COIL Method in Economic Higher Education: The Stakeholders' Perspective

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Abstract: COIL (Collaborative Online International Learning) is an innovative teaching method that allows students to experience international cooperation and develop intercultural skills using digital technologies. This online teaching method became popular recently based on the experience gained by higher education institutions during the COVID-19 pandemic. COIL is an effective and convenient teaching method that provides students with the experience of „internationalisation at home." The COIL engages students, teachers, and business partners. As those groups have different educational needs and expectations, the question arises as to what extent this teaching method can address those needs. Therefore, the main objective of this paper is to identify the main benefits and limitations of the COIL method in economic higher education based on the empirical survey results. The survey was conducted after the successful COIL implementation in 2023/2024 in several courses at the University of Economics in Katowice, Poland. The COIL method was applied in the form of three different models and was organised in cooperation with partners from several European universities. In particular, the COIL method was applied within a course devoted to Digitalisation and Sustainability, aiming at developing projects on business plans for start-ups using innovative technologies to enhance sustainable development. The paper presents the COIL concept, course objectives, and learning outcomes, as well as an assessment of the COIL method from the perspectives of students, teachers, and business experts. The main findings suggest that all students appreciate the advantages of COIL: the possibility to gain international experience, improve communication and intercultural skills, and learn the basics of project management. They also signalled some challenges related to international teamwork. However, teachers, in general, are satisfied with the quality of outcomes of students' cooperation, although applying the COIL method requires lots of administrative work and developing new skills. Similarly, business partners highly assessed the benefits of the COIL method for students in terms of their future professional careers.

Keywords: COIL methodology, Innovative teaching methods, Project-oriented education, Economic studies

1. Introduction

The technological advancements observed during the last decades have changed all aspects of human life, including teaching methods. The new generations' needs in graduate programs have required universities to seek new ways of acquiring knowledge and skills to face the new digital age. As a result, during the last two decades, innovative teaching methods aimed at engaging students have been broadly discussed, and this interest has been boosted after the COVID-19 pandemic. Those methods include flipped learning, case studies, problem-based learning, storytelling, gamification, collaborative learning, experiential learning, just-in-time learning, social media, and self-learning.

COIL (Collaborative Online International Learning) is an innovative teaching method offering students the possibility to experience international cooperation and develop intercultural skills by using digital technologies. This online teaching method became popular recently, based on the experience gained by higher education institutions during the COVID-19 pandemic. COIL is an effective and convenient teaching method used to provide students with the experience of „internationalisation at home".

The COIL engages students, teachers, and business partners with different educational needs and expectations. Thus, the question arises as to what extent this teaching method can address those needs. Therefore, the main objective of this paper is to identify the main benefits and limitations of the COIL method in economic higher education based on the empirical survey results.

The survey was conducted after the successful COIL implementation in 2023/2024 in several courses at the University of Economics in Katowice, Poland. The COIL method was applied in the form of three different models and was organised in cooperation with partners from several European universities. In particular, the COIL method was applied within a course devoted to Digitalisation and Sustainability, aiming at developing projects on business plans for start-ups using innovative technologies to enhance sustainable development.

The paper is structured as follows: the second section presents the COIL concept and assumptions for its implementation; the third section focuses on research methodology; and the next section presents the stakeholders' assessment of the COIL method. The paper ends with concluding remarks.

2. COIL Method in Economic Higher Education- the Concept and Implementation

2.1 The Characteristic of the COIL Method in Economic Higher Education– Theoretical Framework

The evolution of the COIL method commenced at the beginning of the 21st century. The growing interest in implementing this method results from constraints on physical mobility and the development of virtual exchanges and networks (Rubin, 2017; Rubin and Guth, 2022; Hacket et al., 2023). COIL represents a relatively new method with ongoing literature and research development. Most of the existing literature addresses rather the broad concept of "virtual exchange" or "international virtual exchange", often through case studies offering descriptive analyses of implementing and leading exchange. The literature review reveals that international virtual exchange has primarily served language learning, peacebuilding, and developing international cultural competencies. Most exchanges involve a one-to-one relationship between two institutions rather than leveraging a network of partners (Woodman and Kastler, 2020). The studies directly focusing on the COIL method present its model, emphasise that the method creates the space for shared course design and implementation, enhances learning outcomes and promotes cultural awareness through interactions with international counterparts (Vahed and Rodriquez, 2020). They also stress the role of administrative support in enhancing the sustainability of the COIL programs (Guth and Rubin, 2015; Rubin, 2016).

Several characteristics make COIL unique compared to other initiatives. Firstly, it fosters peer-to-peer experimental learning focusing on teamwork skills and facilitates developing digital skills by learning how to work remotely and manage digital tools professionally. The term "COIL" itself is transparent and explicit in describing the practice and benefits of collaborative learning for both educators and students (Rubin, 2017). In practical terms, it involves two or more educators from different geographic locations collaborating online to design a shared syllabus for their students. This syllabus includes joint online group assignments with co-created learning outcomes. The method focuses on subject-specific knowledge and intercultural competence development, making it adaptable to various disciplines.

Typically, a COIL course involves the creation of multicultural student teams comprising individuals from each participating institution. During this process, educators intentionally design assignments with intercultural learning in mind and facilitate and promote this collaborative learning throughout the COIL course. The primary goal of this collaboration is to broaden students' understanding of course content and to help them develop intercultural competencies. In doing so, COIL offers students an authentic international learning experience at their home institution rather than at an institution abroad (Woodmann and Kastler, 2020).

It is important to emphasise that the COIL implementation is not a goal. COIL should be treated as a tool for achieving learning outcomes and providing students with the necessary knowledge, skills, and mindset. As a complex academic endeavour, it requires careful consideration and planning before implementation. Using a COIL format changes teaching methods and requires technological integration (Alvarez and Steiner, 2019).

Only a few studies have examined implementing the COIL method in economic higher education. For instance, Marilú Marcillo-Gómez and Desilus (2016) examined students in International Business Courses at two universities: in the United States and Mexico City. The topics referred to intercultural communication, culture structure, cultural values, guidelines for behaviour, and cultural influences on communication contexts. Mestre-Segarra and Ruiz-Garrido (2022) explored students' reflections and the experience of 23 learners from different nationalities enrolled in a business-related master's degree. Similarly to previous research, they analysed the application of language and content, along with cross-disciplinary skills and cultural awareness. Kjølseth and Siddiq (2023) investigated how students perceive and describe group work in an online course in international business. O'Dowd (2019) explored different virtual team models, referring to business-focused competencies needed in professional settings, albeit with a focus on foreign language skills. Additionally, other studies analysed how the COIL method may be used for teaching entrepreneurship (Katre, 2020; Romero-Rodriques et al., 2022; Elenurm, 2022). To the best of the authors' knowledge, no research has referred to digitalisation and sustainability so far.

2.2 The COIL Implementation in the "Digital Transformation and Sustainability" Project

The main objective of the COIL project was to present and discuss the convergence of digitalisation and sustainability, focusing on the main opportunities and challenges. The course introduced the problematics of digitalisation and its impact on business and individuals' daily lives. The main course objectives refer to the following questions:

- How do emerging technologies transform industries and business models?

- How can digitalisation support the socio-ecological transformation of the economy?
- How might new business models built on digital technologies positively impact sustainability?
- How do these questions relate to regional and international business environments?

As presented in Table 1, the international teams were diversified, including first-year undergraduate students in bachelor programs in International Management, Economics, and Ethics (UCO Angers) and bachelor and master students in Finance and Accounting programmes (UE Katowice). The total number of fixed meetings was 8, but the students were also collaborating in subgroups between meetings.

Table 1: The COIL project metrics

The metric	**Description**
Title	Digital Transformation and Sustainability
Institutions	Universite Catholique De L'Quest, Angers, France (UCO Angers) University of Economics in Katowice, Poland (UEKAT)
Number of students	40, including: • 29 UCO Angers students • 11 UEKAT students
Model of realisation	additional elective course created for COIL purposes
Language	English
Type of module	fully online
Duration	6 weeks (from March 10 to April 21, 2023)
Number of general meetings/ duration	4 meetings/ 15 hours
Number of students' interim meetings/ duration	at least 4 meetings/ according to the students' needs

Source: Own elaboration

The COIL implementations included three stages: a preparatory phase, a course launch, and course facilitation, each involving specific activities as outlined in Figure 1.

During the preparatory phase, the COIL expert conducted COIL Design Workshops for university teachers. Based on the knowledge shared during those workshops, the teachers collaborated on course design and curriculum.

The project was launched in the summer semester of the academic year 2022/2023. The COIL method was applied in the form of three different models and was organised in cooperation with partners from several European universities. Specifically, the COIL method was applied within a course focused on Digitalisation and Sustainability. From March 10 to April 21, 2023, the course included four general meetings for participants. The first meeting (4 hours) introduced the project and was focused on team building. The second meeting (3 hours) facilitated monitoring of students' progress and included a mid-evaluation. Students presented their projects and shared their experiences during the last two meetings (2 meetings, 4 hours each). Additionally, four interim meetings for individual groups were scheduled to facilitate project work and consultations with teachers. Each group could choose the most suitable time and software solution to organise their project work. They also had the opportunity to ask for advice and discuss their outcomes with Polish and French teachers. The students were required to submit brief reports on their interim meetings as part of their assessment. The last stage, comprising COIL facilitation, is described in the next section.

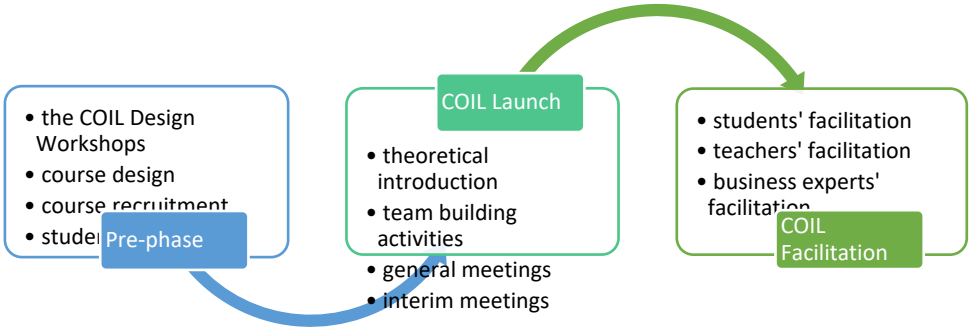


Figure 1: The stages of the COIL project. Source: Own elaboration

3. COIL Assessment - Research Methodology

As part of the teaching quality assessment and improvement process, the COIL project's stakeholders - students, teachers, and business experts - were asked about their opinions on the various aspects of the COIL project (Figure 2).

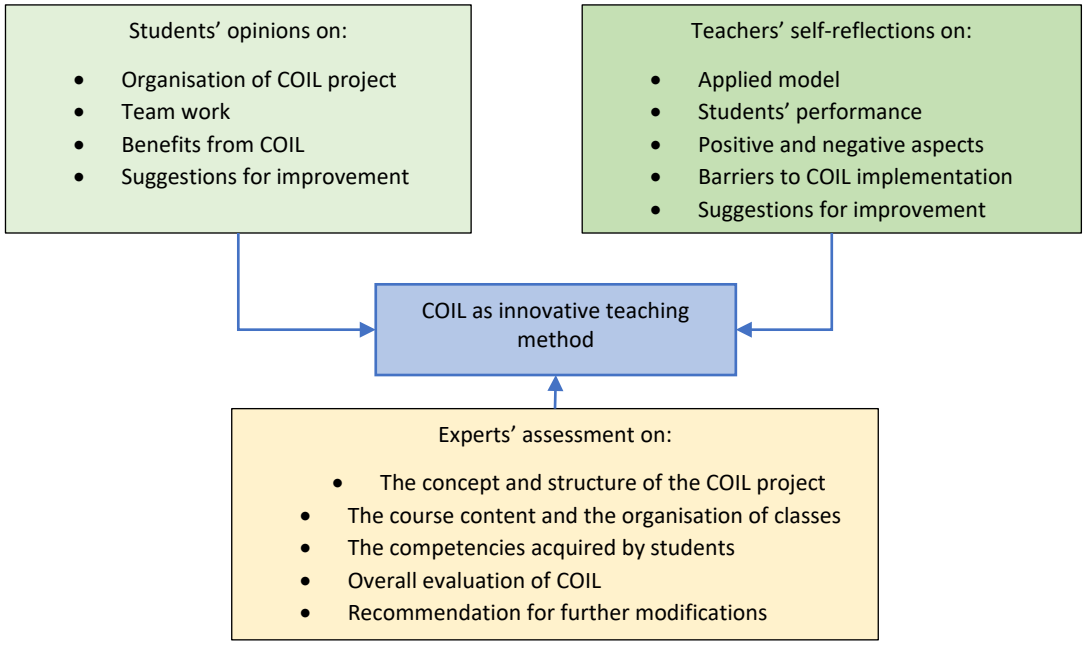


Figure 2: The scope of COIL project's evaluation. Source: Own elaboration

The students' opinions on the COIL project were collected through a closed and open-ended survey questionnaire. For closed questions, students were asked to select their answers using a 5-point Likert scale, where 1 means "definitely not" and 5 means "definitely yes". Additionally, the open-ended questions allowed students to provide their comments and suggestions. The survey was distributed to all 40 students participating in the COIL project, and 24 students (both from UEKAT and UCO Angers) responded, resulting in a response rate of 60%. Similarly, teachers shared their opinions through the questionnaire, while the business expert prepared reports using an assessment form. Three opinions from teachers and three expert assessments were collected in this manner.

4. The stakeholders' assessment of COIL implementation – the research results

4.1 Students' Evaluation

The first part of a survey questionnaire addressed to students consisted of 11 closed questions related to the organisation of the COIL project. Table 2 presents the mean results for these answers.

Table 2: The students' opinions on the organisation of the COIL project

No	The organisation of the COIL project	Mean
A1	Were the goals of COIL clearly explained?	3,88
A2	Do you find the team-building activities successful?	3,29
A3	Do you find icebreaking activities successful?	3,42
A4	Are you satisfied with the digital platform used during the virtual meetings?	4,21
A5	Do you find the theoretical introduction sufficient to run the project tasks?	3,25
A6	Do you find the information about the project task sufficient?	3,92
A7	Do you find the information on evaluation criteria sufficient?	3,83
A8	Was the number of virtual meetings sufficient?	4,00
A9	Do you feel the workload on the project was adequate for the reward?	3,52

No	The organisation of the COIL project	Mean
A10	Do you find the project task complicated?	3,33
A11	Do you find the project task time-consuming?	3,58
	Overall assessment	**3,65**

Source: Own elaboration

Students assessed positively all aspects of the organisation of the COIL project with a final score of 3,65. Particularly, the digital platform used during virtual meetings received the highest score of 4,21 (A4). While students generally found the number of virtual meetings sufficient, some suggested having more frequent but shorter joint meetings to better monitor progress on the final presentation. However, the theoretical introduction and team-building activities received lower scores, ranging from 3,25 to 3,29 (see Figure 3 for details).

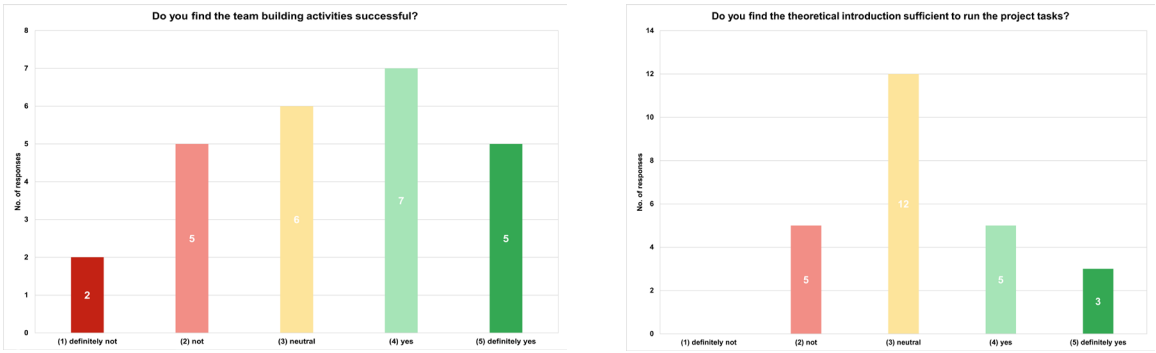


Figure 3: Answers to questions A2 (panel B) and A5 (panel B). Source: Own elaboration

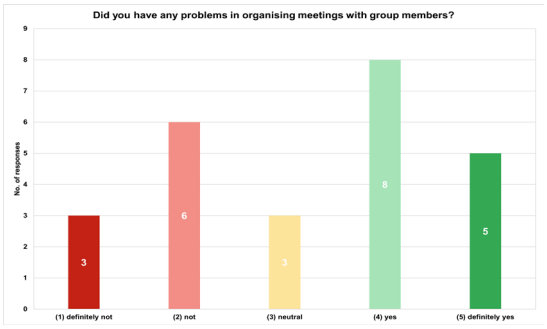
The second aspect of the students' assessment was related to teamwork, which was evaluated through four closed questions. The mean results for the answers to these questions are presented in Table 3.

Table 3: The students' opinions on the teamwork

No	The teamwork in the COIL project	Mean
B1	Did you have any problems in organising meetings with team members?	3,29
B2	Did you find the workload of the project team members balanced?	3,08
B3	Did you have any communication problems with your team?	2,83
B4	Did you enjoy the collaboration with your team?	3,75
	Overall assessment	**3,23**

Source: Own elaboration

Students also positively assessed the teamwork-related aspects of the COIL project. Overall, students enjoyed the collaboration (3,75) and felt that the workload was balanced within their teams (3,08). However, some students mentioned difficulties in organising meetings with team members. Altogether, 13 out of 24 students selected answers 4- "yes" and 5 – "definitely yes" for this question (B1). However, they indicated lower importance of communication problems with their teams: only 9 students selected answers 4 "yes" and 5 "definitely yes" for this question (B3, see figure 4 for details).



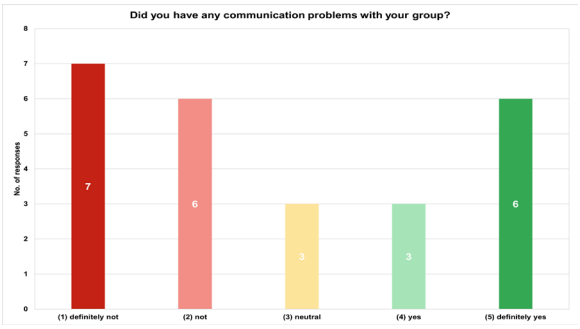


Figure 4: Answers to questions B1 (panel B) and B3 (panel B). Source: Own elaboration

The third part of the survey questionnaire focused on the educational and internationalization benefits of the COIL project. The answers to the 9 closed questions included in this part are presented in Table 4.

Table 4: The students' opinions on the benefits of the COIL project

No	The benefits of the COIL project	Mean
C1	Do you find COIL as valuable teaching method?	3,79
C2	Did COIL help you develop your competencies in international teamwork?	3,62
C3	Did COIL help you to improve language skills?	3,75
C4	After the COIL experience, do you feel better prepared for online project work?	3,75
C5	Would you be interested in taking part in the COIL project once again?	3,08
C6	Overall, do you find project important for developing international skills?	3,92
C7	Overall, do you enjoy taking part in the COIL project?	3,46
C8	Have you been interested in being an exchange student and studying a semester abroad (before COIL experience)?	4,00
C9	Are you interested in being an exchange student and studying a semester abroad (after COIL experience)?	3,96
Overall assessment		**3,70**

Source: Own elaboration

The assessment of the benefits of the COIL project received the highest score of 3,70, indicating that students generally valued their participation in the project. However, question (C5) concerning future participation in the COIL project received the lowest score of 3,08, with only 9 students selecting answers indicating a willingness to participate again (see Figure 5 for details). Nevertheless, students appreciated the COIL method as a way to develop international skills (3,92), improve language skills (3,75), be prepared for online project work (3,75) and gain competencies in international teamwork (3,63). Additionally, the majority of students (17) agreed that COIL is a valuable teaching method. However, only 11 students stated that they enjoyed taking part in the COIL project (C7, see Figure 5 for details). Interestingly, the COIL experience slightly reduced interest in being an exchange student and studying abroad (compare results for questions C8 and C9).

In the open questions, students provided positive comments on the benefits of the COIL project, such as gaining knowledge on sustainability, developing skills related to teamwork, widening experience with international communication and group project management, discovering new ways of working and communicating, knowing better other cultures, establishing international relationships, and practising social skills. Overall, students' opinions show their satisfaction with the COIL project experience.

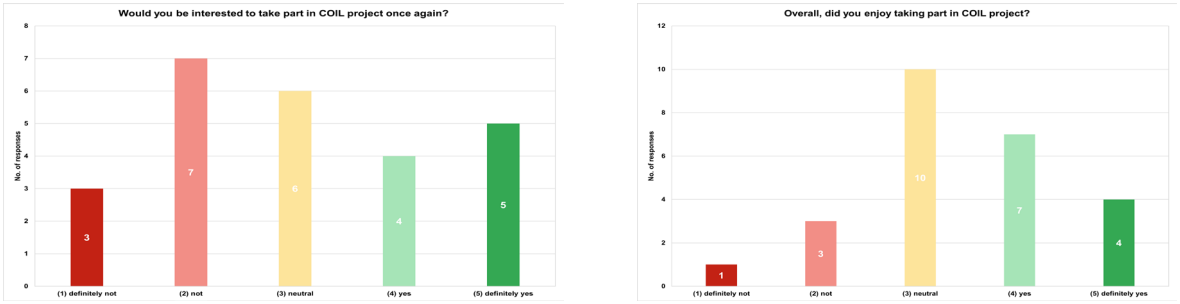


Figure 5: Answers to questions C5 (panel A) and C7 (panel B). Source: Own elaboration

4.2 Teachers' Evaluation

When asked to reflect on this innovative teaching method's positive and negative aspects, teachers evaluated the applied model, students' performance, organisation, and barriers to implementation.

The applied model was based on the additional elective course created for COIL purposes. Such a model offers flexibility in scheduling joint meetings. It can also be used for students from various study programs who may be enrolled in elective courses. However, this model requires many additional formalities for teachers, students and university authorities:

- the necessity of obtaining the rector's and dean's approval to launch an additional elective course,
- the requirement to create particular additional exam protocols for students enrolled in this course,
- the organisation of student registrations for the additional elective course (risk of low student interest in the extra elective course and underrepresentation of students from one partner university),
- upon completion of the subject, students must submit their application to the Dean for the accreditation of ECTS points received from the COIL project.

Teachers positively assessed students' performance - the high quality of their final presentations due to international cooperation and the exchange of diverse experiences and perspectives, despite encountering difficulties in organising teamwork. In teachers' opinion, the COIL project offers an invaluable opportunity for practising teamwork skills within the international environment. On the other hand, teachers recognised the importance of difficulties in teamwork organisation, notably in finding a suitable time frame for all team members. This problem was enhanced by the disproportionate representation of French students within teams, which led to the marginalisation of Polish students' scheduling preferences.

Finally, the teachers admitted that organising the COIL project requires considerable time, involving multiple coordination meetings with teachers from the partner universities, which creates an additional workload. However, this is balanced by the satisfaction derived from witnessing the positive results of students' work. Additionally, teachers confirmed that online activities serve as both disruptors and facilitators of the process. Despite occasional difficulties with managing the timetable, all teams successfully prepared for the final presentation.

According to teachers, the significant barriers to the successful implementation of the COIL projects can be classified into organisational, content-related and technical barriers (Table 5).

Table 5: Barriers to the COIL project

The barrier type	Characteristics
organisational	the limited administrative support to the organisation of international teamwork difficulties in managing communication in international teams limited possibility to find partners willing to engage in joint projects for part-time students (Sunday-Saturday teaching days) limited number of teachers willing to participate in the COIL projects due to the additional organisation workload various regulations and organisational requirements at the partner universities
content-related	lack of balance in the level of knowledge and skills among students from different universities differences in study programs and subjects at the partner universities

The barrier type	Characteristics
technical	difficulties in accessing online platforms, including indicated information sources and study materials

Source: Own elaboration

Teachers also formulated several suggestions for future COIL project organisation at the UEKAT by addressing the existing regulations and the implemented solutions. Ahead of the project launch, all students should undergo training if electronic platforms beyond those typically used within the university are employed. The quality of COIL project implementation could be improved by engaging the universities' planning department in the preparatory phase. This would entail aligning the schedule with students' existing lectures and classes, ensuring their optimal participation in the COIL project. The number of students enrolled in the COIL project could be enlarged by assigning more European Credit Transfer and Accumulation System (ECTS) points compared to other elective courses conducted in Polish. The procedure of granting ECTS points for the COIL project in the form of an elective course should be automatised.

4.3 Business Experts' Evaluation

The external business experts, who also have experience in lectures and workshops for students, were invited to assess the courses based on the COIL documentation (course description cards, study materials for students, and exemplary students' presentations). They were asked to assess the COIL projects with regard to the concept and structure of the project, its implementation, the competencies acquired by students, and the overall evaluation of COIL as an innovative teaching method. The experts were asked to answer the questions using a 5-point Likert scale where 1 means "definitely not" and 5 means "definitely yes".

Table 6 presents the mean results for the answers related to the COIL project's concept and structure.

Table 6: Experts' opinions on the concept and structure of the COIL project

No	The concept and structure of the COIL project	Mean
A1	The goals and content of COIL were properly defined	5,00
A2	The communication process was planned correctly	4,67
A3	The principles of cooperation among students were properly planned	4,67
A4	The tasks designated for students to develop were harmonised with the course objectives	5,00
A5	The assessment criteria for student projects were appropriately planned	5,00
Overall assessment		**4,87**

Source: Own elaboration

Regarding the concept and structure of the COIL project, the experts highly assessed the design of the project (A1) and the clear communication from teachers regarding tasks (A4), principles of cooperation (A3), and assessment criteria for students (A5). The overall assessment of this COIL project aspect was the highest, with a score of 4,87.

The mean results of the answers related to the COIL project implementation are presented in Table 7.

Table 7: Experts' opinions on the implementation of the COIL project

No	The implementation of the COIL project	Mean
B1	The software and other IT tools were properly selected for implementing COIL	5,00
B2	The materials for students were available online before the planned activities and tasks	4,33
B3	Online activities related to integration and building international teams were planned	5,00
B4	Students had the opportunity to choose the project topics	4,33
B5	Students had the opportunity to choose communication tools	5,00
Overall assessment		**4,73**

Source: Own elaboration

Regarding project implementation, the experts appreciated the students' ability to choose project topics (B4) and the communication tools for teamwork (B5). They acknowledged the possibility of using various teaching methods and teamwork tools. They also valued the effectiveness of the icebreaking and team-building activities during the first joint meeting (B3). They emphasised the importance of selecting proper software and other IT tools for online meetings, communication between meetings and resource platforms (B1).

Six dimensions further assessed the students' competencies gained by participating in the COIL project. The mean results are presented in Table 8.

Table 8: Experts' opinions on the students' competencies

No	The students' competencies	Mean
C1	COIL enables understanding of cultural differences and increases tolerance	5,0
C2	COIL enables the development of participants' language skills	5,0
C3	COIL facilitates the development of teamwork skills	4,75
C4	COIL enables understanding of the international context of discussed issues	4,75
C5	COIL enables the practical application of acquired knowledge and skills	4,00
C6	COIL increases students' chances of finding employment	4,33
Overall assessment		**4,64**

Source: Own elaboration

In the context of the student's competencies, the experts appreciated that COIL helps students to:

- understand cultural differences,
- increase tolerance, integrate and build relationships,
- develop their English skills and teamwork skills,
- apply critical thinking, searching for and selecting sources of information,
- develop their independence and responsibility for organising teamwork activities,
- understand the international context of discussed issues,
- gain digital skills by using IT tools for online teamwork and communication,
- apply the acquired knowledge and skills in practice,
- increase their chances of finding an attractive job.

Additionally, the experts confirmed the importance of topics covered by the COIL project as the nexus between sustainability and digital transformation is very up-to-date and focused on real-life business models and technological solutions.

They also provided recommendations for improving COIL in the future. Experts proposed planning more time during classes for students' free expression. They suggested adding a brief evaluation session during the final meeting, which may provide an opportunity for students to analyse their actions, recognise their impact on the team's work organisation, and take responsibility for the course of this work. Discussing challenges and actions taken by students to overcome them from a broader perspective could be a catalyst for interesting conclusions and the development of competencies useful in students' future professional careers. The experts also recommended additional topics that could be included in the COIL projects, such as technology transfer or sources of funds for sustainable projects.

5. Discussion and Conclusions

The main findings of our case study suggest that all students appreciate the advantages of COIL, such as the possibility to gain international experience, improve communication and intercultural skills, and learn the basics of project management. Similar to Katre's (2020) research the results show that collaborating in cross-cultural teams, supported by appropriate technologies for effective synchronous and asynchronous communications, can equip students to develop a deep understanding of their own and other people's cultures. This aligns with the results of Vahed and Rodriguez (2020), who discovered that COIL positively influenced intercultural awareness and stimulated students to be globally engaged.

However, students also signalled some challenges related to work organisation within international teams. Teachers, in general, are satisfied with the quality of students' cooperation outcomes, although the application

of the COIL method requires lots of administrative work and the development of new skills related to this innovative method. Similarly, business partners highly assessed the benefits of the COIL method for students in terms of their future professional careers and the skills required by future employers. The relatively lower scores given by students compared to the assessment by experts may stem from the different perspectives and time horizons. Experts, as external stakeholders, focused more on the COIL method as a tool for developing important skills related to international cooperation, communication and teamwork organisation (long-term perspective). In contrast, students, as internal stakeholders activiely participating in the COIL project, were more focused on the immediate process of using the COIL method for this particular course and working within this specific team (short-term perspective).

When designing future COILs, teachers should allocate more time to team-building activities and theoretical presentations on the project's topic. They should also pay closer attention to how team member meetings are planned, organized, and supervised. Alvarez and Steiner (2019) stressed the importance of structuring and preparing the course. Stronger administrative support could facilitate the teachers' increased engagement. Previous research also pointed out this postulate (Marcillo-Gomez and Defilus, 2016; Rubin, 2017).

Making attendance in the COIL courses more attractive for students requires planning them as electives for more credits than standard ones. Marcillo-Gomez and Defilus (2016) shared the same recommendation based on their research.

Our results contribute to previous studies examining the COIL method as a new pedagogical technique. Most of them give little attention to the practical components of designing and implementing COIL projects. Although the existing practitioner-based resources share tips and insights for designing projects, they do not provide empirical evidence to support program design decisions in economic higher education. Future research should focus on specific elements within the COIL framework to determine what could lead to greater student learning outcomes.

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