Empirical Article

Crossing Boundaries through Collaborative Online International Learning (COIL) during Covid-19: A Participatory Case Study in China

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ABSTRACT

Due to the impact of Covid-19, collaborative online international learning (COIL) increasingly plays an important role in the internationalization of higher education. Based on a participatory case study of a COIL program given at Shanghai University (SHU), this paper explores how students, foreign professors, and professors in China prepare, understand, and experience online teaching, learning, and assessment in a COIL program. Three findings include 1). Organizing COIL Programs with a Global Perspective; 2). Enhancing Teaching and Learning through Intercultural Communication; and 3). The Barriers of COIL in Chinese Universities. Taking insiders' perspectives, we argue that a cultural gap regarding teaching and learning styles can affect COIL programs in Chinese universities, posing challenges for both students and teachers. We suggest that program organizers should focus on the cultural gaps affecting these programs, and provide additional opportunities for intercultural communication to address the cultural gaps.

Keywords: Chinese higher education; collaborative online international learning (COIL); COVID-19; interculturalism, online teaching and learning

Introduction

The Covid-19 pandemic accelerated a move toward collaborative online international learning (COIL) in the internationalization of higher education. COIL is widely valued as a way to enhance learning mobility and promote international collaboration. A number of institutions in China have adopted COIL, yet research has not examined these programs or their impact. In this article, we examine a COIL program at Shanghai University (SHU) as a case study.

Based on reflections from a foreign professor, a professor and organizer from Shanghai University, and two students participating in the COIL program, we explore three research questions. First, what does existing literature say regarding e-learning and COIL in China's higher education sector? Second, how do students and professors prepare, understand, and experience online teaching, learning, and assessment in a COIL program? Third, what are the major challenges that teachers and students face in a COIL program?

The next section reviews research on e-learning and COIL in higher education. Based on the reflections of practitioners and participants, we then explore how SHU's program unfolded and discuss perceived possible room for improvement. Findings indicate that the program has faced a cultural gap (e.g., different teaching and learning styles) that poses challenges for both students and teachers which program organizers should address.

Literature Review

COIL refers to an online teaching and learning practice, created by two or more universities from different countries, in which students learn alongside international peers (Alvarez & Steiner, 2019). Previous literature on COIL has mainly focused on how students view and experience such programs (Dorner, 2018); how instructors prepare and design COIL curricula (Katre, 2020); and how particular departments and faculties promote COIL (de Castro et al., 2019; Mudiamu, 2020).

In this literature review, we searched three databases, including OVID (MEDLINE), ERIC, and the University Library, and we identified 90 related articles. Using Nvivo software, we identified seven major themes as follows: 1) challenges and issues; 2) students' perceptions and learning, 3) intercultural competence; 4) global citizenship education; 5) program organising, pedagogy, and teaching; 6) international collaboration and partnership; and 7) learning environment and technologies. Table 1 shows the prevalence of each of these themes in the reviewed literature. From Table 1, we could see that most of the literature focuses on program organizing, pedagogy and teaching. Other popular areas of research include learning environment and technologies, intercultural competence, and students' perceptions and learning. A few studies focus on intercultural collaboration and partnership and challenges and issues. We therefore suggest that, for future studies of COIL, scholars may need to pay more attention on teachers' and students' perspectives and the cultural issues behind COIL programs and practices.

Figure 1

The prevalence of nine major themes identified in the literature review
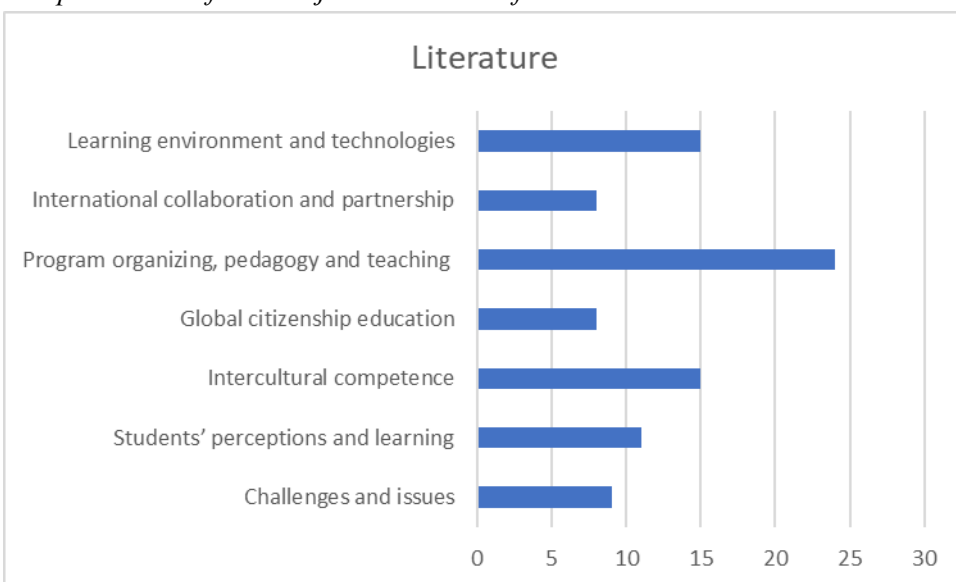
Challenges and Issues

The literature addresses the challenges and issues that COIL programs face. According to Alvarez and Steiner (2019), there are three kinds of barriers that affect COIL: didactical, technological, and organisational. The first refers to barriers that 'make[s] the content, the tasks, or the evaluation more challenging' in the classroom (p. 22). These include intercultural conflicts and implementation barriers. Technological barriers include lack of or uneven internet access, communication misunderstanding, and international access to the learning system. Organisational barriers are the challenges of organising COIL programs in the institutions, which include finding participants, developing curriculum, and achieving the program's commitment in terms of promoting international communication. While scholars recognize the three major barriers in COIL programs, Marcillo-Gómez & Desilus (2016) posits that there are additional challenges in terms of culture and technologies. They first contend that culture needs to be considered when working collaboratively because learning is based on one's cultural context, such as collectivism vs. individualism. They then suggest that educators should provide an open learning environment for helping students learn the differences and similarities among cultures. In terms of technologies, they note how universities use different online learning platforms. For example, a university in the U.S. may not be familiar with a Moodle system that a Mexican university uses. As a result, they suggest that program organizers and teachers should provide technological trainings at the beginning of the course.

Students' Perceptions and Learning

Most literature explores the students' experience and perceptions about learning in the COIL program. Dorner (2018) highlighted that the conceptualisation of international learning among students participating in COIL is important for investigating the implementation of COIL programs. He identifies students conceptualising international learning as either 1) a process to integrate information, skills, and knowledge; 2) international encounters designed to harness diversity of views; or 3) an opportunity for interdisciplinary learning (p. 304). Using a mixed method research design, Vahed and Rodriguez (2021) also explored students' experience of participating in COIL and found that COIL experiences positively influenced students' intercultural awareness, stimulated students' global engagement, and promoted their personal and professional development.

Intercultural Competence

Intercultural competence refers to 'behaving and communicating appropriately and effectively in intercultural situations' (Deardorff, 2004, p. 194). Findings on intercultural competence suggest students who participate in COIL believe they will gain intercultural competence (Kayumova & Sadykova, 2016; Saito et al., 2021). De Hei et al. (2020) found that when the group-learning process improves, students' verbal interaction and participation also improve, a finding which suggests the development of intercultural competence depends on a high perceived quality of collaboration. Kayumova and Sadykova (2016) found that cultural barriers are high, but that, nonetheless, a majority of students appreciated cross-cultural collaboration as 'a means of knowledge acquisition and expressed a desire to participate in some research projects' (pp. 253–254). By utilizing intercultural competence perspectives, researchers can enhance their understanding and examination of intercultural communication in the COIL programs, thereby facilitating the development of students' intercultural competence.

Global Citizenship Education

Previous literature highlighted that COIL could be understood as a tool for global citizenship education, enabling students to learn new perspectives, develop critical thinking skills, question their own cultural practices, and position themselves within a global society (King de Ramirez, 2021). King de Ramirez (2021) viewed COIL as a tool for international exchange, global citizenship education, and online education. Studying the implementation of COIL in

nursing education, Potter and Bragadóttir (2019) found that COIL can provide a positive way of promoting global thinking skills and cultural competence for nurses.

Program Organization, Pedagogy, and Teaching

Many studies explore program organization, teaching and pedagogical practice in the COIL programs. For instance, Yang et al. (2014) explored a collaboration between a Chinese university and a U.S. university, finding that social interaction played an important role in the program's efficacy and describing the model of 'community of inquiry' with which the learners interact with their community through cognitive (construction of meaning through sustained communication), social (ability of participants to project their personal characteristics into the community); and teaching presence (the design and facilitation of educational experience) elements (p. 210). Based on their study, Yang et al. proposed that COIL programs could adopt four models to achieve teaching efficacy, including the topic setting model, the teacher's task model, the use of bilingual language resources, and encouraging unfamiliar cultural interactions.

International Collaboration and Partnership

Studies also looked at the international collaboration and partnership issues in developing COIL programs. Saccocio (2016) studied how professors and students work together to build partnerships across countries. McCollum et al. (2019) explored how COIL in a digital Third Space actively engages students for international collaboration. The authors treated students as partners in multiple ways. They noted that students contribute to collaboration in COIL programs as consultants, international co-learners, co-researchers, and co-designers of the programs themselves. Jeong et al. (2007) argued that COIL programs can build joint international knowledge communities.

Learning Environment and Technology

The learning environment and technology could be two important issues raised in previous studies. Nava-Aguirre et al. (2019) described how COIL could become a strategy for experiential learning and Internationalization at Home (IatH). They argue that the IatH project enables professors to adopt COIL as a model in their courses. They could apply for grants from the project for organizing workshops and webinars, with which they are able to present and share their experiences with students through online environments. Studies exploring the use of technologies to support COIL in various contexts examine computer-based technologies (Fraser, 2005); technology-enhanced learning programs (Zhang et al., 2018); and using big data for COIL (Holtz et al., 2018).

Methodology

In this study, we not only explore the existing literature, but also use a participatory case study design to explore how professors from the two participating universities and students experience the COIL program. The participatory case study, a combination of case study and participatory research, is an innovative research method for studying all phases of a research process in community-based or social research from different participants' perspectives. Participatory research challenges conventional, positivist, and scientific approaches; it balances the relationship between researchers and researched and it empowers participants from socially marginalized groups (Zhu, 2019).

The first, second, third, and fourth authors participated in the COIL program studied here as, respectively, a professor from Canada, a professor from China, and two students. The first author served as a foreign professor from North America and taught the entire internationally collaborative course in Shanghai University. The second author, a professor from China, served as a major host organizer of the course from SHU. Her role was to communicate between the foreign professor and the students from SHU. She also helped to co-teach and provide evaluations in the course. The third and fourth authors were students from SHU. They fully participated in the entire course. After the course, they wrote

a reflexive report about participating in the course. All four of the authors shared different perspectives pertaining to their identities in the course.

In the summer of 2020, we engaged in a two-week course session called "Education in Global Times," a COIL program offered by SHU and a Canadian university. After the summer session, we reflected on our experiences as insider practitioners and students, considered the challenges we faced, and discussed how to best organize future collaborative online teaching and learning activities across countries.

The primary source of data for this research consists of four reflective papers from each of our perspectives. Then, we did a peer review between each other and read the reflective papers together. Treating ourselves as both the researcher and researched, we critically reviewed our experience. As a result of this data analysis, we identified three major findings. We believe this participatory case study methodology could benefit future program organizers, practitioners in higher and adult education, and students.

Shanghai University as a Case Study

Three reasons drove our selection of this COIL program. First, SHU is a prominent institution that is engaged in a variety of internationalization activities. Directly supported and funded by the Shanghai Municipal Government, it is engaged in training professionals to make Shanghai an international financial, trade and technological center. Internationalization has been among its key goals for years, and, in 2020-2021, it renewed efforts to internationalize its faculty and programs despite the COVID-19 pandemic through measures like student and faculty exchange programs, international conferences and workshops, and collaborative research and teaching. SHU thus has abundant experiences with and support for COIL.

Second, because of its short duration and limited participants, the program under study is ideal for assessing the short-term effect of cross-boundary collaborative teaching and learning. Yet, its successful completion demands the gradually accumulated expertise of international collaborative teaching and learning. The 'Internationalized Short Semester' has been a star program at SHU, highly rated among participating students and foreign professors. The program aims to provide a globalized environment for local students—an authentic study-abroad experience without travel.

The program is an expansion of the "International Course Week" of 2012, when professors from universities abroad offered a range of one-week, condensed general education courses to SHU's undergraduate students under an overarching theme. Resources were amassed through the mobilization of SHU's own faculty. Professors at SHU were encouraged to invite their foreign colleagues, and each SHU professor arranged numerous services for their guests, from international travel to the input of student grades for the 1-2 foreign professors each had invited. From 2012 to 2016, the program has been steadily expanding, producing a core team of local teachers, foreign professors, and experienced staff. Over those 5 years, 258 professors across multiple disciplines offered summer courses on the SHU campus. "International Course Week" eventually evolved into the two-week "Internationalized Short Semester." The local teacher-foreign professor collaboration model remained the same, while the extra week helped both teachers and students to adjust to the program and communicate more effectively.

Third, the adaptation of the "Short Semester" into an online program in 2020 shows the flexibility of COIL under unexpected circumstances. When COVID-19 impeded international travel and limited cross-border exchange, SHU's Office of Academic Affairs continued to host the Internationalized Short Semester online via Zoom. More than 40 foreign professors offered 39 courses on subjects ranging from artificial intelligence to fantasy literature. The 2020 theme was "Science, Society and Culture in the Age of Intelligence." In 2021, it was "Educational Innovation in the Post-epidemic Era."

This COIL program is designed to introduce advanced pedagogical concepts and experiences to teachers and students at SHU, as well as cutting-edge research in the foreign professors' fields. In many cases, foreign professors and

local teachers developed new collaborative projects through the program. Some foreign professors who became involved with SHU through these summer courses have since joined SHU's faculty.

Results

We explored how students and professors prepared, understood, and experienced online teaching, learning, and assessment through COIL. Three findings emerged: 1) Organizing COIL Programs with a Global Perspective; 2) Enhancing Teaching and Learning through Intercultural Communication; and 3) Barriers of COIL Implementation in Chinese Universities. We analyze the three findings in the following sections.

Organizing COIL Programs with a Global Perspective

Through analyzing the voices from students and professors, we find multiple factors affecting the organization of COIL in China. These factors include 1) designing the course content with a global perspective; 2) combining diverse teaching and learning tools; and 3) creating a safe, comfortable, and inclusive learning environment. We argue that when organizing COIL programs in Chinese universities, practitioners need to maintain a global perspective.

Designing the Course Content with a Global Perspective

The course entitled *Education in Global Times* is positioned on a general introduction level; it helps students understand some basic concepts in educational research and to cultivate critical thinking skills. During the first week, the foreign professor gave a brief talk on education. The concepts of global education and international education were introduced through a combination of videos and theory. Students learned about global citizenship education in two lessons. The concept of global citizenship was illustrated, which aimed to cultivate students' sense of belonging to the global community. The foreign professor used the Four C's Method (critical thinking, collaboration, creativity, and communication) to assist students through the circle of critical praxis. The students were asked to present in groups based on their study interest in the second week. Through this arrangement of course content, students learned about the concept of global education. They learned about different forms of education with a global perspective and reconsidered the multiple goals of education. Student A said that:

> I gained a brand-new perspective on thinking and a new theoretical model. Just like what was mentioned in the class, I got to know how the world works, becoming outraged by injustice and willing to change it. I got to form a sense of belonging to the global community. In China, there is a serious shortage of courses related to the cultivation of practical ability or spiritual things. This course provides me a global perspective to understand identity, spirituality, and community (Student A's reflective paper).

Both students and the professor co-developed the curriculum for teaching and learning and learned different perspectives and research topics in educational studies. The foreign teacher developed a research project on COIL with the students and professor in China. In her reflective paper, she said that the COIL was "valuable and inspirational"; that the influence of the two-week course would "never stop"; it had "enriche[d] [her] international and online teaching experience"; and would lead to future research.

Combining Diverse Teaching and Learning Tools

The instructors reported that the use of diverse tools for teaching and learning could enhance students' learning motivation and the professors' teaching skills. The foreign teacher explained that "mak[ing] students…talk/share/participate and prompt their learning motivations through various online tools… requires a combination of diverse tools," including Zoom and many others. She credited SHU's tutorials regarding such tools as "well-designed and clearly stated," providing "lots of instructions and suggestions in terms of how to use [them]".

In addition, students expressed satisfaction with the incorporation of diverse methods and tools, which they found convenient and cost-effective, as well as aiding their access to a range of free learning resources. For example, Student B said the following in their reflective paper:

> I was getting used to a combination of online and offline learning methods. I used to take face-to-face lessons on the campus. But [after the shift to distance education in early 2020] [b]oth teachers and students are trying to adapt to the new mode of learning…. During this process, I learned to conduct initiated-learning instead of task-oriented learning.

Students could share and use free learning materials by using free learning tools, which is an advancement in today's teaching and learning environment. Student A said the following in their reflective paper:

> We can find learning materials online and share with our peers. As a student without any income, I like this kind of learning for accessing free online learning materials and discussions.

Creating a Safe, Comfortable and Inclusive Learning Environment

To ensure a safe, comfortable, and inclusive learning environment for the COIL program, the foreign professor provided discussion opportunities for students to share their ideas and experiences with their online classmates. One viable format was group discussion, which transpired in both large group discussions and small group discussions of 12-14 students in Zoom breakout rooms. For the large group discussions, the professor provided some guiding questions. For the small group discussion, she instructed students to introduce themselves to each other and designated a facilitator, a note-taker, and 1-2 reporters to report back to the whole class. She visited each room and make sure every group was discussing the three questions she had supplied. Through these group activities, the students started to get to know each other and enjoyed sharing their experiences and discussing the questions with each other.

The professor also used small interactive online activities. For example, in teaching the concept of "identity," she asked students to draw a picture about themselves and list their identities. After the drawing, she asked students to turn on the cameras and share their pictures with the group, which many did, some of them using the class's WeChat group. This type of activity can help students to visualize concepts.

In general, students showed a positive attitude towards the online curriculum. At the beginning, few students wanted to participate, but group activities made them more comfortable sharing their experiences and opinions. By the end of the course, more than three quarters of the students had spoken in the class. This process proved that providing a safe, comfortable, and inclusive learning environment requires trust and frequent interactions. Sharing one's experience and stories may play important roles in creating a comfortable learning environment.

Enhancing Teaching and Learning through Intercultural Communication

Culture played a significant role in the COIL programs. Previous literature on COIL has addressed how to deal with cultural differences, how to overcome cultural barriers, and how to enhance students' intercultural competence (De Hei et al., 2020; Kayumova & Sadykova, 2016). However, not so many studies focus on how to use intercultural communications in COIL program to not only overcome the cultural barriers, but also enhance teaching and learning activities.

In our study, we found that there was a cultural gap between the Chinese educational system and the foreign higher education system. The cultural gap divides China's educational system from others, which requires a transformation of teaching and learning styles, such as changing from a teacher-centered class to a student-centered class. Our findings suggest that increasing intercultural communication is a useful way to transform a curriculum from a teacher-centered class to a student-centered one under an intercultural context.

Transforming Curriculum

The COIL program gave students a unique opportunity to have a novel learning experience. For example, they learned how to communicate with international scholars, how to develop knowledge and learn about culture from a global perspective, and how to learn in a student-centered classroom.

The foreign professor offered a student-centered curriculum based on Canadian educational philosophies and curricula, which encouraged frequent online interactions between students and teachers and required the teachers to make sure all students had a chance to speak. At the beginning of the course, she expressed three expectations: 1) that students would adapt some key concepts into actual case studies in education; 2) that students would actively participate in in-class discussions and give presentations in groups; and 3) that students would cultivate a new perspective on global education that would help them develop their critical thinking skills. But she noted that it was difficult to implement a Canadian-style student-centered classroom. She questioned whether the Chinese students accepted the Western curriculum and whether the Canadian-style classroom met the students' expectations.

Students did adjust to the student-centered pedagogical style. Many learned to express their opinions. For example, in small group discussions about the challenges of education in South Africa, Indonesia, Ireland and England, some groups had a heated discussion that led to an excellent 20-minute report on their discussion. Many students were glad they had connected with a group of like-minded people and noted that the student-centered curriculum required self-directed learning skills. Student A, for instance, said:

> We were required to go deeper into the reading materials and the course content and ask questions, thus cultivating our habit of critical thinking. Once the professor asked a question or put forward a viewpoint for discussion, we had to form personal views on it and find reasonable grounds to support it. Then, we thought about how to express our opinions and how to organize our answers. In this way, we learned how to connect our [viewpoints] to real world situations and shared them with our classmates. It's not easy. But eventually, we mustered our courage to turn on the microphone and communicate with the professor in English. The distance between teachers and students was greatly narrowed.

Learning through Intercultural Communications

Intercultural communication is "a unique phenomenon deserving of treatment as a special class of communication" - one every individual can achieve (Ellingsworth, 2017, p. 99). It played an important role in enhancing students' learning. Based on our experience, we wondered how culture affects students' perceptions and communications in a COIL program. The professor from SHU said that while Chinese college students are used to teacher-centered and lecture-based courses, they were willing to engage in the student-centered format. She noted:

> Sometimes, they open up more easily than American students, and in a more respectful way toward the instructor and their peers. In terms of reading, Chinese students are used to reading for information, rather than looking for arguments and critically evaluating the texts. But they can be easily trained to read and think critically if the instructor incorporates such goals into the curriculum design.

The students found that they enhanced their learning ability through a better understanding of culture. Student A said that she had gained an understanding of the multiple goals that education can have:

> I deepened my understanding in terms of different cultures and people with different views. I now understand education is a multiple choice question; it all depends on people's different choices of their lives and worldviews. I learned that different cultures, educational policies, and teaching and learning models can also shape different people's views and their different educational purposes.

Our observations suggest that, in order to enhance the teaching and learning in COIL programs, we need to encourage more intercultural communication between Chinese students and foreign professors. This approach could allow students to connect their personal experience in China to the learning content provided by the foreign professor. Meanwhile, students can critically reflect on the different values, ideas, and culture that they learned from the course.

Barriers of COIL Implementation in Chinese Universities

In our study, we identified three major barriers to the implementation of COIL in Chinese universities. The three barriers include language challenges, technological challenges, and assessment challenges. These barriers may raise questions in terms of the future direction of developing COIL in Chinese universities. In the following section, we analyze these three barriers.

Language Barriers

In our study, we found that the students had little practice in spoken English, and they found it difficult to express their ideas and organize what they wanted to say in a few minutes during the group discussion and Q&A activities. Nevertheless, students truly felt they had learned a lot from the class discussions. During the class discussions, they actually expressed their opinions and engaged in conversations with their peers by using English. They still felt that they could learn and share more if there were no language barriers. We believe that it will take time and repeated practice with COIL for students to overcome such language barriers.

Technological Barriers

In addition, technological barriers are another important issue. For example, the students sometimes had a bad connection to the Internet, which affected overall attendance in the lecture sessions, as well as the results of examinations. Online learning is closely linked to a new-mode of self-learning, with which most Chinese students have not been familiar. The conventional style of pedagogy in China emphasizes classroom management, discipline, and the performance of the instructor, while online learning calls for students to play a more active role in learning. Students are required to think independently and to manage their own time. At the beginning of the testing course, most students were not accustomed to self-learning. They struggled to forego a strong dependence on the teacher and textbook, and they set their own learning goals according to the course syllabus. Eventually, they shared materials and experiences with their classmates online, with the aim of creating an atmosphere of collective learning. After all, an equal, open, and sharing new learning environment requires joint efforts from everyone.

Assessment Barriers

One of the biggest problems in COIL is that the assessment for teaching and learning is not yet developed. Studying at home demands a lot of self-control from students, given the temptations of mobile phones, TVs, and other forms of entertainment within reach. The outcome of online learning basically depends on students' self-discipline, instead of effective monitoring or external supervision. In addition, a fully functional system to make synchronous tests possible for fair long-distance exams or other forms of assessment does not yet exist. Therefore, instructors need to develop their own measurement and assessment strategies for evaluating students' learning outcomes and their own teaching efficiency.

Discussion

This study used the COIL program at SHU as a case study and analyzed how students, foreign professors, and professors in China prepare for, understand, and experience online teaching, learning, and assessment in a COIL program. Three findings emerged. First, designing a global course content, using multiple learning tools, and creating a safe, comfortable and inclusive learning environment are all challenging tasks. Second, a cultural gap can exist within COIL programs. One cultural gap may include different teaching and learning styles and contents, such as the teacher-centered style and the student-centered style. We contend that scholars and practitioners need to pay more attention to this issue to increase intercultural communications in COIL. To enhance the teaching and learning in COIL programs, intercultural

communications between Chinese students and foreign professors should be encouraged. The third finding highlights three major barriers to the implementation of an effective COIL program in a Chinese university: language, technology, and assessment. These barriers should be the focus of future research and COIL development.

Based on our findings from this participatory case study in China, we suggest that although COIL can provide a convenient online learning approach to enhance Chinese college students' international learning experience during the pandemic, course organizers may need to focus on the limitations caused by cultural conflicts and cultural barriers. In order to better organize COIL programs in higher education, we suggest that designers and practitioners should pay more attention to the following aspects: cultivating students' learning skills, providing students with opportunities to develop global perspectives, and helping to increase students' intercultural communication. The use of COIL in Chinese universities is approximately a decade old. During the Covid-19 pandemic, COIL played a critical role in promoting internationalization in higher education. We conclude that the development of COIL programs should not be limited to improving online teaching and learning practice but should also focus on cultural issues in order to promote increased intercultural communications between individuals, universities, and nations.

Conclusion

We are living in a world with increased technological development, cultural interaction, and expression of individual identities, each of which require collaborations in teaching and learning across countries. This study contributes to our understanding of how COIL programs can be effectively organized and practiced from four insiders' perspectives. This article has its core purpose of stressing the growing importance of COIL studies in higher and international education. A comprehensive literature review is provided to discuss the current studies in the field and what we could explore for future research.

This article also has as its purpose the intent to close cultural gaps between students and teachers from different countries. We find that while organizing COIL programs requires a global perspective, it is also important to be aware of the cultural gaps and intercultural communications happening through the teaching and learning process. Our study particularly contributes to an understanding of the cultural gaps existing in COIL programs, and we suggest that scholars and practitioners need to pay more attention to the cultural issues, such as different philosophical foundations in the curriculum and different teaching and learning styles in each country, in order to bridge cultural differences and close the cultural gap. Finally, we also point out that teachers and students in COIL programs face several challenges in terms of learning, technological, and assessment barriers. It serves to stress that a deeper understanding of teachers' and students' needs and challenges would inform more effective COIL programs in the future.

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