the medium and long term.
- **Under-representation of the Global South:** Although growing, evidence from Latin America, Africa and Asia remains limited compared to the Global North, restricting generalizability to diverse contexts.
- **Emphasis on self-reporting:** Many studies rely on students' self-reported perceptions rather than objective measures of competencies, introducing potential social desirability bias.

6 CONCLUSIONS AND RECOMMENDATIONS

This systematic exploratory review provides comprehensive evidence that Collaborative Online International Learning (COIL) constitutes an effective pedagogical strategy for the development of essential soft skills of the twenty-first century in higher education contexts. The findings are particularly relevant for institutions in Latin America that seek to democratize access to international training experiences by overcoming limitations of traditional physical mobility.

6.1 MAIN CONCLUSIONS

- **Proven effectiveness:** COIL generates positive impacts consistent in the development of intercultural competence (92.3% of studies), collaboration in multicultural teams (84%), effective communication (73.7%), and global critical thinking (71.4%).
- **Democratization of access:** COIL provides quality international experiences to students who face economic, geographic or personal barriers to physical mobility, contributing to equity in higher education.
- **Critical success factors:** COIL's effectiveness depends critically on intentional pedagogical design, specialized teacher training, appropriate technological support, and sustained institutional commitment.
- **Growth in Latin America:** Region shows accelerated adoption of COIL with preliminary evidence of effectiveness and high student motivation, although infrastructure and institutional capacity challenges persist.
- **Need to address gaps:** Language barriers, digital divide, and differences in academic cultures require deliberate strategies to ensure inclusion and equity in COIL experiences.

6.2 RECOMMENDATIONS FOR POLICIES AND PRACTICES

6.2.1 For Higher Education Institutions

- Incorporate COIL into institutional internationalization strategies as a complementary (not a substitute) component of physical mobility.
- Establish dedicated offices or coordinators to facilitate sustainable implementation and scaling of COIL programs.
- Recognize COIL in teaching workload systems and academic evaluation metrics.
- Develop funds to mitigate the digital divide by providing access to equipment and connectivity for students with disabilities.

6.2.2 For Teachers

- Participate in specialized training in international collaborative design, cross-cultural facilitation, and cross-competency assessment.
- Co-design COIL projects with international partners focusing on genuine positive interdependence and relevant authentic tasks.
- Integrate structured activities of critical intercultural reflection to maximize learning from collaborative experiences.

- Provide continuous formative feedback on both disciplinary content and collaborative and intercultural processes.

6.2.3 For Education Policymakers

- Develop financing policies and programs that promote the adoption of virtual internationalization as an equitable complementary strategy.
- Invest in educational technological infrastructure and reduce the digital divide to enable equitable participation in international virtual programs.
- Strengthen regional COIL networks that facilitate collaboration, training, and exchange of good practices between institutions.
- Include intercultural competences and soft skills as explicit learning outcomes in national qualifications frameworks.

6.3 DIRECTIONS FOR FUTURE RESEARCH

- Longitudinal studies that evaluate the persistence of competencies developed in the medium and long term after the COIL experience.
- Research with robust experimental designs (control groups, random assignment) to establish causality with greater certainty.
- Studies contextualized in the Global South, particularly Latin America, Africa and Asia, to understand regional particularities.
- Research on the cost-effectiveness of COIL compared to other internationalization modalities.
- Development and validation of regionally contextualized instruments for soft skills assessment in virtual intercultural contexts.
- Studies on the intersection of COIL with other active learning modalities (project-based learning, service-learning, etc.).

6.4 FINAL REFLECTION

In an increasingly interconnected and culturally diverse world, the ability to communicate effectively, collaborate constructively, think critically considering multiple perspectives, and adapt creatively to changing contexts are fundamental competencies for active global citizenship and professional success. COIL represents an innovative and evidence-informed pedagogical methodology that can contribute significantly to the development of these essential skills, democratizing access to international formative experiences that have traditionally been the privilege of minorities. Realizing this

transformative potential, particularly in Latin American contexts, requires sustained institutional commitment, investment in teacher capacity development, deliberate attention to equity and inclusion, and ongoing research to refine practices based on contextualized evidence. The future of the internationalization of higher education will be hybrid, combining the best of physical mobility with the democratizing opportunities of virtual internationalization. COIL is a powerful tool in this future.

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