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Ewa WIĘCEK-JANKA[1], Anna PIETRASZEK[2], Andrea RODGERS[3], Wendy GUESS[4], Magdalena SIKORSKA[5], Agnieszka MISZTAL[6]

THE UNIVERSITIES OF THE FUTURE – CROSSING THE OCEAN VIRTUALLY

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This paper evaluates the effectiveness of Collaborative International Online Learning (COIL) in cross-cultural business curricula, where students collaborate within multinational and multicultural teams without the need to travel. The COIL offers an innovative alternative to traditional study abroad programs, providing a global learning experience through virtual platforms. This approach enhances the internationalization of business education and equips students with the competencies needed to navigate global challenges, fostering a broader understanding of diverse cultural perspectives. The study focuses on the collaborative efforts between business students from a U.S. university and a Polish university during the COVID-19 pandemic. It examines the processes, tools, and outcomes of this online global collaboration, demonstrating how COIL facilitates meaningful interactions and deepens students' appreciation for diverse viewpoints. This study also discusses the challenges encountered during the implementation of COIL, such as technological barriers and differences in communication styles, and how these obstacles were addressed to ensure successful collaboration. The findings highlight COIL's role in enriching the learning experience, developing effective global collaboration strategies, and preparing students for the complexities of working in virtual international teams.

Keywords: distance learning, marketing research, quality education, COIL, intercultural teams

[1] Poznan University of Technology, Faculty of Engineering Management. ORCID: 0000-0002-5596-307X.
[2] Florida International University, College of Business. ORCID: 0000-0002-1087-9376.
[3] Florida International University, College of Business. ORCID: 0000-0002-1152-3419.
[4] Florida International University, College of Business. ORCID: 0000-0002-4906-7105.
[5] Poznan University of Technology, Faculty of Engineering Management. ORCID: 0000-0001-5371-9746.
[6] Poznan University of Technology, Faculty of Engineering Management. ORCID: 0000-0003-4439-4198.

1. INTRODUCTION

One of the fundamental components of international business curriculum is the ability to work and thrive in the international arena. For decades, universities around the world have been accommodating to the growing number of international collaborations. Business schools, in particular, have explored international collaborations with the understanding that there is a strong need to develop and implement an international component into their programs.

A global curriculum is imperative in the classroom as well as through supportive programs where students can develop critical thinking skills, a global mindset, and cultural intelligence to obtain mobility in the international arena. It is important for students to have knowledge and understanding of the global economy, not just through traditional lectures, but also through study abroad programs and participating in international projects.

International Business curriculum should provide students with a variety of learning opportunities that allow them to connect with their peers across the globe. Study abroad programs are a key component to the internationalization of the faculty and students (Hult, Lashbrooke, 2003).

If a university has the opportunity to host or participate in one of many available programs, an excellent resource for faculty is a Center for International Business Education and Research (CIBER), funded by the U.S. Department of Education. CIBER's mission is to promote students' achievement and prepare them for global competitiveness (CIBER, 2021). In a study, Conners (2011) underlines that CIBER's core values lie in "identifying and leveraging cross-campus, interdisciplinary resources to develop programming that achieves three core program requirements and demonstrates impact at campus, regional, and national levels".

CIBER centers across the U.S. provide a great opportunity for faculty to enhance their skills and for students to participate in new, innovative learning. Faculty can further develop their skills by participating in faculty development programs. In addition, CIBER provides students experiential learning opportunities through the development of programs which include real-world issues while exploring new cultures, customs and languages (CIBER, 2021). It plays a highly influential role in shaping international business curricula by integrating practical application. For business schools to thrive in an international context, it is essential for them to globalize their programs.

Building bridges between higher education institutions is a natural step for global curriculum development. CIBER programs foster global intercultural fluency and prepare students to become global professionals and citizens. Jose de la Torre and Corinne Young (2020) underlined in their study that a "global citizen" should abide by four fundamental standards: moral, political, cultural and economic.

The opportunity for students to connect with their peers in other countries and cultures allow them to understand and develop global citizenship, which is a key

component in the study of international business. According to both researchers, "business schools have a crucial and urgent role to play today in educating global citizens" (2020). Furthermore, international business curriculum should prepare students to work efficiently in a changing business environment and provide them with the necessary tools to succeed (Berg, 2020). Online technology has provided business schools with an alternative means to implement international components in the curriculum. Many schools have leveraged this approach to prepare student for success in the global arena. International business educators understand that the global landscape has changed. The COVID-19 pandemic has played a significant role in reshaping the global business environment (Buckley, 2020). This has been a real-world opportunity for students to learn how global businesses of all sizes must rethink their strategies to adapt to change. Students were not able to travel abroad for international experiences because the pandemic halted study abroad programs. A new program was developed to give students the opportunity to learn and interact with other cultures. Collaborative Online International Learning (COIL) utilizes online technology, providing students and faculty with the ability to continue their international experiences. Faculty see the benefits that COIL provides for their students and themselves. Study abroad programs provided students with the opportunity for cultural immersions (Paik, 2020). COIL offers a similar opportunity without the need for physical travel.

This study aims to assess the effectiveness of COIL in cross-cultural business curricula where students engage in meaningful interactions and collaborative endeavors within multinational and multicultural teams without the need to travel abroad.

2. ENTREPRENEURIAL UNIVERSITIES: INNOVATION, DIGITAL COMPETENCES, AND DIVERSITY IN EDUCATION

The idea of entrepreneurial university has been a popular concept in the recent years. It emphasizes the role of higher education institutions in stimulating entrepreneurship and innovation. It is based on adapting university teaching and research activities to support different kinds of entrepreneurial actions that contribute not only to competitiveness and economic growth, but also reinforce employability of the students in the future. Promoting innovation and entrepreneurship through curricular transformation is an important trend observed across universities. Well-structured curriculum is a key component for achieving the integration between innovative and professional education. Designing a curriculum that combines theoretical learning with practical approaches ensures that students are able to apply gained knowledge in diverse real-world scenarios (Yang, 2024). The influence of market competition and external resources are important factors that influence curricular changes in higher education. These factors influence universities' decisions to offer more opportunities in innovation and entrepreneurship

area (McClure, 2015). The concept of COIL (Collaborative Online International Learning) is integrated into the framework and curricula of entrepreneurial universities, as it enhances the entrepreneurial potential of students by supplying them with collaborative experiences and global perspectives. Since COIL facilitates international cooperation through usage of different digital technologies, it is very much aligned with the main mission of entrepreneurial universities to enhance internationalization endeavors and global partnerships (Błach, Klimontowicz, 2024; Pérez, Méndez-Romero, 2022).

The use of emerging technologies in COIL, such as virtual and online platforms, facilitates the development of a much deeper understanding of different and diversified perspectives and enhances students' ability to cooperate and also communicate across different cultures. Furthermore, such technological integration is crucial for the development of technological capability and media proficiency for students (Rakhimov, 2023). Digital competences have become increasingly important for students in the post-pandemic times, as online learning has become widespread in education. Therefore, developing digital skills, such as digital literacy, technical expertise, but also critical thinking and time management are all essential for successful distance education (Tymchuk et al., 2024).

An important aspect in global international business curricula is managing diversity in teamwork. It is definitely a complex challenge which involves embracing varied perspectives, backgrounds, as well as skills of team members in order to enhance their performance. If succeeded, it can lead to improved creativity, problem-solving and enhanced decision-making processes (Van Knippenberg et al., 2020). However, diversity also requires addressing potential challenges, such as conflicts or communication barriers. Therefore, a dual effect of diversity in teamwork is often observed. This means that while, on one hand, diversity can improve team performance by providing different skills and perspectives, on the other, it can also pose challenges related to differences in expectations and goals among team members (Boscari et al., 2024).

Thus, while managing diversity in teamwork may offer plenty of benefits, it is also important to identify the potential drawbacks and try to overcome them early on.

3. RESEARCH METHODOLOGY

Research problem

This study aims to evaluate the effectiveness of Collaborative Online International Learning (COIL) in cross-cultural business curricula, emphasizing its role in fostering intercultural communication, collaborative skills, and global engagement. Specifically, it examines whether COIL can replicate or serve as a substitute for the experiential benefits of traditional study abroad programs.

The methodological framework provides a structured approach to assessing the impact of COIL through clearly defined objectives, hypotheses, and evaluation techniques.

This study addresses the following research question: How effective is COIL in developing intercultural communication, collaboration, and global citizenship among students participating in a virtual international learning environment?

The purpose of the study is to:

- assess the impact of COIL on students' intercultural communication skills;
- analyze the challenges encountered during the implementation of COIL, including time zones, language barriers, and technological limitations;
- assess student satisfaction and perceived effectiveness of COIL compared to traditional study abroad experiences;
- identify improvements in students' collaboration and teamwork skills in global virtual environments.

Research hypotheses

The research is guided by the following hypotheses:

H1: Students participating in COIL will perceive a significant improvement in their intercultural communication and global awareness.

H2: Students will perceive COIL to be as effective as traditional international learning programs in developing collaborative and cultural immersion skills.

This research uses a mixed methods approach to comprehensively assess the impact of COIL. Quantitative data were collected through structured surveys, while qualitative insights were derived from open-ended responses and teacher observations. Both types of data were integrated to triangulate findings and ensure robust conclusions.

The sample consisted of 79 students – 48 from Poznan University of Technology (PUT) and 31 from Florida International University (FIU). These students were divided into 17 global virtual teams, each with members from both universities. Demographic data, including gender, field of study, and living arrangements, were analyzed for contextual insights.

Evaluation criteria

In order to measure the effectiveness of COIL, the following criteria were defined:

- self-reported improvements in understanding and interacting across cultural boundaries;
- Likert-scale responses on enthusiasm and commitment during the project;
- surveys capturing insights into challenges (e.g. time zones, language) and collaborative effectiveness;

- student evaluations of the COIL experience and its perceived impact on their academic and professional skills.

Tools and techniques used in the study:

- Google Forms surveys: administered in English and Polish to collect quantitative and qualitative data;
- statistical analysis: A z-test for proportions was used to identify significant differences in student responses between the two universities;
- thematic analysis: Open-ended responses were coded and analyzed to identify recurring themes related to students' experiences and challenges.

4. COIL – A LINK TO CLASSROOM GLOBALIZATION

Collaborative Online International Learning (COIL) is a model that involves cooperation between faculty and students in different countries, involving at least two universities. The collaborating faculty evaluate their individual course and collaborate to devise and incorporate a project. The project enhances and enables students from two or more universities in different countries to connect (FIU COIL, 2021). The COIL augments the classroom learning experience by introducing an international perspective. This is intended to support a higher level of thoughtful interaction between students (King de Ramirez, 2019). More and more universities have implemented the COIL initiative after administrators completed a qualitative study of students seeking their opinion of topics to be included in curriculum and what they should be able to do upon graduation (Landorf, Doscher, 2015; Landorf, Doscher, Hardrick, 2018).

A vital component of COIL is the students' experience collaborating on a project with students from another university and country. To enrich this component, often, the courses in the collaboration are not in the same discipline. For example, the course from University A could be in marketing, while the course from University B is in engineering or business analytics. This enhances the experience for both, faculty and students through an interdisciplinary approach to the global issue addressed as part of the project. The COIL provides students with guidance, real-world experience in vital skills needed in today's global business environment – collaborating online with individuals from various cultures and industries (Landorf et al., 2018). International supply chains are a good example of where these skills are highly valued. As businesses continue to develop international supply chains, it becomes essential to have a solid foundation in diverse communication and collaboration skills (Guimarães et al., 2019).

In order to have a more successful collaboration process, the format of COIL is designed with the following sequence: icebreaker, collaboration, and reflection. The icebreaker is intended to begin a rapport-building process, students engage in activities (synchronous or asynchronous) to enhance social presenting. The

activities are intended to help students begin to build trust by sharing information about themselves, such as what their life is like in their country, or their interests and hobbies. The next part of the sequence is the actual collaboration, which provides students with an opportunity to develop intercultural communication skills. This is the vital element of the COIL process, requiring the groups of students to work together, in teams, to achieve the goals of the project. During this portion of the collaboration, students will utilize technology to work virtually and must make some decisions on how to coordinate and assign tasks within the team. Essentially, the task is meant to include multiple perspectives in order to accomplish it successfully. Reflection, the final portion of the sequence, encourages students to take time to consider what they have learned about themselves, the world around them, and the practical application of concepts (FIU COIL, 2021). Overall, the experience has positively impacted students, with many expressing how much their perspective has changed about the world and the topics they were studying (Asojo et al., 2019). Students are now better equipped and excited about being able to apply the skills they have learned into future careers. Additionally, many students have expressed interest in continuing global interactions, particularly during the global pandemic.

Who would not jump at the idea of connecting with students from around the globe, and have the opportunity for a much more enriching educational experience? Initially, however, faculty members expressed a few concerns, particularly about the additional effort to redesign the courses to offer the COIL experience (Appiah-Kubi, Annan, 2020).

There is a common perception that entirely new assignments or projects need to be created. However, most faculty have found that they are able to repurpose or make some modifications to the existing assignments. This allows faculty and students to focus more on the internationalization of the content (King de Ramirez, 2019). COIL and similar programs are fostered in collaboration with CIBER.

CIBER's purpose is to promote and expand the potential for international trade, following the enactment of the Omnibus Trade and Competitiveness Act by Congress in 1988 (CIBER, 2021). The U.S. Department of Education has regionalized CIBERS throughout the country. Currently, fifteen institutions host a CIBER.

These CIBERs serve to provide resources to students, faculty, and the business community in general (CIBER, 2021). Business schools can utilize these resources and funding to develop and enhance international programs and activities, such as COIL, faculty and curriculum development, research, collaborations, and support for developing global markets (CIBER, 2021).

Faculty interested in participating in COIL can apply to CIBER for a stipend to offset the effort and time that must be invested to revise course activities and collaborate with partner faculty and universities. COIL is free for students, allowing them to benefit from the enhanced global experience as part of a course they would be taking regardless.

5. VIRTUAL TEAMS – ELIMINATING BORDERS

The use of virtual teams has become increasingly prevalent in today's business environment and has extended into education, where they are now used in the classroom settings. This has occurred with the increase in demand and popularity for online programs and courses. Traditionally, classroom learning has included group work, with students forming teams to complete an assigned project.

These teams typically meet face-to-face with all students in the same location and at the same time. Although these traditional teams are still a part of classroom learning, the advances of technology have changed the way teamwork is conducted. Virtual teams have emerged as technological capabilities have evolved (Bergiel et al., 2008). Even if students sit together in the same classroom, their participation in teamwork includes the use of technological tools minimizing the need for in-person meetings. The tools commonly used include email, file sharing, and communication applications, which enable teams to work virtually and communicate with team members synchronously and asynchronously.

Working in Virtual Teams

Much research and work has been conducted on teamwork and virtual teams. The major differences between traditional teamwork and virtual teams are virtual teams rely more heavily on technology for work and communication and the ability to collaborate across boundaries (Powell, Piccoli, Ives, 2004). Virtual teams operate nearly exclusively through the use of technology (Duarte, Snyder, 2006).

Similar to traditional teams, key success factors for virtual teams include leadership, communication, trust, and appropriate technologies (Bergiel et al., 2008; Duarte, Snyder, 2006). Using the appropriate technologies is important for the team to effectively achieve their objectives. Since virtual teams can span boundaries, communication occurs both, synchronously and asynchronously. These factors are necessary not only for virtual teams in organizations, but also for virtual teams in any environment, including student teams within the classroom.

Global Virtual Teams

Global virtual teams add complexity to virtual teams. Typically, these teams consist of members distributed across multiple countries and diverse cultural backgrounds, collaborating on globally strategic projects (Maznevski, Chudoba, 2000). Differences in time zones, holidays, language, culture, and availability of technology pose additional challenges when working in global virtual teams.

Time zone and holiday differences can be easily addressed by establishing guidelines, including a schedule that accounts for various time zones and a calendar listing all observed holidays (Laurito, 2010; Duarte, Snyder, 2006). Moreover, availability and access

to technology can vary from one country to another, making it essential for global virtual teams to establish which tools will be used for collaboration. All team members should have access to these tools. Additionally, the reliability of internet connectivity in each team member's country should be considered when establishing project deadlines.

Language and cultural differences are more difficult to address than time zone and holiday differences. A culturally diverse team can affect performance as language and culture dictate behavior, work habits, expectations, and communication. Accents, idioms, and slang make understanding and interpreting language more challenging (Oertig, Buergi, 2006). It is important for team members to possess cultural sensitivity and intelligence as well as flexibility to better understand and recognize differences within the team. Establishing norms and guidelines for communication and behavior can assist the team with setting expectations and improving effectiveness (Martin, 2010). Teams that successfully leverage cultural diversity benefit from various perspectives. Having culturally diverse teams has been shown to have a positive impact on innovation and perspective, leading to enhanced outcomes for projects (Duarte, Snyder, 2006).

Student Global Virtual Teams

Many business schools, like Florida International University (FIU), provide students with opportunities for international experiences. These experiences include study abroad programs at partner institutions for several weeks or entire semesters, as well as short trips abroad as part of a course. In addition to these experiences, global content is integrated into the curriculum through full courses on international business topics, such as FDI and MNEs, as well as globally focused case studies and topics included across multiple courses.

These trips provided students with opportunities to experience different cultures, business operations, practices, and important sites in other countries. However, due to the COVID-19 pandemic, travel was suspended, canceling all university trips abroad. Consequently, students were left without the opportunity to experience other countries first-hand. Due to the COVID-19 pandemic, individuals, organizations and institutions have had to become innovative and devise ways to achieve their goals. Florida International University built upon its existing foundation, utilizing technology and providing students with global learning experiences to develop an innovative program, COIL, which provides students with an international experience without having to travel abroad. The program leverages global virtual teams to provide FIU students with the opportunity to collaborate with students in another countries. The program is integrated into existing courses, regardless of modality, making it easier for students to participate (FIU COIL, 2021).

Utilizing global virtual teams for collaboration and communication provides students participating in COIL with an invaluable international learning experience. Students from both institutions are given a project that they must complete in

groups or teams. Groups are formed by mixing students from both institutions. The projects are related to the course topics from both partner institutions in COIL.

The experiential learning gained from working in global virtual teams introduces and teaches students at both institutions much more than just the topics covered in the courses and the objectives obtained from the project. They are spanning boundaries and more importantly becoming culturally intelligent. Students must be aware of their cultural and language differences as well as time zones and holidays in order to effectively collaborate and successfully complete the project. With the assistance and direction of the instructors, teams will actively not only gain the business knowledge from the project, but also the soft skills from the global virtual collaboration that are needed to be competitive in the international business marketplace.

6. CROSSING THE OCEAN WITH COIL

A partnership between FIU and Poznan University of Technology (PUT) was initiated in March 2017. The partnership began with active collaborative research in chemical technology and computer science. In March 2020, the idea to conduct the first COIL project between PUT and FIU emerged. At that time, Europe, followed by the U.S. were placed on lockdown due to the Covid-19 pandemic. The courses that would include COIL were housed within two different departments – Marketing and Logistics at FIU and Engineering Management at PUT.

Both universities collaborated in phases to prepare and devise the COIL project for students. As part of the initial phase, meetings between faculty from both universities were organized online via Zoom. The preparatory phase included brainstorming sessions, experts' consultations and literature analysis. These activities led to the development of the objectives for the project in the area of entrepreneurship and small business enterprises.

The curriculum of both courses participating in COIL had little to no international content. The development of the project provided an international component for both courses. An additional global focus on many of the existing topics continued to support the project. The final project theme was chosen as the foundation for the project – "Family businesses in Poland and USA (Florida) and their challenges in the context of COVID-19".

7. PROJECT IMPLEMENTATION

The aim of the COIL project was to conduct a research analysis of small business enterprises in Poland and the U.S. Students were organized into teams that integrated members from both universities. There were 50 students from FIU and 70 students from PUT. Each international team was made up of 5-6 students of which 2-3

were from each university; totaling 17 teams. Each team was responsible for analyzing research findings from both countries. The project was divided into four phases:

Phase One: Introduction Phase

This phase was vital for the success of the project. Students were introduced to each other via individual video presentations. In the video, they shared their expectations of the international collaboration and introduced themselves personally by sharing their hobbies and other personal information. The videos were a very good icebreaker activity as it placed students in a more relaxed environment, showing their informal side and making them more personable. The international teams were created randomly with only one rule, they must have an equal distribution of students from both universities. Once the teams had been created, they began meeting and working virtually. Each team was required to create an infographic which represented their work plan or workflow, as shown in figure 1 and figure 2. The infographics created during this phase of the project served as blueprints for the remaining collaboration of the global virtual teams. Towards the end of this phase, the students began a survey of small business owners in the U.S. (South Florida) and in Poland.

Phase Two

Phase two of the project consisted of formulating a research problem and hypotheses. In addition to the tasks being performed, the students learned how to overcome the challenges associated with global virtual teams. They analyzed which methods of communication they felt most comfortable with and work the best for them. The dynamics within the teams are strengthening. Students were able to overcome the time zone difference (6 hours) and language barrier. The primary language used between all students was English. None of the students from FIU spoke Polish, while many students from PUT spoke British English. Although there are some differences between the two dialects of English, they are similar enough to enable effective communication.

Phase Three

During phase three of the project, the students conducted both a qualitative and quantitative analysis of the results from the survey administered during phase one. Preparation of the final report as well as a Power Point presentation took place.

Phase Four

Students presented the Power Point presentation prepared in phase three. The presentation included the results and findings of their analysis. As part of the final

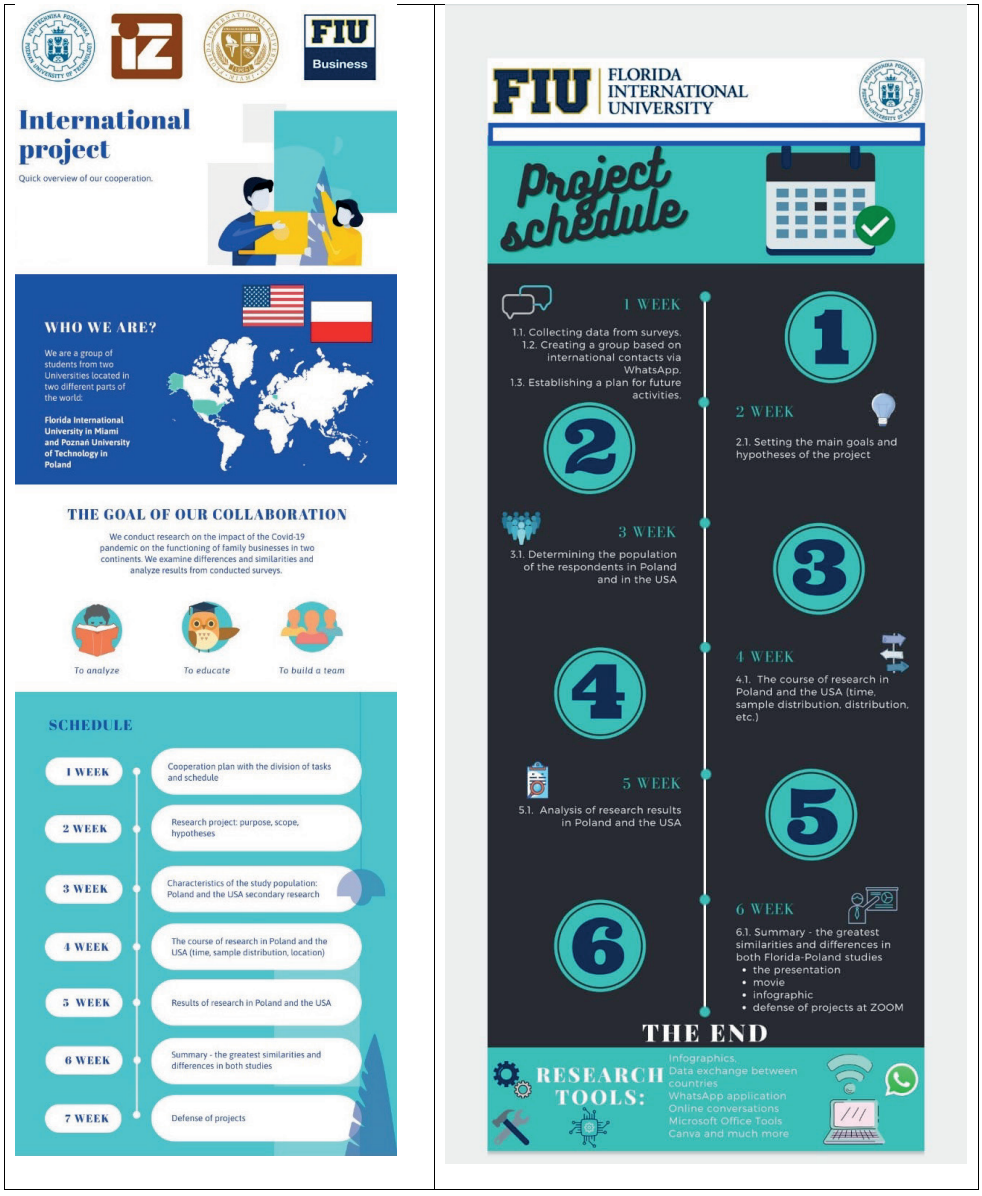

Fig. 1. Infographics created by selected team – 1

Fig. 2. Infographics created by selected team – 2

session, students presented via Zoom, with all students and faculty from both universities were present. The final session was especially difficult for the students to prepare because the global virtual teams needed to closely coordinate and work together to deliver their final project.

8. PROJECT EVALUATION

Sample

An evaluation of the pilot COIL project was conducted among students. The evaluation questionnaire was written in both English and Polish. The U.S. students were administered the English version while the Polish students were administered the version in Polish. Google Forms was used to create the instrument and distribute it to the students. It included seven questions whereby students were to choose from several answer choices for their response. These questions were as follows:

- Indicate your gender.
- Indicate your major.
- Indicate your year of study.
- Indicate your place to stay during COIL project.
- Evaluate how did work in an international team during the COIL project influence your motivation to work.
- Evaluate how did work in an international team during the COIL project influence your mood and satisfaction.
- Evaluate the results of your work in the international team.

A total of 79 students (N = 79) from both universities participated in the COIL project. Of these, 48 were from PUT and 31 from FIU.

Method of Analysis

Two types of analyses were conducted on the results of the evaluation. First, a general summary was performed to describe the results across all questions. The second analysis was performed on selected results to determine if there were any statistical differences between the students from FIU and PUT. To test for any statistical differences, the following hypothesis statements were formulated:

$$H_0: p_1 = p_2$$

$$H_1: p_1 \neq p_2$$

A z-test for proportions for two independent samples was conducted to test the hypothesis, where n_1 has been noted to indicate FIU and n_2 for PUT.

Results

An analysis of proportions shows both differences and similarities in responses between students and PUT. From the general summary of evaluation results in table 1, it was found that that more women participated from PUT compared to FIU, while overall gender ration was about a 2:1 in favor of men.

Table 1. Summary of Evaluation Results for COIL Project

Characteristics	FIU	PUT
Gender		
Female	0.61	0.71
Male	0.39	0.29
Major		
Marketing	0.65	0.00
Engineering Management	0.00	1.00
Finance	0.10	0.00
Business Administration	0.26	0.00
Year of study		
Junior	0.10	1.00
Senior	0.90	0.00
Place of stay during the COIL-project:		
With family in the city	0.39	0.10
With family outside the city	0.16	0.58
Alone in the city	0.29	0.17
Alone outside the city	0.06	0.00
Live with other students	0.10	0.15
Influence of working in international environment on your motivation to work:		
As usual	0.13	0.10
A little bit more than usual	0.13	0.17
Rather more than usual	0.10	0.10
More than usual	0.55	0.29
Definitely more than usual	0.10	0.44
Influence of working in international environment on your mood and satisfaction:		
As usual	0.10	0.31
A little bit better than usual	0.10	0.06
Rather better than usual	0.29	0.06
Better	0.42	0.15
Much better	0.10	0.42
Evaluate the results of working in international environment:		
Very Good	0.97	0.56
Good	0.03	0.27
Fair	0.00	0.17
Poor	0.00	0.00

Among all students, 53 were women, of which 34 were from PUT and 19 from FIU, and 26 men (14 from PUT and 12 from FIU). When asked to rate the results of the COIL project, 97% of FIU students rated it as very good while 56% of PUT students provided the same rating. 3% of FIU students and 27% of PUT students evaluated these results as good. Even though 17% of PUT students provided a rating of fair, no students from either university rated poor.

An area that showed vast differences between the students of FIU and PUT was the distribution of participants' living arrangements. Table 1 shows the distribution of those that lived locally with their families, lived with family outside of the city, lived alone within the city, lived alone outside of the city, and roomed with other students. Of those living with family in the city, there were 39% and 19% of FIU and PUT students respectively while 16% of FIU students and 58% of PUT students lived with family outside of the city. This is a stark difference between the two groups of students and possibly could be attributed to the design differences between the two cities. It seems that in Poznań, it is more common to live outside of the city, whereas in Miami, students are more likely to have their families residing within the city. Another notable difference between the two student groups is the living arrangement with family, regardless of whether they reside within or outside the city. Students at PUT typically live with family while attending the university. Only 32% live alone or with other students. In contrast, while just over half of FIU students live with their families, a notable 35% live alone. The distribution of living arrangements indicates many differences, which can be attributed to cultural factors or and geographical location. A z-test for proportions was performed to find statistical differences between several variables. The areas analyzed included the influence of international work on mood and motivation. Several analyses were performed to assess the influence of international work on motivation. Table 2 indicates that there were no statistical differences when comparing living arrangements by university.

When comparing the gender of the population, table 3 shows no significant difference. Additionally, gender was compared separately by university (tab. 4) and the results showed no statistical differences. Although no statistical differences were found between gender, places of stay, and the influence of international work on motivation, a significant proportion of students from both universities indicated that their motivation was either "more than usual" or "definitely more than usual".

The same comparisons that were made to assess the influence of international work on motivation were also conducted to evaluate its impact on mood. The results revealed significant differences in some variables. Notably, significant differences between FIU and PUT were observed in relation to place of stay, as shown in table 5. Additionally, table 7 shows significant differences between genders within each university. However, table 6 indicates no statistically significant differences when comparing genders of all students.

Table 2. Influence of working in international environment on your motivation according to the place of stay during the project

Influence of working in international environment on your motivation	Place of stay during the project											
	With family at the city				Alone at the city				With friends at the city			
	FIU	PUT	Z statistics	p-value	FIU	PUT	Z statistics	p-value	FIU	PUT	Z statistics	p-value
definitely more motivated to work	0.17	0.40	–2,16	0,0154	0.11	0.71	–5,21	0,00000009	0.00	0.43	–4,25	0,00001079
more motivated to work	0.33	0.40	–0,63	0,264	0.44	0.00	5,05	0,000000218	1.00	0.14	7,47	0,00000000
rather more motivated than usual	0.08	0.20	–1,45	0,0739	0.22	0.00	3,4	0,000337333	0.00	0.00	0	0,5
a little bit more motivated than usual	0.25	0.00	3,65	0,0001	0.00	0.29	–3,3	0,000477491	0.00	0.00	0	0,5
motivated as usual	0.17	0.00	2,96	0,0015	0.22	0.00	3,4	0,000337333	0.00	0.43	–4,25	0,00001079

Table 3. Influence of working in international environment on your motivation according to the gender

Influence of working in international environment on your motivation	FIU-PUT F	FIU-PUT M	Z statistics	p-value
definitely more motivated to work	0.3	0.27	0,28	0,3912401
more motivated to work	0.26	0.23	0,29	0,386173363
rather more motivated than usual	0.12	0.08	0,54	0,29431802
a little bit more motivated to work	0.16	0.19	–0,33	0,369320011
motivated as usual	0.16	0.23	–0,76	0,224816367

Table 4. Influence of working in international environment on your motivation according to university and gender

Influence of working in international environment on your motivation	FIU				PUT			
	F	M	Z statistics	p-value	F	M	Z statistics	p-value
definitely more motivated to work	0.11	0.08	0,39	0,39236231	0.38	0.43	–0,32	0,373670044
more motivated to work	0.58	0.50	0,44	0,331411662	0.06	0.00	0,94	0,174473243
rather more motivated than usual	0.16	0.00	1,46	0,072279047	0.09	0.14	–0,51	0,303441436
a little bit more motivated to work	0.11	0.17	–0,48	0,316026135	0.18	0.21	–0,24	0,404612646
motivated as usual	0.05	0.25	–1,63	0,051904944	0.29	0.21	0,57	0,284444356

Table 5. Influence of working in international environment on your mood and satisfaction according to the place of stay

Influence of working in international environment on your mood and satisfaction:	Place of stay during the project											
	with family in the city				alone in the city				with friends			
	FIU	PUT	Z statistics	p-value	FIU	PUT	Z statistics	p-value	FIU	PUT	Z statistics	p-value
much better	0.00	0.57	–5,2	0,0000001	0.00	0.29	–3,3	0,0004774906	0.00	0.25	–3,02	0,0012517322
better	0.33	0.14	2,01	0,0222850	0.33	0.00	4,27	0,000009	1.00	0.13	7,56	0,0000000
rather better than usual	0.25	0.00	3,65	0,0001323	0.44	0.14	2,98	0,001456	0.00	0.00	0	0,500000
a little bit better than usual	0.25	0.14	1,23	0,108560	0.00	0.29	–3,3	0,000477	0.00	0.13	–2,09	0,018228
as usual	0.17	0.14	0,36	0,358349	0.22	0.29	–0,69	0,244960	0.00	0.50	–4,72	0,000001

Table 6. Influence of working in international environment on your mood and satisfaction according to gender

Influence of working in international environment on your mood and satisfaction:	FIU-PUT F	FIU-PUT M	Z statistics	p-value
much better	0,28	0,12	1,59	0,055423063
better	0,23	0,15	0,83	0,203370856
rather better than usual	0,09	0,27	–1,27	0,101683361
a little bit better than usual	0,04	0,19	–2,2	0,014044251
as usual	0,36	0,27	0,8	0,212099442

Table 7. Influence of working in international environment on your mood and satisfaction according to university and gender

Influence of working in international environment on your mood and satisfaction:	FIU				PUT			
	F	M	Z statistics	p-value	F	M	Z statistics	p-value
much better than usual	0.11	0.00	1,19	0,117078767	0.38	0.21	1,14	0,127529481
better than usual	0.53	0.25	1,54	0,062058069	0.06	0.07	–0,13	0,448405327
rather better than usual	0.21	0.42	–1,25	0,105020128	0.03	0.14	–1,44	0,075571061
a little bit better than usual	0.05	0.17	–1,1	0,135144919	0.03	0.21	–2,06	0,019686093
as usual	0.11	0.17	–0,48	0,316026135	0.50	0.36	0,88	0,188160346

9. CONCLUSION AND DISCUSSION

The virtual international collaboration between students from two different countries is a step towards developing further interest in international business. Students not only obtained knowledge from the project, but also were able to interact with

their peers in another country, the way they live and function. Technology enabled a virtual environment for a very intense and fruitful collaboration. Overall, students were satisfied with the results of the project as well as with the dynamics of the collaboration. Many lessons were learnt from the experience by both, students and faculty. COIL allowed students the ability to learn and explore the dynamics of working on a global virtual team. Students have a better understanding and value the opinions and perspectives of others from cultures different from their own. Building a strong global citizenship should be a priority for any business school. For business schools to adequately train students for today's business environment, we believe there must be international opportunities for faculty and students. Nowadays, technology has blurred and nearly eliminated borders; allowing organizations to operate at a global level.

The results of this study confirm the effectiveness of COIL in improving students' intercultural communication, motivation and collaboration skills. The evaluation criteria provided a standardized framework for analyzing the impact of COIL, emphasizing both strengths and areas for improvement.

Students reported significant increase in their ability to adapt to cultural differences and work effectively in global virtual teams. As many as 97% of FIU students and 56% of PUT students rated the outcomes of their projects as 'very good', demonstrating COIL's role in encouraging meaningful engagement between diverse groups. However, differences in satisfaction rates emphasize the need to address contextual challenges such as different levels of technological access and cultural expectations.

The comparative analysis between FIU and PUT participants revealed important perception. FIU students showed higher levels of satisfaction and engagement, which could be attributed to their greater familiarity with virtual collaboration tools. Conversely, PUT students highlighted the challenges of managing time zones and language issues, underlining the importance of additional support mechanisms for international virtual collaboration.

These findings contribute to the research on virtual international education and highlight COIL as a possible alternative to traditional study abroad programs, particularly in contexts where travel is not feasible. Future research should explore the scalability of COIL among institutions and disciplines, as well as its long-term impact on students' career pathways.

Implications for Research and Practice

This study provides insight and a possible alternative to traditional international programs, such as study abroad. The COVID-19 pandemic has forced more thoughtful innovation to achieve the same goals. Universities that use online technology can leverage it to enhance their programs, particularly in the international business space. COIL can also be an option for schools looking to internationalize

their curriculum or provide more global content. FIU is fortunate to have a CIBER. However, for universities that do not have access to a CIBER, there are a number of ways to implement COIL or its variation. Even though some course revision is necessary to incorporate COIL, it can be done by simply revising an existing group project.

Limitations and Future Research

Although there has been a significant contribution and a new perspective provided to international business education, there is still much more to be done going forward. There are some limitations associated with this study. First, these are the only two schools that have been studied. In addition, FIU does not have the typical demographic make-up of the average university. The university has a large Hispanic population and predominantly serves the local South Florida community. Many students at FIU are first generation, meaning they are the first in their families to obtain a degree beyond high school. Second, additional studies of COIL projects should be conducted as more of these programs are being implemented. This will help determine if any patterns emerge and can be used for continuous improvement and development of best practices associated with these collaborations.

A next step in the research could be to analyze if this type of collaboration can be developed further beyond the classroom. This could involve exploring the integration of faculty development activities or extending the model to executive education programs. Additionally, further studies could be conducted, particularly as more universities partner together for COIL projects. Research could explore the dynamics of these multi-university collaborations. There are number of opportunities for further research in this area that can be explored. Additional research will allow the academic community to build on this model, innovate and expand it even further.

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UNIWERSYTETY PRZYSZŁOŚCI – WIRTUALNA PRZEPRAWA PRZEZ OCEAN

Streszczenie

W niniejszym artykule oceniono skuteczność programu Collaborative International Online Learning (COIL) w międzykulturowych programach nauczania biznesu, w których studenci współpracują w ramach wielonarodowych i wielokulturowych zespołów bez konieczności podróżowania. COIL oferuje innowacyjną alternatywę dla tradycyjnych programów studiów za granicą, zapewniając globalne doświadczenie edukacyjne za pośrednictwem platform wirtualnych. Takie podejście zwiększa internacjonalizację edukacji biznesowej i wyposaża studentów w kompetencje potrzebne do radzenia sobie z globalnymi wyzwaniami, wspierając szersze zrozumienie różnych perspektyw kulturowych. Badanie koncentruje się na współpracy między studentami biznesu z uczelni amerykańskiej

i polskiego uniwersytetu podczas pandemii COVID-19. W pracy zanalizowano procesy, narzędzia i wyniki tej globalnej współpracy online, pokazując, w jaki sposób COIL ułatwia znaczące interakcje i wzmacnia postrzeganie przez studentów różnych punktów widzenia. W artykule omówiono również wyzwania napotkane podczas wdrażania COIL, takie jak bariery technologiczne i różnice w stylach komunikacji, oraz sposób, w jaki poradzono sobie z tymi przeszkodami, aby zapewnić udaną współpracę. Wyniki badań podkreślają rolę COIL we wzbogacaniu doświadczeń edukacyjnych, opracowywaniu skutecznych strategii globalnej współpracy i przygotowywaniu studentów do złożoności pracy w wirtualnych zespołach międzynarodowych.

Słowa kluczowe: kształcenie na odległość, badania marketingowe, jakość edukacji, COIL, zespoły międzynarodowe