Implementing Collaboration and International Projects to Address Global Problems

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Abstract

This paper will present practical recommendations for the implementation of Collaborative Online International Learning (COIL) projects through the experiences of a joint venture between the Universidad del Valle de Guatemala (UVG) and the University of Central Florida (UCF) the United State of America. Initiated in August 2024, the project emphasizes international collaboration to solve global problems while discovering new solutions using international cooperation and diversity of perspective. It aims to broaden students' views beyond insular perspectives, encouraging them to explore novel solutions through international cooperation. Students from UVG and UCF engaged in scientific and sociocultural research to discover new approaches to global issues. Key components of COIL include faculty and student engagement, cultural adaptation, and cross-cultural communication. The paper will outline the structure of an effective COIL course, recommended practices, and hands-on activities using technology and AI [1][2].

Keywords: *Collaborative Online International Learning, Intercultural engagement*

1. Introduction

This article will present a joint international project experience undertaken by the University of Central Florida (UCF) and Universidad del Valle de Guatemala (UVG) to implement a global learning experience in our classes for undergraduate students. The methodology chosen to carry out this endeavor is Collaborative Online International Learning (COIL). This method supports the development of High-Impact Practices throughout the components of a well-structured COIL experience. Students collaborate in an international learning experience, interact with faculty and peers on a global issue, receive positive feedforward guidance, and reflect on the overall experience including its real-life applications. A COIL project reenforces skills valued by employers and advances integration of previous knowledge and novel approaches to problem-solving in an international setting.
We will describe the planning process, and the elements required to facilitate a COIL experience focused on the students´ perspective of an international problem, the sustainable management of water. Also included in this paper is analytical data measuring student perception of course factors key to this experience. We offer our readers a discussion of elements implemented in this course: curriculum development strategies, thematic curriculum segmentation, course platform, ITC and generative AI tools, intercultural sensitivity and cultural adaptation. We conclude the paper with recommendations that can support the success of a COIL experience.

2. Why Implement a COIL Experience?

2.1 COIL Methodology

The Collaborative Online International Learning (COIL) methodology is a pedagogical approach developed by Jon Rubin, State University of New York (SUNY) in 2006 [3]. COIL enables online collaboration between students and educators from diverse countries and cultures. It emphasizes intercultural interaction and dialogue, working toward enhancing students' communication and collaboration skills in a global context. COIL incorporates collaborative learning strategies such as project-

based and problem-based learning, where students engage in practical projects and complex problem-solving tasks. These activities apply acquired knowledge to real-world situations, fostering critical thinking and intercultural competence. The methodology is structured around stages such as planning, execution, and evaluation, with a focus on collaborative syllabus design and joint online group assignments [4].
COIL democratizes access to international and intercultural learning experiences, allowing students to engage globally without travel-related logistics and costs. This approach aligns with the needs of an interconnected world, promoting internationalization at home and expanding students' learning experiences. It supports the development of essential skills such as communication, team building, decision-making, and negotiation, crucial for success in a globalized workforce [5][6].
COIL enhances intercultural competence by fostering cross-cultural awareness and understanding through shared multicultural learning environments. It encourages collaborative learning, where students and educators from geographically separated institutions work together to create co-constructed learning outcomes [5]. This collaboration enriches the learning experience and facilitates the integration of diverse perspectives and expertise, promoting multidisciplinary work. COIL prepares students for the global workforce by developing skills highly valued by employers, such as working effectively in diverse teams and adapting to different cultural contexts. Additionally, it contributes to personal growth, encouraging open-mindedness and engagement with international peers [5].

2.2 Cultural Awareness and Sensitivity

The COIL experience strives to develop Intercultural Sensitivity as defined by Dr. Milton Bennett (2014) in his *Developmental Model of Intercultural Sensitivity* [7]. The premise theorizes cultural differences as a component in global communication and in teamwork. Based on constructivist and communication theories, Dr. Bennett developed the following model for cultural awareness that extends from Ethnocentrism, knowledge of your own culture to Ethnorelativism, knowledge of your own culture and that of others. Understanding and sensitivity can reduce misinterpretations in multicultural interactions and communication [8]. Figure 1 presents an illustration of the continuum of cultural experience developed by Dr. Bennett.

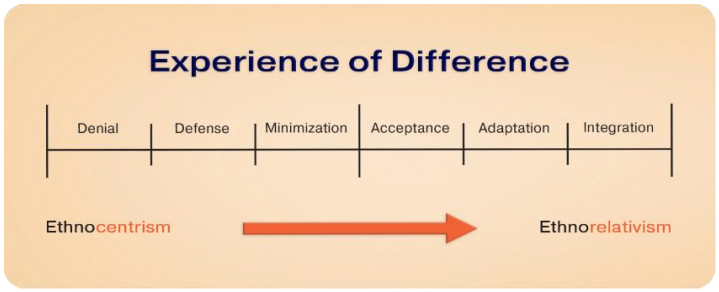


Fig 1. The Developmental Model of Intercultural Sensitivity [7].

In our course we developed course segments that integrated cultural adaptation, sensitivity, and competency to foster effective communication in context culture with an understanding of bias.
Edward T. Hall and Mildred R. Hall (2001) introduced the concepts of High-Context and Low-Context Cultures to describe communication within cultural contexts [9]. In High-Context Cultures, communication relies on non-verbal cues and situational nuances, making it less direct. Conversely, Low-Context Cultures depend more on explicit verbal communication with fewer non-verbal cues. Understanding these cultural contexts enhances effective communication by preventing misinterpretations and breaches of etiquette [9].
To evaluate the effectiveness of the cultural communication aspects of the COIL experience, we implemented assignments that included cultural assessment. Upon completion of the COIL experience, the students participated in a survey with open-end and multiple-choice questions to analyze the cultural sensitivity, awareness of the experience, and student satisfaction.

3. Our COIL Experience

3.1 Preliminary information

In August 2024, professors from UCF and UVG were invited to participate in a collaborative COIL pilot project. They attended the UCF-UVG COIL Faculty Development workshop to develop the course implementing specific COIL methodology. Three months were dedicated to planning and coordinating. The project was integrated into the course programs through faculty collaboration and technical support.

In this COIL experience, 25 students from UCF's *Spanish Language and Culture* asynchronous course and 15 students from UVG's *Introduction to Environmental Management* course collaborated over eleven weeks. Professors from both institutions collaborated in planning, execution, and monitoring. Students focused on culture, social impact and the environment addressing the global issue of water. They were divided into seven groups to analyze bodies of water near each university—one in Orlando, Florida, and one in Guatemala City—through the three pillars of Sustainable Development: social, economic, and environmental. These interconnected pillars emphasize ecosystem protection, social equity, and sustainable economic growth, essential for a resilient future [10].

3.2 COIL Course Structure

Throughout the course the material was presented in six thematic segments. Two segments were implemented with synchronous interaction and four asynchronous. The official language of the course was English, but all materials and course components were bilingual. The details of each segment are presented below in Table 1.

The COIL experience included teaching using strategies associated with High-Impact Practices (HIPs). These practices enhance positive student learning and promote higher levels of student participation. HIPs develop advanced metacognition through interaction with faculty and peers, critical thinking, analytical processing, problem-solving strategies, self-reflection and correction, global and cultural experiences, and real-life applications. All these practices were implemented throughout the holistic COIL experience [11][12].

3.3 Information and Communication Technologies (ICT)

The course was hosted on Canvas Catalog, providing a unified learning environment for students and instructors from both universities. Comprehensive COIL information, task guidelines, and instructions were accessible in English and Spanish, ensuring clarity and overcoming language barriers.

Padlet served as a collaborative tool, essential for completing segments 1 and 6 (see Table 1): the icebreaker and the project conclusion. This online platform allows users to create and share virtual bulletin boards, enhancing collaboration, and communication among remote groups.

Various communication methods were employed. At the student level, several groups used WhatsApp to stay connected. For group communication from professors to students, Canvas announcements were crucial for disseminating instructions and outlining the project's next steps. Documents and informational materials were distributed via Canvas email or institutional/personal email. Zoom was the chosen video conferencing platform for synchronous meetings in segments 3 and 6. Its versatility in providing individual meeting rooms supported the dynamics of these sessions.

Students were encouraged to use Generative Artificial Intelligence (GAI) tools for project implementation, aiding in data synthesis and presentation development. Proper citation using APA 7th edition *was* emphasized, along with transparency in GAI usage. The course emphasized assertive communication, enabling participants to express ideas confidently and respectfully, enhancing self-control and communication skills [13].

3.4 Competencies

Within each COIL segment, three learning competencies were assessed: Knowledge at the Conceptual, Contextual, and Attitudinal levels. *Conceptual knowledge* involves understanding facts and concepts, forming the foundation for the final project on water sustainability. *Contextual knowledge* pertains to applying information in real-world contexts, evaluated through solutions for issues such as presented in our focus on Lake Claire and Rio Contreras. *Attitudinal knowledge* focuses on values and behaviors, assessed through cultural awareness and sensitivity, and personal modification and growth. Rubrics addressed each knowledge type within assigned tasks [14][15].

Table 1. Thematic Segments of the COIL project

Thematic segments	Objective (O) / Competences (C)	Modality	Description
-1- Icebreaker	O: Students get to know each other and interact to build relationships and prepare for group work. C: Identify and interact with students to solidify relationships and prepare for group work.	Asynchronous	This activity helps students connect personally by using Padlet for an icebreaker activity. They must read and respond to 10 posts from students at the other university. (HIPs)
-2- Body of water presentation	O: Students will prepare an informative document about the body of water to present in context the information and members of the group. C: Produce an engaging informative document about the body of water to be addressed in the project.	Asynchronous	Each university group must create an informative document about their water body to share its characteristics with the other university. The format is flexible (e.g., brochure, video) but must follow instructor guidelines. (HIPs)
-3- Informative Meeting	O: Students learn about the joint UCF/UVG project and the work/activities they will be responsible for developing. C: Engaging in cross-cultural collaboration with international peers.	Synchronous	In this meeting, the project will be introduced, and breakout rooms will be provided for groups to meet. Each group will present their body of water and interact with each other and return to the large group room. (HIPs)
-4- Literature review	O: Students gather bibliographic and reference information about the body of water at environmental, social, and economic levels. C: Application of bibliographic review methods to identify missing information about the body of water.	Asynchronous	This is the time designated for researching literature and documents related to the body of water to develop a technical guide. The format for the guide will be provided by the instructors. (HIPs)
-5- Data Analysis	O: Students analyze and evaluate the information about the body of water provided by the other university. C: Develop critical judgment skills when evaluating the document. Contribute to the collaborative resolution of global issues.	Asynchronous	There are two data reports, one for each body of water. In groups, they must analyze and evaluate the data using a Review Guide following instructors' indication. (HIPs)
-6- Presentation/ Closure	O: Students, along with their project group, identify the strengths, threats, and offer recommendations on how to conserve the two bodies of water to propose sustainable solutions. C: Development of active listening skills, information synthesis, empathy, and cultural adaptation. Demonstration of effective team dynamics during presentations.	Synchronous	A Zoom session was held where each group reflected and presented their responses to questions about strengths, threats, and recommendations on how they promote the conservation of both bodies of water. (HIPs)

3.5 Evaluation

Upon conclusion of the COIL experience, students participated in a comprehensive survey evaluating the overall project effectiveness, the quality of cross-institutional collaboration, and their personal performance and engagement throughout the experience.

The evaluation methodology employed in this COIL experience included Feedforward. Feedforward is an educational strategy that serves as a formative assessment before a summative evaluation. Implementing this strategy offers students early exposure and practice with assessments to clarify expectations and standards. It positively impacts students' perceptions, understanding, performance, and satisfaction with assessment practices. For example, in this COIL experience self-assessment, peer comments, discussions of work-in-progress, draft submissions, and interviews offered constructive guidance for student development beyond mere assessment focus [16].

Rubrics and surveys were the primary tools for assessing student performance in the COIL project. Each segment featured a tailored rubric to evaluate Conceptual, Contextual, and Attitudinal knowledge, fostering competencies linked to specific deliverables. Students completed assignments independently

and collaboratively, demonstrating skills in critical-thinking, problem-solving, process analysis, oral presentations, teamwork, self and peer evaluation, and reflection.

4. Outcomes - Key Components for Success

4.1 Importance of clarity

Provide clear knowledge of norms, standards, and cultural context and sensitivity. This focused approach to themes ensured that students had a precise understanding of the desired outcomes, cultural experiences and expected behavior throughout the eleven-week sessions. This foundational knowledge shaped the collaborative experience between UCF and UVG students. As a result, students developed *Attitudinal knowledge*, as reflected in survey responses (Figure 2). The students identified as highly valued behaviors respect (81%) and empathy (76.2%). In addition, respondents identify help (62%), partnership (57%), and cultural awareness (57%) as important values by over 50%.

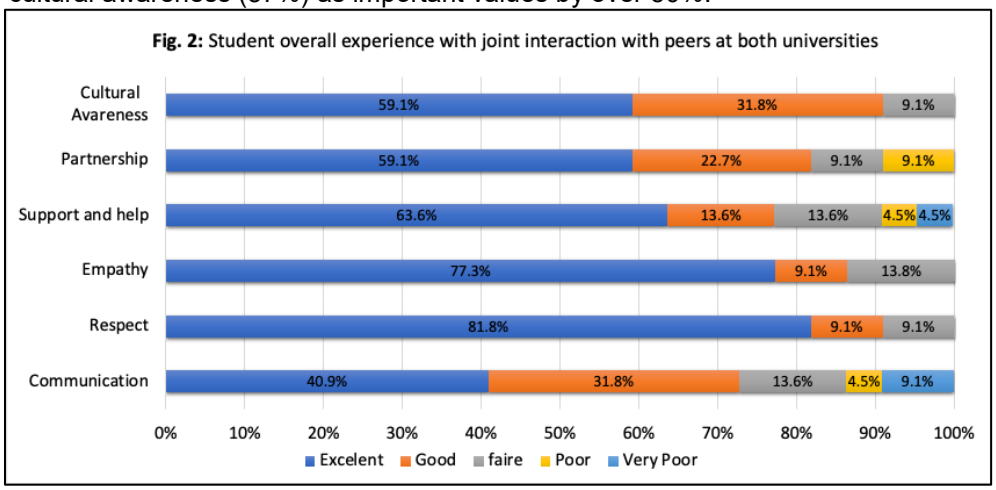


Fig. 2: Student overall experience with joint interaction with peers at both universities

4.2 Communication Strategies

Communication with university peers was rated the highest in the survey with 77% of respondence from excellent to good. Notably, 76% rated bilingual instructions (English and Spanish) from excellent to good. Also, 73% rated excellent to good communication with professors. Students rated interuniversity communication with 50% from excellent to good. This area was least effective (Figure 3).

4.3 Three Concepts of Knowledge

The three concepts of knowledge implemented in this course are included throughout the assignments and assessments. In Figure 4 students ranked their preference between thematic segments separating them into two categories, synchronous and asynchronous segments. The students then selected the three preferred segments. The students identified as highly preferred S1 – Icebreaker (29%), S6 – Conclusion and closure meeting (23%) and S3 - 1st informative meeting (18%). This preference is emphasized in the general comments of the survey, where students suggested having more synchronous segments including more face-to-face interaction with peers. The three least preferred segments are S2 – Informative documents (12%), S5 – Data analysis (9%) and D4 –Literature review (9%). These segments required critical thinking analysis, document preparation, or a research component including synthesis, analysis, and writing, which they found more tedious or time-consuming.

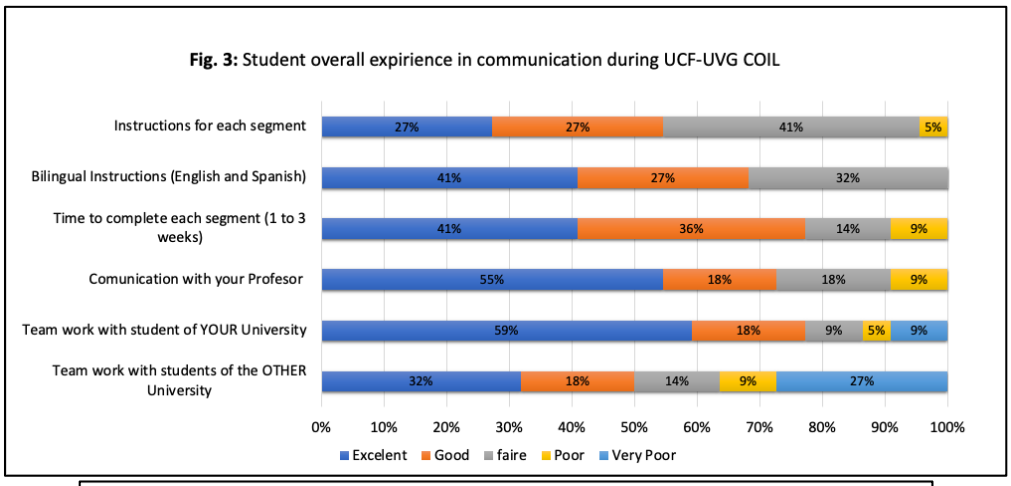


Fig. 3: Student overall expirience in communication during UCF-UVG COIL

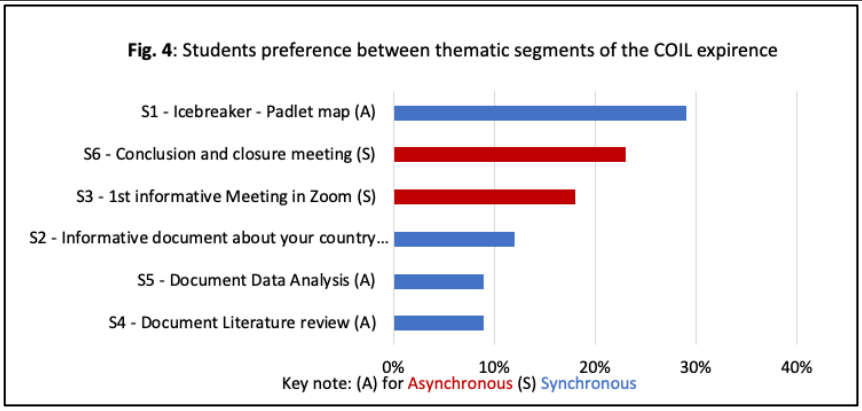


Fig. 4: Students preference between thematic segments of the COIL expirence

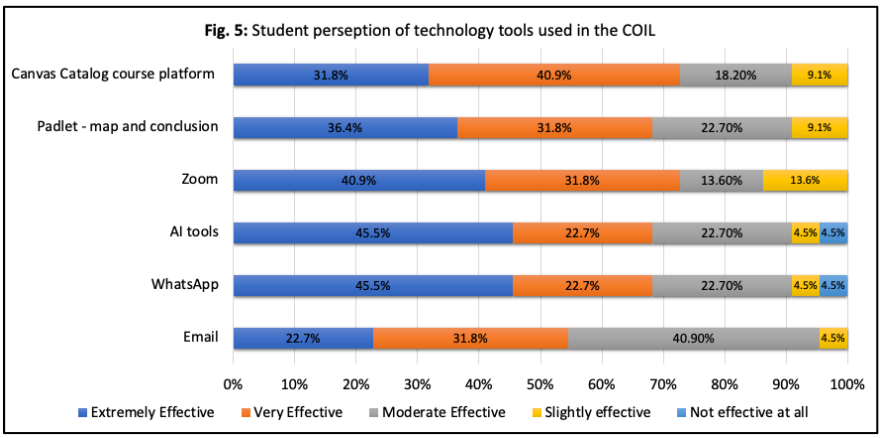
The outcomes included a variety of formats, such as contributions to Padlet discussions during icebreaker activities and conclusion sessions, development of informative documents, creation of presentations, and completion of diagnostic tools, review guides, and self-reflection.

ICT implementation was crucial from the beginning of the COIL experience and facilitated joint interaction through a shared course platform for students at both universities. The Canvas Catalog platform was vital to integration and collaboration among students. Bilingual instructions in each segment significantly improved the understanding of the project's structure, development and requirements. The evaluation of ICTs as tools to enhance the project (Figure 5) demonstrates that 71.5% of students rated the course in Canvas Catalog and Zoom to be the most effective tools for project development. Padlet, AI Tools, and WhatsApp were rated effective by 66% of students. Email was considered the least effective tool, although it still received an acceptable score of 52.3%.

5. Recommendations

Upon concluding the COIL experience and reflecting upon the journey undertaken to develop, teach and reflect upon this experience, we wish to share several recommendations to enhance the effectiveness and success of a COIL experience.

- **Thematic segments.** Establishing thematic segments and specific assignments contributed to a holistic approach in this collaborative experience. The segmented course structure enhanced student engagement and focus. Each segment employed an evaluation rubric fostering a positive feedforward environment, supporting students as they progressed toward the final project. The rubric assessed Conceptual, Contextual, and Attitudinal Knowledge.



- **Communication factors.** Effective communication is crucial in COIL project development. Communication was facilitated at various levels: faculty-faculty, faculty-students, and students-students. Initial contact between professors is vital for success, requiring time, dedication, and a shared purpose to facilitate course coordination. At all levels, Assertive communication supported open expression while respecting others' perspectives.
- **Course platform.** For effective COIL experience, a shared platform like Canvas Catalog is ideal providing a centralized location for instructions, resources, assignments, announcements, and group interactions. Bilingual instructions and support materials are recommended to overcome language barriers. This strategy ensures effective communication and enhances comprehension and participation for students whose native language differs from the course's official language.
- **ITC.** We recommend using Zoom as a synchronous communication tool to facilitate teamwork and breakout sessions. Padlet is highly recommended for interactive activities due to its versatility and positive impact on student perception, promoting interaction and creativity. WhatsApp serves as an additional platform for informal and social communication among students.
- **Generative AI tools**. The implementation of generative AI tools enhanced students' reading and writing skills by enabling them to synthesize information and produce high-quality documents using scholarly sources. It is crucial to inform students about their ethical responsibilities when using AI, emphasizing transparency and integrity. Limiting AI searches to academic sources can reduce errors and misinformation.
- **Intercultural sensitivity and cultural adaptation.** A successful COIL experience requires preliminary and consistent guidance in intercultural sensitivity and cultural adaptation. Providing examples of assertive communication and its application in a global context enhances effective collaboration and teamwork. Collaborating with colleagues from different academic disciplines enriches the learning process by offering diverse perspectives on common topics.

6. Conclusions and Recognition

Both universities and faculty members will continue to develop COIL experiences in their courses in view of the educational and personal enrichment skill development this endeavor has offered the students and the faculty. In addition, further research on the effective use of COIL to develop global communication, cultural adaptation and competency is warranted. The implementation of High Impact Practices in the COIL experience fosters student academic achievement, motivation, engagement, and confidence in their intercultural and communicative skills among other positive educational and personal outcomes.

We express our gratitude to the administrators and personnel at both the University of Central Florida and Universidad del Valle de Guatemala for the opportunity to develop the COIL experience for our students. Their support through the course training, development, preparation, and execution is greatly appreciated.

The COIL pilot project has benefited both students and faculty as it has advanced our goal of offering our students a global learning experience and developing interpersonal and communicative skills required for integration into the global workplace. Cultural awareness and sensitivity, effective communication skills,

teamwork, critical thinking, and problem-solving are essential for success in the interconnected work environment of today.

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