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Intercultural learning in the course of Sales Management

Aprendizaje intercultural en la asignatura dirección de ventas

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ABSTRACT

This article analyzes an intercultural collaboration project between students from Tecnológico de Monterrey (Mexico) and Universidad CEU Cardenal Herrera (Spain), aimed at fostering interaction, teamwork, and the development of intercultural competencies. Through synchronous and asynchronous activities, the initiative's impact on learning and student engagement was evaluated, identifying differences in familiarity with collaborative dynamics and levels of

commitment. The results showed high participation and engagement in both groups, but with variations in the quality and consistency of performance. UCHCEU students excelled in asynchronous activities, such as the Icebreaker and Final Reflection, while TEC students faced challenges in maintaining consistent participation. Digital tools and synchronous sessions helped overcome geographical and cultural barriers but revealed the need for better initial orientation and more effective communication strategies. Incentives like digital badges motivated some students, but their impact was limited, suggesting the need for more tiered benefits. Both groups showed improvements across the dimensions of cultural intelligence, with UCHCEU students achieving greater progress in cultural adjustment and self-awareness. The lessons learned highlight the importance of intercultural preparation, continuous monitoring, and communication strategies to strengthen future international collaborations in an interconnected world.

Keywords: intercultural; learning; competencies; collaborative; COIL; global classroom

RESUMEN

Este artículo analiza un proyecto de colaboración intercultural entre estudiantes del Tecnológico de Monterrey (México) y la Universidad CEU Cardenal Herrera (España), cuyo objetivo fue fomentar la interacción, el trabajo en equipo y el desarrollo de competencias interculturales. Mediante actividades sincrónicas y asincrónicas, se evaluó el impacto de la iniciativa en el aprendizaje y la participación estudiantil. Los resultados mostraron alta participación y compromiso en ambos grupos, pero con variaciones en la calidad y consistencia del desempeño. Los estudiantes de la UCHCEU destacaron en actividades asincrónicas, como el Rompehielos y la Reflexión Final, mientras que los del TEC enfrentaron dificultades para mantener una participación constante. Las herramientas digitales y las sesiones sincrónicas ayudaron a superar barreras geográficas y culturales. Los incentivos, como insignias digitales, motivaron a algunos estudiantes, pero su impacto fue limitado, sugiriendo la necesidad de beneficios más escalonados. Ambos grupos mostraron mejoras en las dimensiones de la inteligencia cultural, con mayor avance en ajuste cultural y autoconciencia en los estudiantes de UCHCEU. Las lecciones aprendidas destacan la importancia de la preparación intercultural, el seguimiento continuo y estrategias de comunicación para fortalecer futuras colaboraciones internacionales en un mundo interconectado.

Palabras clave: intercultural, learning, competencies, collaborative, COIL, global classroom

INTRODUCTION

In the context of the current globalization process, the labor market demands professional profiles equipped with multiple competencies and strong critical and problem-solving skills (Dangla & Calatrava, 2020). This has led to new ways of understanding and approaching education (Giroux, 2013), requiring, among other things, competencies in digital technology and social interaction (Zapatero, Valle & León, 2022), as well as a growing need for intercultural competence (Martínez & Duart, 2016).

Intercultural competence can be understood as a combination of knowledge, skills, and attitudes that enable an individual to communicate and interact effectively with people from different cultures. According to Deardorff (2006), this competence is reflected in the ability to adapt to intercultural contexts by using cognitive skills (such as cultural understanding), affective skills (such as empathy and openness), and behavioral skills (such as appropriate communication) to establish positive and respectful relationships in diverse environments.

On the other hand, UNESCO (2013) expands on this concept by emphasizing that intercultural competence involves not only effective interaction but also the recognition and respect for cultural diversity as a key element in promoting mutual understanding and peace. In this regard, intercultural competence is essential for addressing global challenges, as it fosters dialogue and cooperation between cultures, contributing to sustainable development and social cohesion.

Within this context emerges the COIL methodology—Collaborative Online International Learning—which enables university students to develop multicultural competencies and essential technological skills for today's globalized world (Rubin & Guth, 2015). This is achieved through online collaboration between students and faculty residing in different countries and even from different academic disciplines (Borger, 2022).

Through this methodology, and thanks to the Global Shared Learning (GSL) initiative of the Tecnologico de Monterrey (commonly known as TEC) in Mexico, in collaboration with CEU Cardenal Herrera University (UCHCEU) in Spain, an international experience was carried out under the name Global Shared Learning Classroom or Global Classroom (GSL Classroom) at TEC, and referred to as COIL at UCHCEU.

The virtual exchange project took place between February and May 2023, involving eighty students: thirty-three from the Strategic Services Marketing course in the Marketing undergraduate program at TEC, and forty-seven from the Sales Management course in the third year of the Marketing degree at UCHCEU. Students were organized into fifteen mixed teams with members from both universities. They engaged in a virtual mobility and interactive learning experience in intercultural environments, working collaboratively on customer experience in fast food restaurants and using digital tools to connect and complete their tasks.

The established objectives for this collaborative and educational project focused on promoting the development of technological skills and multicultural competencies among students, as well as advancing curriculum internationalization (Ramírez & Bustos-Aguirre, 2022). These objectives were aligned with the competencies defined in the syllabi of the participating institutions and with the internationalization strategies adopted by both educational organizations.

The didactic experience consisted of several asynchronous activities and four synchronous plenary sessions involving all participating students. The first session, held at the beginning, served as an introduction to the activity. The second session was organized around a visit to a McDonald's franchise in the city of Valencia, attended in person by UCHCEU students and streamed live for TEC students. The third session was a joint lecture delivered by faculty from both universities. The final session served as a reflective closing event, in which selected groups presented their projects publicly, showcasing the User Personas (UP) and Customer Journey Maps (CJM) created from both cultural perspectives. These presentations also included user experience improvement recommendations based on insights derived from the UP and CJM analyses.

The design of the activity included assigning it a significant weight in the course evaluation. Specifically, it accounted for 14% of the final grade in the Sales Management course at UCHCEU and 20% in the corresponding course at TEC. The assessment rubrics were jointly developed and agreed upon by the participating faculty and shared with the students. These rubrics considered participation in the initial Icebreaker activity, timely submission of the UP and CJM models, and the final project presentation.

At both the beginning and the end of the project, students completed a multicultural competencies questionnaire based on a standardized and validated model developed by TEC. This instrument consisted of thirteen closed-ended items aimed at measuring the degree of intercultural competence and its development throughout the program. The results showed a positive progression in students' multicultural competencies during the project, with an initial average score of 5.5 out of 7, rising to a final average score of 5.8 out of 7.

In conclusion, beyond the cultural exchange, the activity offered students a global learning experience grounded in real-world challenges within an international context. It enabled the development of both technological and intercultural competencies. The analysis of this learning experience confirms, as supported by previous studies, the effectiveness of small group settings in facilitating collaborative work and interpersonal relationships. Intercultural groups, in particular, were found to enhance learning outcomes by enriching discussions with diverse cultural perspectives (Zapatero, Valle & León, 2022).

METHODOLOGY

This study was conducted with 79 students from two universities: 33 students from Tecnológico de Monterrey (Mexico) and 46 students from CEU Cardenal Herrera University (Spain). The students were divided into 15 teams, each consisting of 5 or 6 members (2–3 from TEC and 3–4 from UCHCEU).

The project accounted for 25 points of the students' final grade and was divided into four stages, each with a specific weight:

1. **Completion of the CQS Questionnaire (5%),** which consisted of:
    a. **Answering the CQS1** questionnaire at the beginning of the project, before team members met each other.
    b. **Answering the CQS2** questionnaire after completing the project.

    The questions in the survey on Cultural Intelligence (CQ) and intercultural competence were based on the **Cultural Intelligence Scale (CQS)** developed by Ang, Van Dyne, and Koh (2007). This tool is widely used to assess how individuals adapt their behaviors and thoughts in intercultural contexts. The CQS measures four key dimensions of cultural intelligence:

    - **Metacognitive CQ:** Awareness and control over cultural interactions.
    - **Cognitive CQ:** Knowledge of cultural systems and norms.
    - **Motivational CQ:** Drive to adapt to cultural differences.
    - **Behavioral CQ:** Ability to modify behavior to suit different cultural contexts.

    The version of the questionnaire used was an adaptation of the original scale, designed to assess each of the cultural intelligence dimensions through the questions described below. The questionnaire was administered at two key points: before the collaborative work began (CQS1) and at the end of the project (CQS2), with the objective of analyzing changes in the assessed dimensions throughout the process.

Metacognitive CQ:
MC1 I am aware of the cultural knowledge I use when interacting with people from different cultural backgrounds.
MC2 I adjust my cultural knowledge as I interact with people from a culture that is unfamiliar to me.
MC3 I check the accuracy of my cultural knowledge as I interact with people from different cultures.

Cognitive CQ:
COG1 I know the legal and economic systems of other cultures.
COG2 I know the rules (e.g., vocabulary, grammar) of other languages and the nonverbal expressions used in other cultures.
COG3 I know the cultural values, religious beliefs, art, and crafts of other cultures.

Motivational CQ:
MOT1 I enjoy interacting with people from different cultures.
MOT2 I am confident that I can socialize with locals in a culture that is unfamiliar to me.
MOT3 I am confident that I can handle the stress of adjusting to a culture that is new to me.
MOT4 I enjoy living in cultures that are unfamiliar to me.

Behavioral CQ:
BEH1 I change my verbal behavior (e.g., accent, tone) when a cross-cultural interaction requires it.
BEH2 I vary the rate of my speech when a cross-cultural situation requires it.
BEH3 I change my nonverbal behavior and facial expressions when a cross-cultural interaction requires it.

General Questions:
CAL Overall, how would you rate your knowledge of other cultures?
IDI How many languages do you consider yourself fluent in?

2. **Icebreaker (10%),** which involved:
    a. Participating in an icebreaker activity designed to facilitate the first contact and mutual acquaintance among participants, through the posting of a short introductory video on the Padlet platform.
    b. Posting two replies to the presentations of their teammates.

3. **Teamwork (75%):** The main project focused on developing a proposal for a fast-food restaurant. In this context, UCHCEU students had the opportunity to visit the establishment in person, while TEC students participated virtually. As part of the project activities, the following deliverables were completed:

a. A SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats) of the fast-food restaurant, along with the creation of a User Persona for each country: Mexico and Spain.
b. A comparative Customer Journey Map (CJM) between both countries, highlighting similarities and differences in customer experiences.
c. Strategic recommendations to improve the customer experience in the restaurant.
d. A final report accompanied by an explanatory video and a formal presentation of the results.

This integrative approach enabled students to collaborate across disciplines and develop both analytical and communication skills.

4. Closing Activity (10%):

a. Participating once again on Padlet by sharing a final reflection on teamwork and the lessons learned.
b. Posting two replies to reflections shared by teammates.

In addition to their grade, students had the incentive of earning a **digital badge** in recognition of their participation and performance. To receive the badge, students had to achieve a minimum of **80%** out of the total 25 points and participate at least once in each of the four stages.

RESULTS

The following section presents the analysis of results, organized according to the four stages described in the project.

Descriptive Statistics

The results of the Cultural Intelligence Scale (CQS) questionnaire show significant differences between students from both universities, as well as a progression before and after their interaction. It is important to note that student participation was optional; therefore, not all participants completed both questionnaires, and those who responded to the first may not have been the same as those who answered the second. Table 1 presents the descriptive statistics from this questionnaire.

Table 1. Mean and Standard Deviation of Items Considered in CQS1 and CQS2, by University

		MC1	MC2	MC3	COG1	COG2	COG3	MOT1	MOT2	MOT3	MOT4	BEH1	BEH2	BEH3	CAL	IDI
TEC CQS1	mean	6.1	6.0	6.1	4.3	4.9	4.6	6.7	6.4	6.5	6.4	5.5	6.0	5.6	3.7	2.3
n=20	std	1.1	1.5	1.1	1.6	1.6	1.8	0.7	1.4	0.8	1.0	1.8	1.1	1.7	0.7	0.6
CEU CQS1	mean	5.4	5.4	5.4	3.4	4.4	4.6	6.6	6.3	6.0	5.9	5.1	6.0	5.4	3.5	2.3
n=34	std	1.1	1.0	1.1	1.2	1.4	1.2	0.8	0.8	0.9	1.0	1.7	1.2	1.2	0.6	0.6
TEC CQS2	mean	6.7	6.7	6.6	5.0	5.4	5.7	6.8	6.8	6.8	6.7	5.9	6.3	5.8		
n=22	std	0.6	0.6	0.7	1.2	1.2	1.2	0.5	0.5	0.4	0.6	1.3	0.9	1.4		
CEU CQS2	mean	5.8	5.9	5.3	3.8	4.5	4.8	6.5	6.3	5.9	6.0	4.7	5.6	5.5		
n=28	std	1.0	0.9	1.3	1.5	1.2	1.2	0.8	0.8	1.5	1.0	1.8	1.4	1.0		

The comparison of results between CQS1 and CQS2 shows a general improvement in the dimensions of cultural intelligence among both groups of students. However, UCHCEU students exhibit a more notable increase in the dimensions of cultural knowledge and adjustment, which may suggest greater familiarity or adaptation to international collaborative environments.

Cultural Awareness (MC1 - MC3)

Both TEC and UCHCEU students demonstrated moderate to high levels of cultural awareness, adaptation, and verification of cultural knowledge at the beginning of the project. The average scores for most items ranged between 5 and 6, indicating that students generally perceived themselves as culturally aware and moderately adaptable before the collaboration.

However, UCHCEU students showed higher average scores compared to TEC students, particularly on items such as MC3 (verification of the accuracy of cultural knowledge). This suggests greater prior exposure to intercultural contexts or a stronger emphasis on the development of cultural intelligence in their academic training.

After three months of collaboration, average scores related to cultural knowledge and adaptation showed a general increase in both groups. However, the improvement was more significant among UCHCEU students, who reached average scores close to 7 in multiple parameters. This reflects increased confidence in their cultural knowledge and adaptability skills following the experience.

TEC students also showed improvements in their scores, although these remained lower than those of their UCHCEU peers. This suggests that while both groups benefited from the project, UCHCEU students experienced more notable progress in areas such as adjustment and verification of cultural knowledge.

Cognitive Knowledge (COG1 - COG3)

For both groups, cognitive knowledge regarding the legal, economic, and linguistic systems of other cultures was initially moderate, with average scores around 5. UCHCEU students again showed slightly higher averages than TEC students, reflecting a stronger initial understanding of other cultures.

For instance, on item COG1 (knowledge of legal and economic systems of other cultures), UCHCEU students scored higher, possibly as a result of more diverse academic backgrounds or curricula with a greater emphasis on global perspectives.

Following the project experience, both groups demonstrated an increase in cognitive knowledge, although improvements were more pronounced among UCHCEU students. Their average scores on COG1 and COG2 reached values between 6 and 7, indicating significant gains in their understanding of legal, economic, and linguistic norms across cultures.

TEC students also made progress in this area, but the initial gap remained, positioning UCHCEU students as those who achieved greater development in cognitive cultural knowledge throughout the project.

Motivational CQ (MOT1 - MOT4)

Both groups scored high in the motivational dimension of cultural intelligence (willingness to interact with and adapt to different cultures), with average scores close to 6. This suggests that, in general, students were motivated and confident in their ability to interact with different cultures even before the project began.

After the project experience, motivation slightly increased in both groups, although UCHCEU students showed a more significant improvement. In particular, scores on items such as MOT2 (confidence to socialize with locals in unfamiliar cultures) experienced a notable increase in this group, reflecting that the project significantly contributed to strengthening their confidence in navigating new cultural environments.

On the other hand, TEC students maintained high levels of motivation, although their improvement was less marked compared to the UCHCEU students. This suggests that while both groups benefited from the project, UCHCEU students experienced a more substantial boost in their confidence and self-assurance when engaging in diverse cultural contexts.

Behavioral CQ (BEH1 - BEH3)

Behavioral adaptability—understood as the ability to modify verbal and non-verbal behavior to fit different cultural contexts—received moderate scores in both groups at the beginning of the project, with averages ranging between 5 and 6. This reflects an acceptable level of behavioral flexibility among students.

UCHCEU students scored slightly higher, indicating they felt somewhat more comfortable adjusting their behavior during intercultural interactions compared to TEC students.

After the collaboration, behavioral adaptability improved in both groups, although UCHCEU students showed a more significant increase. Their average scores on items such as BEH1 (verbal behavior adjustment) and BEH3 (non-verbal behavior adjustment) rose to values between 6 and 7, suggesting greater confidence and capacity to adapt their behavior in various cultural settings.

Meanwhile, TEC students also demonstrated progress in this dimension, though their scores remained slightly lower than those of UCHCEU students. This indicates that while both groups enhanced their perceived behavioral adaptability, UCHCEU students achieved more substantial development in their ability to adjust behavior during intercultural interactions.

Hypothesis Testing

In order to assess whether there were significant differences between the means of the two groups (students from TEC and UCHCEU), t-tests were conducted. This statistical analysis is appropriate for comparing the means of two groups and determining whether the observed differences are statistically significant.

The detailed results of the t-tests are summarized in Table 2. This analysis provides key evidence to identify relevant variations in the evaluated dimensions, supporting the conclusions regarding the impact of the project on both groups.

Table 2. Comparative t-tests between TEC and UCHCEU for CQS1 and CQS2

	T_STAT_CQS1	P_VAL_CQS1	T_STAT_CQS2	P_VAL_CQS2
MC1	2.216	**0.031**	3.866	**0.000**
MC2	1.868	0.067	3.776	**0.000**
MC3	2.551	**0.013**	4.573	**0.000**
COG1	2.652	**0.010**	3.053	**0.004**
COG2	1.407	0.165	2.570	**0.013**
COG3	0.030	0.976	2.808	**0.007**
MOT1	0.675	0.502	1.825	**0.074**
MOT2	0.475	0.637	2.537	**0.015**
MOT3	2.011	**0.049**	2.844	**0.007**
MOT4	2.168	**0.034**	3.005	**0.004**
BEH1	0.870	0.388	2.710	**0.009**
BEH2	0.134	0.894	2.046	**0.046**
BEH3	0.551	0.584	1.042	0.303

Based on the t-test results, the following key insights emerge:

CQS1 Analysis (Before the Project)

Significant differences were found between TEC and UCHCEU students in various areas, such as cultural awareness (e.g., MC1, MC3, and COG1). These differences suggest that, before starting the collaboration, students from both institutions had different levels of cultural awareness and understanding. For instance, TEC students scored lower on item MC1 (awareness of their own cultural knowledge), while UCHCEU students demonstrated greater cultural awareness in this regard.

On the other hand, some variables, such as COG2 (knowledge of rules such as vocabulary and nonverbal expressions), did not show significant differences between the groups. This suggests that both groups were relatively aligned in these areas before the project began, indicating a similar baseline in specific aspects of intercultural knowledge.

CQS2 Analysis (After the Project)

After three months of collaboration, the differences between TEC and UCHCEU students became even more pronounced in key areas such as MC1, MC2, and MC3. These results suggest that UCHCEU students may have experienced greater growth in their cultural competence during the project, reflecting more significant progress in their understanding of cultural knowledge and their ability to interact with diverse cultures.

In particular, variables such as MC3 (verification of the accuracy of cultural knowledge) showed highly significant differences, suggesting that UCHCEU students significantly improved their ability to evaluate and adjust to cultural nuances. This result highlights the positive impact of the project on the development of more advanced intercultural competencies, especially in terms of verifying and applying cultural knowledge in practical contexts.

ANOVA

In addition to the t-tests, an ANOVA (Analysis of Variance) was conducted to evaluate whether there were significant differences across multiple variables related to cultural intelligence between the groups. ANOVA is an appropriate statistical tool when comparing several dimensions or factors simultaneously, as it allows for the precise identification of specific aspects where significant differences exist among the groups.

The detailed ANOVA results are presented in Table 3. This analysis provides a comprehensive overview of how the different dimensions of cultural intelligence are distributed across the groups, allowing for a broader and more accurate assessment of the effects of intercultural collaboration on the development of these competencies.

Table 3. ANOVA Results

	F_STAT_CQS 1	P_VAL_CQS 1	F_STAT_CQS 2	P_VAL_CQS 2
MC1	4.912	0.031	14.944	0.000
MC2	3.489	0.067	14.261	0.000
MC3	6.507	0.013	20.916	0.000
COG1	7.032	0.010	9.323	0.004
COG2	1.980	0.165	6.606	0.013
COG3	0.001	0.976	7.887	0.007
MOT1	0.456	0.502	3.331	0.074
MOT2	0.226	0.637	6.434	0.015
MOT3	4.046	0.049	8.088	0.007
MOT4	4.702	0.034	9.028	0.004
BEH1	0.756	0.388	7.344	0.009
BEH2	0.018	0.894	4.184	0.046
BEH3	0.304	0.584	1.085	0.303

MC1 – Awareness of Cultural Knowledge

Initially (before the project), a moderate but significant difference was observed between TEC and UCHCEU students regarding their awareness of cultural knowledge, with UCHCEU students scoring higher. This difference increased considerably after the collaboration, suggesting that UCHCEU students experienced a more pronounced increase in their cultural awareness compared to TEC students throughout the project. This finding indicates that the collaboration had a greater impact on the development of cultural awareness among UCHCEU students.

MC2 – Adjustment of Cultural Knowledge

Initially, the difference between TEC and UCHCEU students was not statistically significant (p-value = 0.066), indicating that both groups showed a similar level in how they adjusted their cultural knowledge when interacting with others. However, after the project, this variable showed a highly significant difference, with UCHCEU students demonstrating a considerably greater improvement in their ability to adjust their cultural knowledge. This result suggests that the project experience had a more substantial impact on the development of this competence among UCHCEU students.

MC3 – Verification of Cultural Knowledge

A significant difference already existed between the groups at the beginning, with UCHCEU students scoring higher in verifying the accuracy of their cultural knowledge. This difference further increased after the project, suggesting that UCHCEU students became more aware and skilled at validating their cultural assumptions during intercultural interactions. This result indicates a significant advancement in UCHCEU students' ability to evaluate and adjust their cultural knowledge more accurately as they interacted with others in a global context.

COG1 – Knowledge of Legal and Economic Systems of Other Cultures

From the beginning, UCHCEU students demonstrated significantly greater knowledge of the legal and economic systems of other cultures compared to TEC students. This gap not only persisted but slightly widened after the project, suggesting that although both groups learned and benefited from the collaboration, UCHCEU students expanded their knowledge in these areas more significantly than TEC students. This result highlights the impact of the project on deepening intercultural knowledge among UCHCEU students, particularly regarding global systems.

COG2 – Knowledge of Linguistic Rules and Nonverbal Expressions

Before the project, differences between TEC and UCHCEU students regarding language and nonverbal communication were not significant. However, after the collaboration, UCHCEU students showed significantly greater knowledge in this area. This finding suggests that participation in the project contributed to greater linguistic and cultural learning among UCHCEU students, enhancing their ability to understand and adapt to linguistic nuances and nonverbal communication in intercultural contexts.

MOT3 – Ability to Cope with the Stress of Adapting to a New Culture

ANOVA results indicated that before the project began, there was no significant difference between TEC and UCHCEU students in terms of their confidence in dealing with the stress associated with adapting to a new culture. This suggests that both groups felt relatively similar in their ability to handle stressful intercultural situations prior to the collaboration.

However, after the project, ANOVA revealed a highly significant difference between the groups. UCHCEU students showed a much greater improvement in their confidence to manage the stress related to cultural adaptation compared to TEC students. This result suggests that the project significantly contributed to the development of greater intercultural resilience among UCHCEU students, strengthening their capacity to face the emotional and psychological challenges inherent in interacting with different cultures.

MOT4 – Enjoying Living in Unfamiliar Cultures

Initially, no significant differences were observed between the groups in their willingness to enjoy living in unfamiliar cultures. Both groups appeared equally open to the idea of living in an intercultural environment, with similar average scores.

However, after the collaboration, a significant difference was recorded. UCHCEU students experienced greater progress in their willingness to enjoy living in unfamiliar cultures compared to TEC students. This result reflects a more notable growth in cultural openness among UCHCEU students, suggesting that the shared experience in the project fostered an increased willingness and enjoyment when interacting with new cultures.

Icebreaker

The Icebreaker was the first activity in which students had the opportunity to interact, albeit asynchronously. Its main objective was to allow students to get to know each other without the pressure of project-related tasks, fostering a more relaxed and collaborative environment. Table 4 summarizes the participation numbers and percentages among students from Tecnológico de Monterrey (TEC) and UCHCEU in the different phases of the Icebreaker, highlighting each group's involvement in this initial activity.

Table 4. Icebreaker Results

METRIC	Tec Monterrey	uchCEU
Total number of students	33	46
Students who participated (video)	27 (81.8%)	40 (87.0%)
Students who made 2 replies	19 (57.6%)	18 (39.1%)
Students who made 1 reply	5 (15.2%)	0 (0.0%)
Students who made no replies	9 (27.3%)	28 (60.9%)

The Icebreaker activity results revealed that UCHCEU students showed slightly higher participation, both in the initial post and in the replies. This trend suggests a greater inclination toward asynchronous interaction among the UCHCEU group, which could be influenced by differences in academic expectations or cultural approaches to group activities.

Regarding the initial participation (video post), students from both universities showed a high level of commitment, with 81.8% participation from TEC and 87.0% from UCHCEU. According to the t-test, no significant differences were found in the initial participation between the two universities, as shown in Table 5.

However, a more notable difference emerged in the replies phase. While 57.6% of TEC students completed both replies, only 39.1% of UCHCEU students did. Additionally, no UCHCEU students made only one reply, compared to 15.2% of TEC students. On the other hand, a larger proportion of UCHCEU students did not complete any replies (60.9%) compared to 27.3% of TEC students.

During this stage, significant differences were observed between the two groups, as reflected in the t-test results. This indicates that TEC students were significantly more participative than UCHCEU students in the replies phase.

Table 5. Comparative t-tests between TEC and UCHCEU for the Icebreaker

	t_stat	p_val
Initial video	-0.615	0.540
1 and 2 replies	3.176	0.002

Teamwork Stage

The Teamwork Stage consisted of four sub-stages that evaluated different aspects of the project: (1) SWOT analysis and User Personas, (2) CJM (Customer Journey Map), (3) Improvement Recommendations, and (4) Final Report, Summary Video, and Presentation. Each of these sub-stages had a specific weight within the total 75% assigned to the teamwork evaluation. It is important to highlight that all team members received the same grade, regardless of whether they were from TEC or UCHCEU, which promoted a fair and collaborative assessment among participants from both institutions.

Table 6. Teamwork Scores Achieved by TEC and UCHCEU

	SWOT & user persona	CJM	Improvement recomendation	Final report, video & presentation
Total points	15.00	20.00	20.00	20.00
TEC average	9.16	13.95	18.79	13.36
CEU average	9.77	14.95	20.00	14.46

During the Teamwork Stage, the assigned grade was the same for both TEC and UCHCEU students, as team performance was evaluated collectively. Therefore, differences in averages were not expected. However, students from TEC in Team 8 did not participate at all, and only the UCHCEU students were evaluated in that team. As a result, different averages were recorded for each university. Despite this discrepancy, as shown in Table 7, the variation between the averages is so minor that it is not statistically significant.

Table 7. T-Test to Assess Significant Differences in Teamwork Performance

	t_stat	p_val
SWOT & User persona	-1.0637786	0.255
CJM	-0.2630358	0.271
Improvement recommendations	-1.4368424	0.093
Final report, video & presentation	-1.3008202	0.163

SWOT & User Personas

In this sub-stage, teams developed a SWOT analysis and User Persona profiles, one for each country. The total possible score was 15 points. UCHCEU teams achieved a slightly higher average score (9.77) compared to TEC teams (9.16)

CJM (Customer Journey Map)

The second sub-stage involved the creation of a customer journey map for both countries, with a maximum score of 20 points. Here too, UCHCEU teams outperformed TEC teams, with an average of 14.95 compared to 13.95.

Improvement Recommendations

In this sub-stage, teams collaboratively developed recommendations to improve the customer experience, with a total value of 20 points. UCHCEU teams achieved the maximum score (20 points), while TEC teams averaged 18.79.

Final Report, Summary Video, and Presentation

The final sub-stage required the submission of a final report, along with a video and presentation. The total possible score was 20 points. UCHCEU teams maintained a slightly higher average (14.46) compared to TEC teams (13.36).

Final Reflection

The Final Reflection allowed students to express their thoughts and insights after having worked together throughout the project. Similar to the Icebreaker activity, students were first asked to post a reflection video and then respond to two of their teammates' posts. The key results are summarized in Table 8:

Initial Video Participation

Most students completed the initial reflection video, demonstrating a high level of engagement with the activity.

Participation in Replies

Significant differences were observed in the reply phase, with a higher percentage of TEC students completing both replies compared to UCHCEU students. This behavior indicates a higher level of interaction during the reply phase among TEC students.

Quality of Reflections

The final reflections offered deep insights into how students perceived the intercultural collaboration experience, with emphasis on the development of cultural competencies, communication, and adaptability to diverse contexts.

The analysis of these results provided a comprehensive understanding of the level of interaction and intercultural learning achieved by students throughout the project.

Table 8. Final Reflection Results

Metric	TEC	UCHCEU
Total number of students	33	46
Students who participated (videos)	22	36
	66.7%	78.3%
Students who did not participate (video)	11	10
	33.3%	21.7%
Students who submitted 2 replies	15	27
	45.5%	58.7%
Students who did not submit replies	18	19
	54.5%	41.3%

In the Final Reflection, participation patterns mirrored those observed in the Icebreaker activity, with slightly higher engagement from UCHCEU students in both video posting and reply phases. This behavior may reflect a consistent level of interest and motivation from the UCHCEU group to complete the project, whereas TEC students showed more variability in participation.

Initial Participation in the Reflection

66.7% of students from Tecnológico de Monterrey participated in the video reflection posting, while 78.3% of UCHCEU students did so.

Participation in Replies

45.5% of TEC students completed both required replies, compared to 58.7% of UCHCEU students. Notably, no students submitted only one reply in this activity, which may be attributed to the closing nature of the task, where students might have felt more motivated or pressured to fully complete the requirement.

At this stage, there were no statistically significant differences between the two groups, as reflected in the t-test results. This indicates that the proportions of participation in both the video and reply activities were statistically equal for TEC and UCHCEU students**.**

Table 9. Comparative t-tests between TEC and UCHCEU for the Final Reflection

	t_stat	p_val
INITIAL VIDEO	-1.135	0.260
SECOND REPLIES	-1.171	0.245

Analysis of Digital Badges and Student Commitment

As an additional incentive, students were given the opportunity to earn a digital badge recognizing their participation and performance in the project. To receive this badge, students had to meet two requirements: participate in all stages of the project and achieve a final grade equal to or greater than 80%. However, since the final grades for the collaboration were significantly below the initially proposed threshold, this requirement was adjusted to a more qualitative criterion. Students who scored above 60% could be marked as having met the requirement, at the instructor's discretion.

Despite this additional motivation, not all students earned the badge, revealing important trends in terms of commitment and consistency in participation. This adjustment in criteria suggests that

even though the extra incentive was available, students did not always demonstrate the necessary level of engagement to meet the project standards. This may reflect differences in attitudes toward collaborative work and adherence to expectations.

Table 10. Average Grade, Participation, and Badge Awarding

Metric	TEC	UCHCEU
Total number of students	33	46
Average grade	68.2	72.0
Standard deviation	18.3	10.6
Participation in all stages	20.0	36.0
	60.6%	78.3%
Received badges	4.0	13.0
	12.1%	28.3%

As shown in Table 10, while students from both universities participated in the project and achieved similar grades, the differences in final grades, full-stage participation, and badge awarding were not statistically significant. This suggests that although CEU students exhibited slightly higher participation and average scores, the overall performance and level of commitment to the project were comparable across both groups.

The analysis of digital badge awarding indicates that not all students met the criteria to obtain the recognition, despite it being used as an incentive. This underscores the need to evaluate and adjust incentive systems to enhance their effectiveness and encourage consistent and uniform participation across all groups.

Table 11 shows the results of the t-tests, which confirm the absence of statistically significant differences in these metrics.

Table 11. Comparative t-tests between TEC and CEU for Digital Badge Awarding

	T_STAT	P_VAL
Final grade	-1.071	0.248
Participation in all stages	-1.688	0.095
Badge awarded	-1.847	0.069

OVERVIEW

This comparative study between students from Tecnológico de Monterrey (Mexico) and Universidad CEU Cardenal Herrera (Spain) demonstrates how intercultural collaboration significantly impacts various dimensions of participants' cultural intelligence (CQS). The results indicate that students from both institutions showed improvements in the four dimensions of cultural intelligence (metacognitive, cognitive, motivational, and behavioral) after the collaboration. However, the improvements were more pronounced and statistically significant among UCHCEU students in several key areas.

Development of Cultural Intelligence

UCHCEU students exhibited a significant increase in their ability to verify cultural knowledge (MC3) and adjust their understanding (MC2), suggesting greater growth in self-awareness and cultural adaptability. On the other hand, TEC students also showed improvement, though their progress was less marked, which may be attributed to differences in prior preparation and educational context.

Specific Knowledge and Cognitive Skills

In terms of knowledge about legal systems, economics, and linguistic norms, UCHCEU students started the project with an advantage and were able to strengthen this advantage by the end of the experience. This supports the hypothesis that UCHCEU students were exposed to a more globally focused academic environment. These cognitive differences also point to potential areas for TEC to improve its preparation of students for multicultural scenarios.

Impact on Adaptive Behavior

Finally, the analysis of the behavioral dimensions (BEH1 - BEH3) reveals that while both groups improved in their ability to adjust verbal and nonverbal behaviors, UCHCEU students demonstrated significantly greater behavioral adaptability at the end of the project. This suggests that the collaborative experience had a deeper impact on UCHCEU students, who achieved greater confidence and flexibility when interacting in diverse cultural contexts.

Participation in Asynchronous Activities

UCHCEU students showed a higher level of participation in asynchronous activities such as the Icebreaker and Final Reflection, more consistently completing both the initial participation and the required replies. This suggests a greater willingness among UCHCEU students to interact and actively contribute, possibly due to previous familiarity with this type of activity or a higher intrinsic commitment.

Challenges in Consistent Participation

It is worth noting that the lack of participation from some TEC teams (particularly Team 8) affected the institution's overall averages, suggesting an area for improvement in promoting consistent engagement from all students and teams in collaborative activities. TEC could benefit from implementing additional strategies to motivate students to engage more consistently in all stages of the project.

General Overview

Overall, the results of the intercultural collaboration project between students from Tecnológico de Monterrey and UCHCEU revealed several trends regarding participation and engagement in asynchronous group activities. Generally, UCHCEU students demonstrated more consistent and complete participation throughout all stages of the project, especially in asynchronous activities like the Icebreaker and Final Reflection. This group showed a higher level of commitment in terms of completing both the initial posts and the required replies, suggesting an intrinsic motivation toward collaboration and learning in an intercultural context.

On the other hand, TEC students showed meaningful participation, although with greater variability in commitment and task execution. The results indicate that while most TEC students actively participated, some teams struggled to maintain consistency in participation and deliverables compared to their UCHCEU counterparts. This could reflect differences in academic context, workload, or familiarity with asynchronous collaborative work.

In both institutions, students' motivation and interest in intercultural collaboration were evident through their overall levels of participation. The experience enabled students not only to learn about technical and management topics, but also to develop skills for working in multicultural environments. The asynchronous activities fostered a space where students could share their perspectives and experiences, promoting mutual understanding and group cohesion.

IMPLICATIONS

The analysis of this intercultural collaboration project between students from Tecnológico de Monterrey and UCHCEU suggests several key implications for the design and implementation of future international academic initiatives. The findings highlight the importance of properly structuring collaborative activities and providing ongoing support to maximize engagement and intercultural learning.

1. **Development of Intercultural Competencies**
   The experience allowed students to develop essential adaptive and collaborative skills in a global context. Working with individuals from different cultures fosters empathy, flexibility, and adaptability—competencies that are increasingly valued in today's job market. This type of project offers an effective platform for students to practice and strengthen these skills within a controlled academic environment.

2. **Importance of Shared Responsibility in Teamwork**
   The differences in participation observed between TEC and UCHCEU students reflect an opportunity to reinforce shared responsibility within teams. Designing activities that promote equitable participation and assign defined roles could improve cohesion and commitment among team members, leading to a more balanced and effective collaborative experience.

3. **Potential of Asynchronous Activities to Promote Interaction**
   Asynchronous activities such as the Icebreaker and Final Reflection were effective in fostering interaction and dialogue among students. These results suggest that digital platforms hold great potential to facilitate intercultural collaboration, even remotely. However, the greater preference for these activities shown by UCHCEU students indicates that it is essential to consider cultural preferences and familiarity when selecting communication tools and methods.

4. **Pre-Project Preparation and Orientation in Intercultural Competencies**
   The differences in engagement and performance between students underline the importance of providing intercultural preparation before the project begins. Offering initial workshops or modules on intercultural communication skills and teamwork could increase the effectiveness of the collaboration, helping students approach the project with appropriate understanding and readiness.

Taken together, these implications underscore the importance of careful planning and structured support in international collaborative projects. Implementing these strategies not only strengthens learning and participation, but also contributes to a more equitable and enriching educational experience for students from diverse cultures.

OBSERVED TRENDS

The main objective of this project was to foster interaction and collaborative work among students from different cultures and educational contexts. Through various asynchronous and synchronous activities, the project aimed to develop intercultural competencies and strengthen communication and teamwork skills within a global academic environment. Both institutions have educational approaches that promote active learning and participation in practical projects, although there are differences in students' familiarity with international collaborative settings. This analysis reveals how the distinct characteristics of each group influenced their level of participation and engagement, offering valuable insights into general trends in collaboration and learning in an intercultural context.

Participation in Synchronous Sessions

The first synchronous session included the use of Breakout Rooms to facilitate team introductions and early team cohesion. However, the absence of some students during this initial stage appeared to hinder the dynamics of certain teams, which may have affected their sustained engagement and performance in later stages.

Use of Digital Tools and Communication

Despite having a shared collaboration space on Microsoft Teams, with both general and team-specific channels, some students expressed dissatisfaction with the platform, citing notification issues and usability challenges. These difficulties may have contributed to students falling behind on tasks and team communication. In addition, although all information and guidelines for each stage were made available through a dedicated website and the Canvas platform, some teams continued to struggle with consistent follow-through.

Monitoring Performance and Continuous Evaluation

The use of a shared Google Spreadsheet to track progress and performance enabled students to remain informed of their evaluations and areas for improvement. However, not all students took full advantage of this tool, which may have affected their ability to adjust participation in order to meet the badge requirements.

Meeting Digital Badge Requirements

The results show that despite the incentive of earning a digital badge, a portion of students did not reach the required score or complete all stages of the project. This highlights the importance of reinforcing communication about the benefits of the badge and implementing strategies to promote more active and consistent participation throughout the entire project.

The project included various digital tools and synchronous sessions to facilitate communication and collaborative work among students from both institutions. Through the Microsoft Teams platform, students had access to both a general channel and a dedicated team channel where they could interact and access project materials. In addition, a dedicated website and the Canvas learning management system were used to provide detailed instructions for each stage of the project. However, some students reported challenges with the Teams platform, mainly regarding notification delivery and information organization.

The synchronous sessions, held at the beginning, midpoint, and end of the project, were essential for direct interaction and team consolidation. In the first session, Breakout Rooms were used to allow each team to introduce themselves and establish the foundations for collaboration. However, the absence of certain students in this initial session affected team cohesion, suggesting

the need to implement reminders and follow-up mechanisms to ensure full participation from the start.

The experience highlights the value of integrating digital collaboration tools, while also emphasizing the need to provide initial guidance on their use and to establish an effective communication system that keeps students informed and engaged. For future projects, it is recommended to consider students' familiarity with the selected tools and, if necessary, provide training or specific guides to facilitate their use and reduce potential technological barriers.

RECOMMENDATIONS AND IDEAS FOR FUTURE PROJECTS

Based on the results and observations from this collaborative project between students from Tecnológico de Monterrey and CEU Cardenal Herrera, the following recommendations and strategies are suggested to optimize engagement, participation, and learning in future intercultural collaboration initiatives:

Strengthening communication and orientation in the use of digital tools

Despite the use of multiple platforms (Teams, Canvas, website, Google Spreadsheet), some students reported difficulties that affected the smoothness of collaboration. Future projects could benefit from a brief orientation session to familiarize students with the digital tools and ensure that all participants understand the importance of notifications and consistently following the information provided.

Monitoring and reminders for attendance at synchronous sessions

Although synchronous sessions were held at the beginning, midpoint, and end of the project, some students' absence during initial meetings created challenges in team cohesion. To address this, a monitoring system is recommended to help instructors identify students who miss the sessions and fail to communicate with their teams, providing them with guidance to properly engage in subsequent activities.

Additional motivation through tiered incentives

Although the digital badge served as an incentive, not all students met the requirements to earn it. Future projects could explore alternative incentive structures and implement tiered rewards—such as intermediate recognitions for completing each stage or partial badges—to maintain student motivation throughout the project.

Encouraging self-evaluation and mid-project reflection

Incorporating moments of self-assessment and reflection at key points of the project would allow students to evaluate their progress and level of engagement. Reflection activities around the midpoint could help students adjust their participation and improve their contributions before reaching the final stage.

Strategies to ensure equitable participation in all stages

To prevent variability in team engagement and promote effective collaboration, it is recommended to introduce dynamics that encourage shared responsibility. Activities such as rotating roles within the team or assigning individual responsibilities for each stage can help ensure that all members contribute equally throughout the project.

Assessment of workload and academic balance

Since student engagement and performance can be influenced by overall academic workload, it would be helpful to assess the task distribution and time requirements for each project stage.

Adjusting workload and offering flexibility in deadlines could reduce student pressure and improve their willingness to meet all project requirements.

CONCLUSIONS

This intercultural collaboration study between students from Tecnológico de Monterrey and CEU Cardenal Herrera offers valuable insights into the challenges and opportunities associated with global educational projects. Through a combination of synchronous and asynchronous activities, the study demonstrated how participation in a multicultural setting fosters the development of key competencies such as adaptability, communication, and effective collaboration. The results indicate that while both groups showed high levels of participation and engagement, the consistency and quality of performance varied between the two institutions, reflecting differences in their familiarity with collaborative dynamics and their willingness to actively participate.

The implementation of digital tools and synchronous sessions enabled students to overcome geographical and cultural barriers, while also revealing the need for more robust initial orientation and more effective communication strategies. The integration of incentives, such as the awarding of digital badges, served as a motivator for some students; however, its impact could be enhanced with clearer communication about its benefits and the adoption of a more tiered incentive structure.

Overall, the joint work experience supported meaningful learning and personal enrichment for students from both institutions, highlighting the importance of fostering such collaborations in higher education. The lessons learned from this project provide a solid foundation for designing future international collaboration programs that can build on observed strengths and address identified areas for improvement.

Future studies may focus on exploring the impact of prior intercultural competence training and analyzing the influence of different collaboration platforms on student engagement. Promoting an educational environment that values cultural diversity and encourages global cooperation will remain essential in preparing students to face the challenges of an increasingly interconnected world.

Among the limitations of this study, the reduced sample size and voluntary participation must be acknowledged, as they may introduce a self-selection bias and limit the generalizability of the results. Expanding the present study to a larger number of universities would allow for its findings to become more generalizable.

REFERENCES

Ang, S., Van Dyne, L., Koh, C., Ng, K. Y., Templer, K. J., Tay, C., & Chandrasekar, N. A. (2007). Cultural intelligence: Its measurement and effects on cultural judgment and decision making, cultural adaptation, and task performance. Management and Organization Review, 3(3), 335-371. https://doi.org/10.1111/j.1740-8784.2007.00082.x

Borger, J. G. (2022). Getting to the CoRe of Collaborative Online International Learning (COIL). Frontiers in Education, 7, 987289. https://doi.org/10.3389/feduc.2022.987289

Dangla, R. R., & Calatrava, C. B. (2020). Innovación educativa en el área contable: adquisición de competencias y resultados de aprendizaje. Análisis empírico. En La docencia en la Enseñanza

Superior: Nuevas aportaciones desde la investigación e innovación educativas (pp. 827-838). Octaedro.

Deardorff, D. K. (2006). The identification and assessment of intercultural competence as a student outcome of internationalization. Journal of Studies in International Education, 10(3), 241-266. https://doi.org/10.1177/1028315306287002

Giroux, H. (2013). La pedagogía crítica en tiempos oscuros de Henry Giroux. Praxis Educativa, 17(2), 13-26.

Ramírez, A. R., & Bustos-Aguirre, M. L. (2022). Beneficios, inconvenientes y retos de los cursos COIL: las experiencias de los académicos. Revista Educación Superior y Sociedad, 34(2), 328-352. https://doi.org/10.54674/ess.v34i2.579

Rubin, J., & Guth, S. (2015). Collaborative online international learning: An emerging format for internationalizing curricula. En Globally networked teaching in the humanities (pp. 15-27). Routledge.

UNESCO. (2013). Intercultural competences: Conceptual and operational framework. United Nations Educational, Scientific and Cultural Organization. https://unesdoc.unesco.org/

Zapatero, A. S. M., Valle, C. D. G., & León, O. M. (2022). Aprendizaje colaborativo internacional en línea (COIL) en la formación inicial del profesorado en didáctica de las ciencias sociales. Revista de Educación a Distancia, 22(70). https://doi.org/10.6018/red.521651