Digital Transformation and Higher Education Innovation in Latin America: Building Sustainable Models Post COVID

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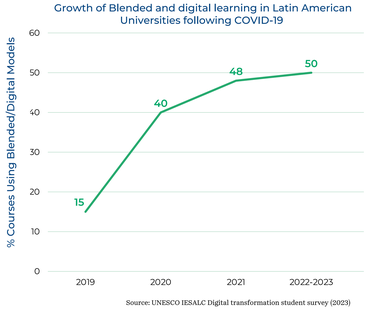
Overview

The COVID-19 pandemic forced universities across Latin America to rapidly shift to online learning, accelerating the adoption of digital tools and collaborative platforms.

This sudden change created an immediate need for virtual exchange initiatives to sustain international collaboration.



Source: UNESCO IESALC Digital transformation student survey (2023)

Virtual exchange is a broad category of digital international learning programs that aims to connect students and educators across countries.

One popular form of virtual exchange is **Collaborative Online International Learning (COIL)**. This course-embedded model links faculty and students from institutions in different countries through jointly designed coursework.

A COIL project typically involves:

Two or more professors from institutions in different countries

Jointly designed coursework or modules

Students working together on assignments or projects

Integration directly into already existing courses

Benefits of Virtual Exchange	Challenges of Virtual Exchange
Increases access to internationalization. Allows students to engage in global learning without having to travel.	**Technology and infrastructure.** Internet connectivity and bandwidth limitations for both students and faculty members.
Enhances linguistics and intercultural experience. Students can improve their language skills and have a better understanding of other cultures.	**Faculty training.** Many professors are unfamiliar with virtual exchange and lack adequate training to launch it successfully.
Institutional collaboration. Facilitates faculty development, innovation, and shared research.	**Institutional support.** Virtual exchange programs require coordination, administrative support, and funding.
Academic and professional development. Fosters critical thinking, problem-solving, digital competence, and collaboration.	**Academic calendar and time zone differences.** Collaboration with institutions in different time zones or with different semester schedules is complicated.

Case Study No. 1

COIL Architecture Project

Institutions
- Universidad de Piura *(Peru)*
- Universidad de Burgos *(Spain)*

Program Model

40 undergraduate architecture students at the Universidad de Piura collaborated virtually with **3** graduate students at the Universidad de Burgos in Spain to solve real-world sustainability and engineering problems.

Successes

- Most students found the learning model effective and were motivated to pursue future intercultural exchange opportunities.
- Students improved their analytical, intercultural, digital, and communication skills.
- Students developed confidence working with international teams and gained insights into construction and energy differences across countries.

Challenges

- Significant age, technical skills, and academic level differences between the two groups required additional effort to balance the collaboration.
- The seven-hour time difference made coordination difficult.
- Asynchronous work created communication barriers between peers.
- The large difference in the number of participants made equal participation and collaboration difficult.

Key Lessons Learned/Recommendations:

- Address age and knowledge disparities by designing tasks to fit the academic level of the individual student.
- Use asynchronous communication methods to mitigate the challenges of working in different time zones. Tools such as Google Docs, Microsoft Teams, and Slack allow for collaborative work.
- Improve asynchronous communication by making sure that decisions and processes are documented, establishing clear expectations, utilizing video and audio to relay important information.
- Balance group sizes to ensure equal collaboration.

Source: "Incorporating Collaborative Online International Learning (COIL) into common practices for architects and building engineers. A case study in Perú and Spain" (2023)- iiiter.org

Case Study No. 2

Global Shared Classroom

Institutions
- Tecnológico de Monterrey *(Mexico)*
- Universidad de Boyacá *(Colombia)*
- Universidad Norbert Wiener *(Peru)*

Program Model

This large-scale initiative sought to establish a Global Shared Learning Classroom *(GSLC)*, a model based on COIL. It enabled **692** students enrolled in the Global Health for Leaders course offered by the universities named above to study and learn together across borders.

Successes

- Demonstrated that large-scale implementation across different institutions was feasible.
- Allowed institutions to embed virtual mobility into their curriculum.
- Encouraged interdisciplinary global problem-solving.
- Students developed a *"regional identity"* and deeper understanding of their country's health problems.

Challenges

- Scaling programs across many departments requires a lot of coordination.
- Given the large number of participating students, extensive back-end coordination between faculties was required to ensure consistent and fair evaluation and grading.
- Completion rates differed markedly by institution, with the Universidad de Boyacá having the highest completion rate *(nearly 70%)*, while Universidad Norbert Wiener had the lowest at **29.4%**. Many of the Norbert students were working adults.

Key Lessons Learned/Recommendations:

- Institutions need to come up with a strategy in order to include courses in the Global Classroom, and the strategy needs to focus on student engagement, not just scalability or size.
- GLSC models need to be more flexible to accommodate different student lifestyles. There isn't a one-size-fits-all for all Latin American institutions.
- Having a dedicated website and collaborating via communications platforms are important ways to foster and maintain a sense of community among learners as well as to prevent confusion across different university systems.

Source: I. Egúluz, LM. Leyva-Barrera, M. Saenz-Nava (2024) Enriching education through global collaboration: A large-scale GSLC experience in Latin America, *EDULEARN24 Proceedings*, pp. 5523-5528.

Case Study No. 3

LA-CoNGA Physics (Latin American Alliance for Capacity Building in Advanced Physics)

Countries
Colombia, Ecuador, Peru, Venezuela, France, Germany

Program Model

An ERASMUS+ project which supported advanced physics education in eight Latin American universities and three European universities, across six countries. This program model formed a virtual teaching and research network to deliver advanced physics courses and collaborative research online.

Successes

- Established a sustainable, collaborative, and diverse virtual research and learning network for advanced physics students and researchers across Latin America and Europe.
- Developed a sustainable, collaborative, online research platform.
- Designed remote laboratories where students performed measurements, calibrations, and data collection from home.

Challenges

- Initially designed as an in-person discussion group, the project pivoted to a remote format and early on suffered recurring connectivity issues.
- Operating remote laboratories required a lot of bandwidth, and many students were unable to connect from home. The project had to simplify connection requirements so that students with limited internet bandwidth could still participate in the remote labs.

Source: J. Peña Rodríguez, L.A. Nuñez (2022) LA-CoNGA physics: an Open Science Collaboration in Advanced Physics between Latin-America and Europe, arXiv.org

Key Lessons Learned/Recommendations:

- A flexible digital infrastructure is essential to virtual learning.
- Virtual collaborations can expand advanced research training in developing regions.
- It is important to adapt instructional strategies in real time to meet student needs.

Overall Lessons Learned

- Programs work best when integrated into existing courses.
- Offer a variety of platforms and forms of communication to provide multiple opportunities for connection.
- Early coordination, faculty training, and support from administration are crucial to success.
- Virtual exchange is aligned with the objectives of the Regional Convention on the Recognition of Studies, Diplomas and Degrees in Higher Education in Latin America and the Caribbean, which aims to strengthen regional cooperation and facilitate student and researcher mobility.
- Virtual exchange can still create a digital divide as students and institutions have varying access to funding, support, infrastructure, hardware, and digital literacy.

Additional Sources: unesdoc.unesco.org
Journal.unicollaboration.org/