

5TH GRADERS' INTERCULTURAL AWARENESS AFTER A TELECOLLABORATIVE
PEDAGOGICAL EXPERIENCE IN A PRIVATE SCHOOL IN CALI, COLOMBIA

A master's thesis presented by

Leidy Lorena Bolaños Buitrago

School of Language Sciences of

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by

LEIDY LORENA BOLAÑOS BUITRAGO

Approved as to style and content by:

Mg. Alejandro Fernández Benavides

Orlando Cháves Varón

María Eugenia Guapacha Chamorro

Ricardo Salas Moreno

School of Language Sciences

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Abstract

Online technologies have increased the possibilities of contact amongst people of diverse cultural, social, and linguistic origins. The use of digital technology gives students opportunities to get in touch with people from other cultures and foster intercultural skills through virtually-mediated environments. Telecollaborative alternatives such as COIL (Collaborative Online International Learning) and intercultural language teaching pose opportunities to enhance students' intercultural awareness. The objective of this research is to determine the impact of a COIL experience focused on environmental issues on the development of intercultural awareness of a group of fifth graders from a private school in Cali. This mixed-methods action research reports a ten-week experience carried out between 20 Colombian elementary school learners and 8 American students. Data were gathered through pre and post questionnaires, interviews, field journals, and students' artifacts. Results suggest that by the end of the COIL experience students were able to explore their own and other's realities, examining values, behaviors, and beliefs from other cultures. Participants recognized the similarities and differences between their communities which allowed them to see themselves as agents of change. This understanding contributed to enhance students' intercultural awareness promoting cooperative work and critical views in language learning.

Keywords: intercultural awareness, intercultural dimension, telecollaboration, COIL, elementary education

Resumen

Las tecnologías en línea han incrementado las posibilidades de contacto entre personas de diversos orígenes culturales, sociales y lingüísticos. El uso de la tecnología digital brinda a los estudiantes la oportunidad de conectar con personas de otras culturas y promover habilidades interculturales mediante el uso de entornos virtuales. Por lo tanto, alternativas telecolaborativas como COIL (*Collaborative Online International Learning*-Aprendizaje Internacional Colaborativo en Línea) y la perspectiva intercultural en la enseñanza de lenguas ofrecen oportunidades para fortalecer la conciencia intercultural de los alumnos. El objetivo de esta investigación es determinar el impacto de una experiencia COIL centrada en temas ambientales en el desarrollo de la conciencia intercultural de un grupo de estudiantes de quinto grado de un colegio privado de Cali. Esta investigación-acción de tipo mixto reporta una experiencia telecolaborativa de diez semanas entre estudiantes colombianos de primaria y pares estadounidenses. Los datos se recopilieron mediante cuestionarios inicial y final, entrevistas, diarios de campo y producciones de los alumnos. Los resultados sugieren que, al finalizar la experiencia COIL, los estudiantes pudieron reflexionar sobre sus propias realidades y las de los demás, explorando valores, comportamientos y creencias de otras culturas. Los participantes reconocieron las similitudes y diferencias entre sus comunidades, lo que les permitió verse como agentes de cambio. Además, esta comprensión contribuyó a mejorar la conciencia intercultural de los estudiantes promoviendo el trabajo cooperativo y las visiones críticas en el aprendizaje de idiomas.

Palabras clave: conciencia intercultural, dimensión intercultural, telecolaboración, COIL, educación primaria

Introduction

Interacting with people from diverse geographical and national contexts has been possible due to the technological, political, and economic affordances emerging from the postmodern reality (Baker, 2015). The use of online technology through virtually-mediated environments provides students opportunities to interact with people from other cultures, which potentially fosters the development of intercultural skills in academic spaces (Egbert 2020; Thorne, 2010). Hence, telecollaborative alternatives such as COIL (Collaborative Online International Learning), which is described as an innovative methodology focused on international interaction and cooperation, promotes learning at global level through online collaboration (Rubin, 2017).

Adopting intercultural language teaching encourages communicative competences while integrating and reflecting on intercultural abilities and social interactions (Byram, 1997; Liddicoat, 2008) which poses an opportunity to enhance students' intercultural awareness. Furthermore, COIL's potential lies in its ability to facilitate intercultural interaction through online collaboration with teachers and students from different locations. This approach significantly contributes to the development of intercultural competencies, fostering values such as tolerance and empathy (Guth & Rubin, 2015; O'Dowd, 2013; Rubin, 2017).

The concept of COIL has been addressed since 2006 by the State University of New York's COIL Center (SUNY COIL, 2024). Some authors have implemented COIL experiences aiming at developing global perspectives and intercultural competences with university learners worldwide (Gutiérrez & Ellis, 2020; Hackett *et al.*, 2023; Harris *et al.*, 2021). In Colombia, telecollaborative experiences integrating the intercultural dimension have become increasingly stronger in higher education (Álvarez Valencia, 2019; Fernández, 2019). However, little research of this type has been conducted at primary and secondary level; such as Ramírez-Lizcano and Cabrera-Tovar's (2020) research in a private school with

sixth graders. The studies mentioned are relevant in Colombian schools as an opportunity to foster young learners' capacity to analyze intercultural relationships between their own and others' communities, through the heightened comprehension of values, behaviors and beliefs.

Concerning the above, there is a gap in the implementation of telecollaborative methodologies that combine an intercultural language teaching approach (ILT) in elementary school contexts in Colombia. A telecollaborative methodology facilitates intercultural exchange, helps students to interact, strengthens relationships with people from different origins and contexts, and develop intercultural competences through the use of online spaces, such as students' intercultural awareness (Guth & Rubin, 2015).

The school's educational proposal seeks to ensure students' development of communicative and global skills that strengthen language teaching-learning. Hence, the school included in the curriculum some areas of knowledge that are taught in English, such as Math, Science, Global Perspectives, Ethics, and Religion. According to the above, and based on what the researcher observed, the lack of integration between telecollaboration and the intercultural dimension was present at Fray Damián González school, where this study was conducted, specifically in fifth-grade Science lessons. Thus, this mixed-methods research arises as an opportunity to expand intercultural interactions between national and international pupils, promoting cooperative work in EFL telecollaboration which has been little explored.

Furthermore, English teaching in schools often focuses solely on developing language skills, leaving aside key aspects such as intercultural awareness. However, in an increasingly globalized world, it is essential for students to learn not only to communicate in another language but also to interact respectfully with people from different cultural backgrounds. This need is even more relevant at the elementary education level, where the development of

values, attitudes, and social skills begins to consolidate (Piaget, 1932). For this reason, implementing a pedagogical approach that integrates telecollaboration and the development of intercultural awareness in a Science class in English responds to an urgent demand for a more comprehensive education. Therefore, this study attempts to look into young learners' intercultural awareness manifestations after the implementation of a COIL experience.

This report is divided in seven sections: the introduction, where the statement of the problem, the situation that led to proposing the research questions and the justification are presented. The second part addresses the theoretical framework of the study and the explanation of its core concepts. Third, previous research in the field at the international, national and local levels are described. Next, the methodology used for the design and implementation of the COIL experience, and data collection and analysis techniques and instruments are described. Then, results are described and discussed, and finally conclusions and pedagogical implications are addressed.

Research questions

General research question

What is the impact of the implementation of a telecollaborative pedagogical proposal focused on environmental issues on 5th graders' intercultural awareness from a private school in Cali?

Specific research questions

1. What are the 5th graders' intercultural awareness level and manifestations before, during, and after participating in a telecollaborative pedagogical proposal on environmental issues?
2. How does participation in a telecollaborative pedagogical proposal about environmental issues impact students' perceptions of their role in preventing and solving these issues in their community?

Previous research in the field

In this section, some empirical studies about intercultural language learning, telecollaboration, and Collaborative Online International Learning (COIL) at international, national, and local levels are discussed.

Intercultural language teaching has studied some phenomena such as identity (Ho, 2011; Gong et al., 2021; Gün & Yavuz, 2023), global citizenship (Aljuaid, 2022; Cantor et al. 2024; Soto et al. 2023), intercultural skills development (Achieng, 2023; Fan, 2024; Fenghua, 2023), Intercultural Communicative Competence (ICC) promotion (Imamyartha et al., 2020; Naqeeb, 2025; Toscu & Erten, 2022), and intercultural awareness (Bui & Nguyen, 2022; Gashi, 2021; Lee et al., 2023). Considering that this study focuses on the development of intercultural awareness, these authors have investigated how intercultural awareness is integrated and strengthened in the English classroom with primary and secondary school students.

In addition, telecollaboration has been investigated in different fields, such as foreign language teaching (Di Sarno-García, 2024; Taskiran, 2019; Ware & O'Dowd, 2008), teacher training (Dooly & Sadler, 2020; Grau & Turula, 2019; Vinagre, 2016), and intercultural education (Eren, 2021; Hackett *et al.*, 2023; Vahed & Rodriguez, 2020) and with different populations, such as primary school students (Canto, 2020; Di Sarno et al., 2023; Zha et al. 2025), secondary school students (Batunan, 2023; Chimeva & Trenchs-Parera, 2024; Pennock-Speck & Clavel-Arroitia, 2018) and even more with university students (Emir & Yangin-Ekşi, 2024; Tecedor & Vasseur, 2020; Uzun et al., 2020).

Regarding Collaborative Online International Learning (COIL), although most studies focus on high school or university students (Blair, 2021; Castro et al., 2023; Ingram et al., 2021; Romero-Rodríguez et al., 2023), these experiences are useful to inspire projects in

primary school, thanks to their replicable approaches and their aim towards the development of intercultural skills from an early age.

Similarly, studies that integrate the telecollaborative methodologies, and foster the intercultural dimension have been implemented at international (Gutiérrez & Ellis, 2020, Harris et. al., 2021; Okumura, 2020; Zorba & Cakir, 2019), national (Castañeda, 2012; Garzón-Díaz, 2021; Ramírez-Lizcano & Cavrera-Tovar, 2020; Rodríguez & Ruíz, 2017), and local (Castañeda, 2022; Castro, 2022; Fernández, 2017) levels. These studies are addressed in greater depth below.

International research

Harris *et al.* (2021) carried out a successful COIL experience between 17 American students from SUNY Oswego in New York and 18 Dutch pupils from the University of Applied Sciences in The Hague in the Netherlands during the COVID-19 pandemic. This qualitative case study aimed at developing learners' global perspectives and gaining cultural awareness to become responsible global citizens. Students participated in various health promotion tasks through virtual modalities in six weeks, using the Blackboard platform.

In Harris et al's experience, teachers based their courses on three fundamental pillars: pedagogy, intercultural learning, and technology. Emphasis was placed on developing a collaborative project in which participants used technology to exchange cultural and experiential ideas. For the implementation of this COIL proposal, the authors assigned small and diverse tasks to the participants to compare and contrast aspects of physical activity, behavior, and nutrition between both countries. These tasks included sharing photos and videos of the target population, participating in virtual meetings to discuss behavioral factors, critically analyzing each country's government health guidelines, among others. Data were gathered through surveys, reflective journals, interviews, and project outcomes, focusing on

students' perceptions and intercultural engagement.

The results indicated that students gained a better understanding of global governance systems and adequate knowledge of conflict resolution in the area of societal health. Additionally, they forged interpersonal relationships by working as a team with participants from another university, negotiating meanings virtually, and increasing intercultural awareness and online intercultural communicative competence.

Harris *et al.*'s (2021) study is a fundamental background for my work, since in the process of creating the COIL module, the authors take into account aspects such as pedagogy, intercultural learning, and technology. Moreover, they include comparison and contrast tasks which are very similar to the ones of my research. Additionally, in theoretical terms, the contributions were also significant since both Gutiérrez and Ellis (2020) and Harris *et al.* (2021) address one of the fundamental pillars of my research work: COIL. On the other hand, it would be interesting and important to rethink the intervention time of the second study, since six weeks could be a short time to develop or increase the participants' intercultural awareness.

COIL is a relatively new approach that has gained strength in recent years. This is why the work carried out on COIL experiences, as a recent teaching methodology for foreign languages and the development of intercultural competencies, is of vital importance. It provides the opportunity to mainly recognize methodological elements and the most important theoretical references in this field. Moreover, advice for future similar proposals is valuable and important because of its emerging nature.

Okumura (2020) developed a telecollaborative project integrating Social Studies and foreign language education. This study was carried out with 32 Japanese elementary participants and 70 Australian primary school students, as telecollaborative partners, to

trigger intercultural understanding (IU). The objective of this research was to foster participants' interest in learning their own and a foreign language, as well as their IU, through an educational social network called Edmodo (a platform that was closed in 2022).

Data was gathered through an initial questionnaire focused on information about students' English level, their interest in the international partners' cultural expressions, and their experience using social networking sites, such as Edmodo. The Edmodo platform was used to share information about Japanese and Australian cultures and to create discussion spaces. This project also addressed activities for exploring and presenting cultural events, writing texts in English and analyzing Australian culture. Information about participation interests, language use, and cultural understanding was collected through field diaries, students' artifacts, and participant teachers' comments on Edmodo.

The results report that the implementation of the telecollaborative project allowed Japanese participants to be more motivated to learn English and foster intercultural understanding. Participants were able to identify similarities and differences from both cultures. In addition, a greater interest in Australian culture on the part of Japanese students was evident, as an opportunity to have greater cultural openness. According to the author, telecollaboration can be an excellent way for students to develop IU and improve their learning of a foreign language through virtual tools. However, it is necessary to invest an adequate amount of time for it to be truly beneficial.

Okumura's (2020) study is relevant to my research because it focuses on the development of students' IU through telecollaboration in elementary school. A key element for my research, since primary school is a little explored field on this topic. Likewise, Okumura (2020) addresses computer-mediated communication (CMC) tools from an intercultural perspective for language learning. This is an opportunity to promote cross-cultural practices, carrying out synchronous and asynchronous activities. The above is similar

to the type of activities that are developed in my study and the role they have in telecollaborative experiences like COIL.

In the same line, in Turkey, Zorba and Cakir (2019), presented a case study to enhance 32 Turkish secondary school students' intercultural awareness. The study aimed at raising students' intercultural awareness after an 8-week implementation of English language coursebooks with cultural elements incorporated. Qualitative data were collected through semi-structured interviews, observations in class, and coursebook analysis. For quantitative data, the researchers applied an initial and final questionnaire.

Results showed, through the analysis of coursebooks, that the information given about culture was not always true. Moreover, the authors found problems related to grammar-based instruction and lack of a clear approach to address cultural topics which hinders students' intercultural awareness. Finally, after the telecollaborative experience, students were more motivated and interested in learning about other cultures and theirs.

The last two works represent a great contribution to my research project, since they are the mirror of what the participants in my study were expected to achieve. Likewise, they are greatly related to the duration of the COIL module, the school context in which they are developed and the data collection instruments.

National research

In the national field, there are fewer studies about telecollaboration at school level. However, authors such as Ramírez-Lizcano and Cavrera-Tovar (2020) carried out a study focused on EFL learners' perceptions of language learning and culture when using telecollaboration. They explored how students related language learning to cultural aspects, emphasizing on the importance of understanding one's own and the target language cultures. Ramírez-Lizcano and Cavrera-Tovar's research was developed with 6 sixth graders from a

private school in Rivera, Colombia and two international partners: one from Sweden and the other one from France. The close relationship between the previous study and my research represents a solid foundation and guide to continue working on telecollaborative alternatives in the classroom.

On the other hand, as an important element for this research, intercultural awareness in schools has been mostly addressed with teenagers when using content-based materials and CLIL-based environments. These studies aim at integrating content (i.e. culture, science, etc.) and language in EFL lessons; and they also evidence how students perceive foreign cultures and stress the importance of integrating cultural aspects into EFL lessons (Castañeda, 2012; Garzón-Díaz, 2021).

In this regard, authors such as Rodríguez and Ruíz (2017) also addressed the impact of video calls on EFL secondary students' intercultural awareness. One of the main objectives was to design, implement, and analyze oral interactions mediated by video calls to observe their effect on the development of learners' awareness when learning English as a foreign language. The proposal was based on Blended Learning, integrating the Task-Based Learning approach. This was a qualitative study, framed within an action research methodology, and analyzed from a Grounded Theory perspective. Findings suggest that video calls with teachers from abroad provided key elements to students for increasing their intercultural awareness and their oral skill effectiveness. Although the studies described were not developed in elementary schools, they provide valuable input and information about learners of similar ages to the participants of this study.

Gutiérrez and Ellis (2020) carried out two COIL experiences between Universidad del Rosario (UR), Colombia and the American University of Cairo, Egypt (UAC). One of these telecollaborative experiences was conducted between February and May 2019 in an undergraduate course with 11 psychology students at UR, and 18 psychology students at the

UAC. The second experience was carried out from February to May 2020 with 20 UR students, and 20 from the UAC. All UR students were Colombian.

The classes were developed simultaneously using Zoom video conferences between both universities over 16 weeks. Various pedagogical practices were used during the semester, among them the following stood out: Zoom classes in real time, virtual forums, and group work between students from both universities, among others. This collaborative work resulted in the writing of reflective essays on topics covered in the course, such as violence, peace, and the armed conflict.

The practices mentioned above allowed students to take ownership of the themes and develop successful international interactions. In this way, learners provided a particular experience of developing intercultural competencies from the field of psychology. Competencies that made them reflect on building peace among countries and cultures that are going through mental health issues related to multiple and diverse types of violence.

Gutiérrez and Ellis' (2020) work is related to my research because of the type of methodology and its research aims which addressed the intercultural dimension. However, a big difference was found in the type of population with which the COIL experiences were carried out; Gutiérrez and Ellis' (2020) worked with undergraduates, while my participants were 5th graders, so there is a wide gap between the maturity levels of the research learners.

Local research

In the local domain, there are few studies addressing telecollaboration and the development of intercultural awareness at school level. In fact, most previous experiences at local level correspond to master's degree and doctoral dissertations where authors analyzed pre-service English teachers in a university from Cali (Castro, 2022; Fernández, 2017). These

works were implemented in a closer context to mine, and they integrated the telecollaborative and intercultural dimensions.

Fernández (2017) conducted a qualitative study in which he analyzed the semiotic design of Livemocha (a social networking site for language learning that operated according to the principles of Tandem Learning and closed in 2016) and the experiences of students who used this platform to learn languages. Tandem learning refers to an approach to language learning in which two people with different native languages are paired to assist each other in language learning. This approach is based on the principles of reciprocity and autonomy (Lewis, 2003). Through surveys, diaries, focus groups, and observations, their perceptions and interactions were explored along with Livemocha's semiotic structure through images and multimodal documents from the website. The results show that Livemocha favored the development of Intercultural Communicative Competence (ICC), especially in terms of attitudes, knowledge, and interaction skills. The analysis reveals the need to promote critical skills, in addition to questioning the dominance of hegemonic linguistic models in teaching.

In her research, Castro (2022) explored how a multiliteracy pedagogy influences the development of intercultural awareness in preservice teachers. The study was conducted with twelve students from a public university in Colombia, using a qualitative and interpretive approach. Using multimodal tasks and global literacies, the personal experiences were linked to the collective ones. The results showed that this connection favored the understanding of topics such as ethnicity, gender, disability, and class. Thus, the preservice teachers broadened their view of nationalism toward a more intersectional perspective of the other.

Castañeda (2022) focused on strengthening intercultural awareness in English classes through interactive oral activities with an intercultural focus. This study reports on a pedagogical intervention that integrated English content with topics from other areas of the school curriculum. It was developed with 22 9th grade students at a public school in La

Cumbre, Valle del Cauca. Using a mixed-method action research methodology, activities were proposed to promote oral expression in English, supported by the use of cell phones in an educational alternation model. The results allowed for an examination of the levels of intercultural awareness and oral proficiency. At the end of the process, positive progress in intercultural awareness was evident, although no significant improvements were observed in their oral production. Although the participants of this study are not primary school students nor are they the same age as the students in my study. It is a research developed at school level, with a similar number of students, and with under-age children.

These international, national and local studies reviewed two of the main topics addressed in my research proposal: telecollaboration and the intercultural dimension allowed finding great contributions. Although these telecollaborative experiences are implemented in different contexts, the objectives to be achieved converge in students to develop intercultural competences, empathize with people from other countries or contexts, and even, open their perspectives to understanding and solving conflicts. In methodological terms, these works shed light on how to integrate and leverage new collaborative methodologies and the intercultural dimension with different age populations. Furthermore, although these studies develop the topic of this research, none of them has addressed COIL and the development of intercultural awareness in elementary school.

Conceptual framework

This study adopts a critical intercultural approach that encompasses the intercultural awareness model proposed by Baker (2011) for the development of intercultural skills through the use of the COIL methodology. For this reason, three main axes are addressed in this section: Critical Interculturality, Telecollaboration, and Project-Based Learning, through some core constructs with their features and affordances in ELT that are reported below, such as: culture, interculturality, intercultural awareness, intercultural language teaching, and COIL.

1. Critical interculturality

1.1 Culture

Culture has been studied from different perspectives. By the end of the nineties, the concept of culture was permeated by historical, subjective and co-constructed views. Kramsch (1998) defined this concept as the idea that belonging to a discourse community means being part of a group that shares a similar social background, historical experiences, and common ways of imagining the world. Even after individuals leave that community, they often continue to carry with them a shared framework for understanding, valuing, judging, and behaving, no matter where they go. This perspective locates culture as a social factor that shapes people's ways of thinking and acting.

Álvarez and Bonilla (2009) highlight a fundamental aspect in the concept of culture, "it is not a monolithic or a static phenomenon; on the contrary, dynamism is one of its main features" (p. 161). Dynamism allows culture to be a changing entity or reference framework in which people negotiate different common factors, such as beliefs, traditions, and lifestyles, among others, within a community (Baker, 2015). In this way, culture may be seen as a set of

accepted, respected, and recognized tangible and intangible elements shared by a group of people in a territory.

The spheres of culture, society, and the individual are constantly interacting. The sphere of culture is a changing phenomenon that is updated in society every day, and it is related to inheritance and it allows learning about and understanding the world. Moreover, the bustling interaction between culture and society involves the subject's sphere which is affected by the other two domains (Álvarez & Bonilla, 2009). This interaction represents the basis for individuals to build themselves as social and cultural agents, and helps them fit and unwrap in their community. Also, this interchange broadens their minds and fosters respect towards the particular ways in which another society lives and perceives the world, giving way to intercultural interactions/relationships.

1.2. Interculturality

For the past few decades, interculturality (as a field of research in humanities and a political proposal) has been a key concept that has gained more and more strength. Interculturality has not only formed an important part of an increasingly globalized world, but it has also influenced how people relate to each other. Moreover, interculturality from a critical perspective fights ethnocentrism, which leads to developing a general comprehension of cultures and recovering the discourse of humanistic values (Trujillo, 2002). In the same line, Liddicoat and Scarino (2013) claim that “interculturality is not a passive knowing of aspects of diversity but an active engagement with diversity” (p.61). Hence, interculturality cannot be conceived as a set of isolated aspects, but as an integrating amalgam of multiple elements that allow reducing the gap that exists between two or more different cultures.

In that regard, Álvarez and Bonilla (2009) express that it is important to locate the

comprehension of the following two concepts: “Myness” and “Otherness”. The concept of Myness refers to “who I am as a cultural subject” and the Otherness to “a perspective that accounts for what the other culture and its cultural subjects are.” (p.163). The latter allows people to acknowledge and understand the existence of another culture’s point of view. In this research, the concept of “myness” fosters students to recognize their cultural identity; while the idea of “otherness” encourages learners to value the cultural differences of their international peers. This understanding is also a way of respecting other cultures’ diversity and fostering intercultural awareness, a fundamental concept for this research.

Walsh (2009) classifies interculturality into three types: functional interculturality, critical interculturality, and decolonial interculturality. The first concept seeks to integrate different cultural groups within a social system that does not seek to transform itself. It is a vision that, aligned with multiculturalism, promotes coexistence in diversity, but without questioning or altering power structures or colonial legacies. In practice, it tends to favor the interests of the neoliberal model and the dominant group.

Critical interculturality is proposed as a transformative alternative to mere coexistence between cultures. Its objective is to question and change the social, political, and knowledge structures that produce inequalities. From this perspective, interculturality is a political practice that seeks to confront the colonial legacy and foster processes of decolonization at both the social and epistemic levels. Regarding decolonial interculturality, this approach goes beyond the critical approach because it proposes a profound restructuring of ways of knowing and relating. It is based on the worldviews and knowledge of historically marginalized people and proposes a transformation of the state and cultural frameworks from a decolonial perspective, which challenges and replaces the frameworks imposed by colonialism.

Walsh (2012) also proposes a matrix of colonialism, which includes four types:

coloniality of power, coloniality of knowledge, coloniality of being, and cosmogonic coloniality. First, the coloniality of power refers to a way of organizing people according to the nation-state and global capitalism, racial criteria, and economic exploitation, placing certain groups as superior and leaving others at a disadvantage. This order sustains relations of domination within the global capitalist system, defining social and economic roles based on inequality. Second, the coloniality of knowledge consists of imposing a Western and European form of knowledge as the only valid one, leaving out other forms of knowledge. This vision rejects and minimizes the traditional, spiritual, and ancestral knowledge of non-Western peoples, considering them unserious or without academic value.

As a third axis, Walsh (2012) describes the coloniality of being, which refers to how certain groups have been viewed as inferior or less human due to their race or culture. More specifically, this concept refers to how colonialism shapes subjectivity, identity, and existence (Fanon, 2009; Maldonado-Torres, 2008). This idea justifies excluding, marginalizing, or less valuing them as complete persons, denying them recognition and full participation in society. Finally, cosmogonic coloniality implies denying the validity of spiritual relationships and the way many cultures understand life and nature. A rational and binary way of seeing the world is imposed, which leaves out the sacred connection between humans, nature, and the cosmos that indigenous cultures have.

Based on the above, it is necessary to break with existing forms of colonialism to build more critical, inclusive, and human educational visions. This break not only entails recognizing the existence of these colonial logics, but also rethinking our curricular, pedagogical, and epistemological practices. In this way, the curriculum must be transformed into a tool that promotes epistemic justice, respect for cultural diversity, and intercultural dialogue. Furthermore, it is worth highlighting that the perspective adopted in this study is

based on critical interculturality, and the construct it proposes to address focuses on the development of intercultural awareness as a starting point. Intercultural awareness aims for this critical perspective and a discovery of one's own and other cultures through agency, critical evaluation, and social transformation.

1.3. Intercultural awareness

Beyond just recognizing similarities and differences between two or more cultures, it is necessary to understand and respect them, which occurs through intercultural awareness. According to the CEFR (2001), intercultural awareness is proposed as the “knowledge awareness and understanding of the relation (similarities and distinctive differences) between the ‘world of origin’ and the ‘world of the target community’...” (p.103). Furthermore, intercultural awareness implies understanding another community beyond the apparent “similarities and differences”. That idea means to go deeper into more detailed dimensions, such as practices, attitudes, and abilities, among others, that truly weave and permeate culture in a real context (Byram *et al.*, 2002; Baker, 2011).

Byram (1997), in his model of intercultural communicative competence (ICC), conceives intercultural competence as a fundamental part of communicative competence. Intercultural competence, in turn, is made up of five key components: [1] Attitudes: it refers to a person's openness and preparation to engage with individuals from different cultural backgrounds and worldviews [2] Knowledge: it involves understanding the facts, symbols, practices and viewpoints of one's own culture and that of others. [3] Skills of interpreting and relating: They are linked to the ability to fathom, make sense, and connect cultural documents and events from several cultural contexts. [4] Skills of discovery and interaction: these skills combine attitudes and knowledge to help learners explore and engage with different cultural perspectives. [5] Critical cultural awareness: it enables learners to evaluate and reflect on

cultural materials and experiences, creating their own informed opinion. The last component aligns with Baker's (2011) concept of intercultural awareness, as both focus on critical reflection, questioning cultural representations, and intercultural ethics. These models seek to develop active and conscious intercultural citizens, not just observers of other cultures.

Baker (2011) defines intercultural awareness as the mindful recognition of how cultural norms, behaviors, and perspectives can influence communication between individuals from different backgrounds. It also includes the capability to adapt and apply this understanding effectively during real-time interactions, taking into account the specific context. In addition, intercultural awareness involves recognizing various items related to the understanding of cultural phenomena which are organized in three levels: Level 1: Basic cultural awareness; Level 2: Advanced cultural awareness; and Level 3: Intercultural awareness. Within these levels, 12 descriptors complement what was exposed by Byram (1997) about critical cultural awareness, to implement them in communicative intercultural situations using English as a vehicular language (Baker, 2011). Below is a compilation of Baker's (2011) three levels of intercultural awareness and their corresponding descriptors:

Table 1

Levels of intercultural awareness

ICA levels	Descriptors
Level 1: Basic Cultural Awareness	Descriptor 1: an awareness of culture as a set of shared behaviours, beliefs, and values.
	Descriptor 2: an awareness of the role culture and context play in any interpretation of meaning.
	Descriptor 3: an awareness of our own culturally induced behaviour, values, and beliefs and the ability to articulate this.
	Descriptor 4: an awareness of others' culturally induced behaviour, values, and beliefs and the ability to compare this with our own culturally induced behaviour, values, and beliefs.

	Descriptor 5: an awareness of the relative nature of cultural norms.
	Descriptor 6: an awareness of cultural understanding as provisional and open to revision.
Level 2: Advanced Cultural Awareness	Descriptor 7: an awareness of multiple voices or perspectives within any cultural grouping. Descriptor 8: an awareness of individuals as members of many social groupings including cultural ones. Descriptor 9: an awareness of common ground between specific cultures as well as an awareness of possibilities for mismatch and miscommunication between specific cultures.
	Descriptor 10: an awareness of culturally based frames of reference, forms, and communicative practices as being related both to specific cultures and also as emergent and hybrid in intercultural communication.
Level 3: Intercultural Awareness	Descriptor 11: an awareness of initial interaction in intercultural communication as possibly based on cultural stereotypes or generalizations but an ability to move beyond these through. Descriptor 12: an awareness of a capacity to negotiate and mediate between different emergent socioculturally grounded communication modes and frames of reference based on the above understanding of culture in intercultural communication.

Note. Adapted from Baker, W. (2011).

Baker (2011) describes three progressive levels of intercultural awareness (ICA). Each one of them represents a deeper understanding to engage effectively in intercultural communication:

- **Level 1: Basic Cultural Awareness (BCA):** At this stage, individuals become aware that culture shapes shared behaviors, beliefs and values. They begin to understand how both culture and context influence the way meaning is constructed. People at this level are also able to reflect on and describe their own cultural practices and compare

them with those of other cultures.

- **Level 2: Advanced Cultural Awareness (ACA):** This level focuses on understanding that cultural norms are relative rather than absolute standards. People understand that cultural knowledge is open to reinterpretation. Moreover, they appreciate the presence of different points of view within cultural groups and recognize that individuals belong to multiple cultural and social communities. It is important to highlight that they can identify similarities and potential areas of misunderstanding between specific cultures.

- **Level 3: Intercultural Awareness (ICA):** At the most complex level, individuals realize that cultural frames, communicative practices, and reference points are shaped by both different cultural traditions and hybrid influences. This awareness includes the ability to engage in interactions that may begin with stereotypes or generalizations, but also the flexibility to mediate and negotiate across emerging cultural contexts.

These levels reflect a progression from a basic, static understanding of cultures to a more flexible and dynamic competence that enables individuals to negotiate complex exchanges. Furthermore, the descriptions that each level houses allow addressing different cultural visions within the classroom, promoting an intercultural language teaching. It is also important to highlight the connection between intercultural awareness and COIL. This methodology plays an important role fostering this type of awareness in young learners, who can enhance their intercultural skills through this telecollaborative alternative in similar contexts to those of this research.

1.4. Intercultural language teaching

Recognizing interculturality in the EFL classroom implies adopting an intercultural

view in ELT. This perspective focuses on specific interpretations of “language” and “culture” and their interconnections (Liddicoat & Scarino, 2013).

Authors such as Byram (1997) and Liddicoat (2008) have presented proposals related to the intercultural approach. Byram (1997) develops an intercultural communicative competence model in which he explains his concept of culture, intercultural communication, the functions of intercultural speakers and the five ICC components. In the same way, Liddicoat (2008) proposes four processes that might appear to foster the development of intercultural language learning: noticing, comparing, reflecting and interacting.

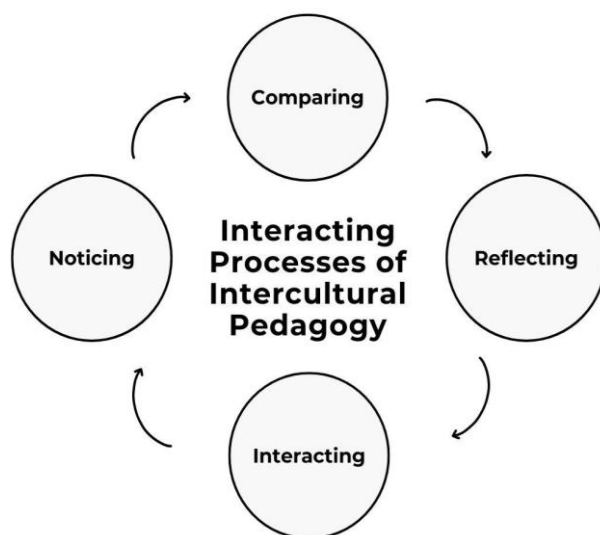
In intercultural language learning, learners need to notice similarities and differences that are evidenced through language. The new information that students receive is “translated” in their own terms, thus, obtaining a closer understanding of cultural phenomena. In the comparison stage, students go beyond identifying similarities and differences, in order to establish correlational categories between their own cultural background and the target culture, taking into account the knowledge they already have about the others’ cultures and the new information they just noticed. Comparing similarities and differences from that perspective allows students to reflect, an enriching process in which learners interpret experiences in a personal manner. Hence, students reflect on what they addressed in their encounters with people from different cultural and linguistic backgrounds. So they take into account reactions, thoughts, emotions and strategies. After passing through these stages, Liddicoat (2008) affirms that it is necessary to wrap them up with the interaction process, in which intercultural learners must actively participate in interactions based on their learning and experiences to develop personal interpretations about them; then communicate, explore, and adapt those experiences in light of others’ perspectives.

This intercultural perspective of language teaching and learning allows us to integrate

the intercultural dimension in the classroom. In this study, these four processes are directly related to the designed COIL module. First, in the noticing process, students observe cultural similarities and differences in interactions. Second, participants consciously compare their practices with those of the other group. Third, participants seek to understand why these differences or similarities exist, leading to the interpretation of the cultural phenomena encountered. Finally, participants reflect on their own beliefs, customs, and possible changes in attitude between both communities through the interactive element of COIL. Although these processes do not always develop linearly, it is possible to observe the diverse manifestations of intercultural awareness that emerge and are transformed through them during the intercultural telecollaboration experience with fifth-grade students. In this way, the Interacting Processes of Intercultural Pedagogy (see [Figure 1](#)) presented by Liddicoat (2008) turn out to be a core element to work on the young students' intercultural awareness in the classroom.

Figure 1

Interacting Processes of Intercultural Pedagogy



Note. Adapted from Liddicoat, A. (2008).

Addressing Liddicoat's (2008) four processes in this telecollaborative pedagogical proposal is important since they contribute to working on children's intercultural awareness at an early age. Students were encouraged to observe differences without judgment and begin to develop empathy and respect for other ways of living, thinking, and acting. Critical thinking and the development of global citizenship converge so that participants go beyond the superficial layers of cultural awareness and start to question stereotypes and recognize that no culture is better than another, but rather different. Therefore, developing the aforementioned processes not only allows students to take an active role and position themselves as members of a local and global community, but it also motivates them to take action and transform their environment.

2. Telecollaboration

Beyond promoting the use of intercultural approaches to language teaching, it is becoming crucial to create real connections that help students experience and understand what these approaches aim to teach. Hence, educational approaches such as telecollaboration play a fundamental role in intercultural language teaching. According to O'Dowd (2013), telecollaboration refers to the integration of online communication technologies to link classrooms across distant locations, allowing students to improve their linguistic and intercultural skills through task-based collaboration and project-oriented activities. Thus, telecollaboration encompasses a wide variety of different possibilities for people to get closer, meet and interact with each other. Moreover, this idea increasingly contributes to the needs that the globalized world demands, specifically in EFL classrooms; where promoting intercultural skills is a fundamental aspect to achieve intercultural awareness.

In the same way, Guth and Helm (2010) and O'Dowd (2007) define telecollaboration as an online interaction where two groups that are geographically separated engage in virtual

exchange. Nonetheless, not all virtual exchanges refer to telecollaboration. This term goes beyond a mere conversation online; it involves mutual reflection spaces through virtually mediated environments. In this way, O'Dowd and Waire (2009) point out that telecollaboration exchanges work as a tool to virtually communicate with students around the world and allow the development of interaction and mediation strategies. In the range of telecollaborative possibilities, there are emerging and novel alternatives such Tandem learning, Mirror courses, or COIL methodology (Collaborative Online International Learning), a key concept for this study.

2.1. Collaborative Online International Learning (COIL)

COIL is recognized as a recent method for promoting intercultural learning among students from several parts of the world (Rubin, 2017). This emerging methodology relies on a social-constructivist approach within the educational paradigm and emphasizes the importance of learning through social interaction. Furthermore, it allows students to enhance the development of intercultural competence (Guth & Rubin, 2015). In this regard, Ceo-DiFrancesco and Bender-Slack (2016) express that “COIL is not an educational theory. It can be viewed as a method utilized to virtually link two institutions to encourage cross-cultural interactions among students and professors.” (p. 148). This methodology increases the possibility of contact between different places worldwide, providing tools to design international courses and learning experiences. They allow students not only to get in touch with people but also develop intercultural competences with the use of virtual, multicultural, and shared learning settings.

In COIL, students may be enrolled in certain courses that belong to any discipline at their home institutions in different parts of the world and their respective professors evaluate them. These courses follow a collaborative nature when teachers design and build an online

module that allows them to take into account and relate their learning objectives, tasks, and even projects of students in both institutions. The modules' length can vary depending on the learners' specific needs: from four weeks to an entire semester. Likewise, the modality used to develop them depends on the flexible nature of COIL, for example, it can be integrated into face-to-face, blended, or fully online courses. They may use both synchronous and asynchronous interactions, depending on factors such as academic calendar, time zone differences between countries and students' learning objectives (Rubin & Guth, 2015). These courses allow learners to achieve a greater understanding of concepts and written productions while offering interaction spaces to enhance cross-cultural proficiency, teamwork, and problem-solving abilities. Moreover, these collaborative initiatives foster invaluable opportunities for people to engage in internationally-oriented professional development (SUNY COIL, 2024).

This virtual alternative provides a novel, flexible, and enriching way to develop or strengthen intercultural competencies and global perspectives that may seem difficult to achieve in a classroom. Likewise, it broadens not only students' outlook on other cultures but also their curiosity and interest in learning, participating and interacting with people from different origins and cultural backgrounds (Gulbahor, 2023; Liu, 2023; O'Dowd, 2018).

In this vein, the COIL methodology provided participants with an authentic space for intercultural interaction, where they could get in touch with people from different backgrounds. However, to further enhance these interactions and ensure they were not isolated activities, this methodology was articulated with the principles of Project-Based Learning (PBL). In this way, the telecollaborative intercultural exchange was not only a means of communication but also the central axis of a project in which students had to complete authentic tasks, foster collaboration, and develop their intercultural awareness.

3. Project-Based Learning

Project-based learning (PBL) is a valuable strategy for fostering the development of 21st-century skills and learning, especially in future-oriented teaching in school education. This approach is based on the development of class projects and it places the student at the center of the process, promoting a dynamic focused on problem-solving (Markula & Aksela, 2022). In this sense, the expected knowledge and skills emerge as students carry out the group projects (Condliffe et al., 2017; Parker et al., 2013). In this way, project-based learning can be understood as a collaborative teaching method based on inquiry, integration, application, and construction of knowledge by students when working in groups to find solutions to complex problems (Guo et al., 2020).

According to Llosco (2015), project-based learning is distinguished by its practical approach and its connection to real-life issues related to our socio-educational contexts. Learners are the protagonists of their own learning, with the teacher acting as a guide. This approach responds to the pupils' needs and seeks to generate a final product to be critically evaluated. It is oriented toward the development of key competencies and encourages collaborative learning, integrating knowledge from different disciplines. The learning process is organized in stages, with formative assessment spanning the entire project.

In this research, COIL was used from a project-based learning perspective, as a 10-week module was designed to address topics related to two axes: environmental and cultural issues. During these sessions, students developed short activities that guided them to the creation of three products that were used in each synchronous meeting with their international peers: an environmental poster; a written text on values, behaviors, and beliefs; and finally, a video on the carbon footprint. These artefacts not only followed the curricular guidelines stipulated by the Fray Damián school, where this study was implemented, but also

encouraged individual and collective work that contributed to intercultural dialogue in interactions with Wisconsin peers.

Research design

In this section, the type of study, the context, the participants and the data collection techniques-procedures are described.

4.1. Methodological design

This study is conducted as a mixed-method study with a pragmatic action research design. According to Hernández-Sampieri and Mendoza (2018), mixed-method research is characterized by an orderly and rigorous integration of quantitative and qualitative methods. This combination allows for the collection and analysis of different types of data to produce meta-inferences that provide a broader and deeper understanding of the phenomenon under investigation.

The authors emphasize that this mixed-method approach takes advantage of both methods: the precision of quantitative data, as well as the detailed and contextual understanding of qualitative data. This combination helps overcome the limitations of each approach separately. In this research, quantitative data were gathered through questionnaires to identify the participants' intercultural awareness level. Likewise, during the implementation of the COIL module, qualitative data were collected to analyze the learners' views about intercultural and environmental phenomena.

Burns (2010) defines action research as a cyclical process in which teachers identify a problem in their practice, propose an intervention, implement it, observe the results, and critically reflect. This approach seeks to improve teaching in real-life contexts, not create generalizable theories. Furthermore, action research transforms teachers into researchers of their own practice, transforming the classroom into a space for constant improvement and mutual learning. This study follows the characteristics of action research because it identifies

a problem in the context, in this case, the lack of integration of a telecollaborative methodology with the intercultural dimension that allows for working on students' intercultural awareness. Then, the COIL module is designed and implemented; and finally, the researcher critically analyzes the results of the intervention.

Furthermore, this work is grounded in the principles of the pragmatic paradigm, which emphasizes the practical consequences of research and the usefulness of findings in solving real-life problems, rather than strictly following a single methodological tradition. This paradigm values flexibility, combining both qualitative and quantitative approaches when necessary, and selecting methods based on their effectiveness in answering research questions. Pragmatism assumes that reality is not fixed but is continually constructed through actions and their outcomes (Creswell, 2007). This study adopts the pragmatic paradigm because it not only seeks to understand the development of intercultural awareness but also to offer applicable contributions that improve pedagogical practices and inspire future implementations.

4.2. Context

The Fray Damián González School is located in the department of Valle del Cauca. This is a private, Catholic school governed by the values of the Franciscan Order. Therefore, the students observed here are in a context where respect for norms and values prevails, as well as the support of most parents. The school offers early childhood, basic elementary school, secondary, and intermediate levels. The institution has 1 principal, 3 coordinators, 55 teachers, and approximately 1.000 students.

Regarding the teaching of foreign languages, Fray Damián González school aims at achieving national recognition for bilingualism (English-Spanish). For this reason, its curricular structure seeks to ensure that its students develop communicative and global skills

in English, enhancing language development in environments that strengthen the teaching-learning process. The school is committed to national bilingualism based on immersion in basic areas of knowledge, such as Math, Science, Global Perspectives, among others, at levels A1, A2, and B1 of the Common European Framework of Reference for Languages (CEFR, 2001) and the National Bilingualism Plan 2018-2022. Among the general and specific objectives stipulated in the school's English language area plan are:

General objective of the area¹

To guide the English language as a foreign language through the implementation of a communicative approach, developing critical thinking through active strategies with a Franciscan imprint, to develop competent students who can respond to the current needs of society.

Specific objectives of the area

- To provide ideal learning spaces where students interact in English as a foreign language, taking advantage of institutional resources.
- To design activities that enhance the use of the four communicative skills (listening, speaking, reading, and writing).
- To promote improved results on state tests by monitoring internal tests and the actions taken as a result.
- To promote Franciscan values through a culture of dialogue and respect that integrates knowledge.

Based on global dynamics, Fray Damián González school seeks to adopt a fully communicative methodology for teaching English as a foreign language, known as

¹These objectives were taken from the Fray Damián School's English area curriculum (2025). They were translated into English by the researcher.

Communicative Language Teaching. This approach, combined with a dynamic project-based approach to teaching, called Project-Based Learning, results in an integrative methodological proposal, with a core element known as CLIL (Content and Language Integrated Learning). All of the above combines to develop students who understand the importance of communicating English.

The classroom-energizing project seeks to engage students directly with knowledge and build their worldview through English as a foreign language, through research and socialization. In early childhood education, the "Mr. Rainbow" project stimulates imagination and a love of reading through storytelling. This project also strengthens listening comprehension and prepares learners for oral production. This project is divided into four phases: The World of Toys; The Planet of Animals; The Nest of Fun; and A Fairy Tale.

In primary and secondary education, the project is called "Fluency Fusion," which is aligned with the Millennium Development Goals and Franciscan values. This project promotes critical thinking and independent learning in English, developing in four stages:

- **Grades 1, 2, and 3 - "Speak Challenge":** It introduces students to the use of the foreign language through songs, games, rounds, and commands that encourage the production of monologues, first through repetition and then through appropriation.
- **Grades 4 and 5 - "Future Speakers":** It provides practical experiences close to real-life contexts, using authentic materials that encourage integration through the foreign language.
- **Grades 6, 7, and 8 - "Speaking Edge":** This phase consists of a set of experiences that stimulate the generation of individual opinions supported by arguments. It also features a research-based approach that fosters fluent oral expression.

- **Grades 9, 10, and 11 - “Good Readers, Good Leaders”:** This stage completes the “Fluency Fusion” cycle with the goal of strengthening leadership and the ability to address global issues. Reading and research allow students to share ideas and thoughts spontaneously, using English as their primary tool (Fray Damián González School, 2025).

Regarding the evaluation of these pedagogical strategies, the school has a bilingualism manager, who is responsible for conducting periodic classroom observations and, based on a rubric designed for different aspects of the class, conducts the respective assessment, and then provides feedback to each English teacher (aspects to highlight and improve). However, it is worth mentioning that, although the area plan (syllabus) stipulates each of the projects to be carried out in the classrooms, success depends largely on the time it takes to implement them, the students' willingness, their English level, and other factors. This sometimes makes it difficult for the implemented pedagogical strategies to be fully effective.

Among the resources used in the English classroom teachers can use the books *Guess What* in primary school and *Think* in high school; both published by Cambridge. These books are evaluated annually (at the end of the school year) to determine their relevance or whether they should be changed. Regarding technology, each primary and high school classroom has a television, a computer, and internet access. These resources allow both bilingual and monolingual subjects' teachers to rely on digital resources at all times, without the need to move to other classrooms.

4.3. Participants

In Fray Damián González school, there were three 5th grade classrooms, but for this study, the group under research was 5-1. This group was composed of 20 Colombian

Spanish-speaking students (10-11-year-old kids), 4 girls and 16 boys, from medium class (socioeconomic strata 3 and 4). These students were part of the Science class, a class that was taught in English. Two weekly hours were destined to Science lessons. Sometimes, this time was reduced to one or none due to unforeseen events that could arise from the school initiatives, such as Eucharists (Mass sessions), special dates' commemorations, birthdays, among others.

The selection of this sample was due to convenience for the researcher. It was her workplace, which favored access to students and schedules, and it provided a wide knowledge of the context, in terms of educational and social characteristics (Corbetta, 2007; Hernández-Sampieri *et al.*, 2014).

International partners

Initially, the researcher planned to work with a teacher assigned to an 11th-grade class in an American school in the city of Crandon, United States. However, an international advisor and one of the pioneers in the development of COIL and coordinator of this methodology in Oneonta, recommended that the students in the paired groups be of similar ages. For this reason, the researcher was introduced to Rebeca², a teacher from the School District of Crandon (Middle School), a public institution in Wisconsin, United States. Both Rebeca and I were just beginning our approach to the COIL methodology, so this pairing came as an opportunity for both of us to achieve our first remote collaborative project. The design of the COIL module prioritized respect, empathy, and, above all, constant and assertive communication.

²The teacher's name has been changed for confidentiality and anonymity reasons.

The American teacher was in charge of a Spanish club offered by her school with 10 Wisconsin students: seven boys and three girls, ages 12 to 13, who belonged to the middle, working, and lower classes. It's worth noting that attendance at the club was not mandatory, so only eight students (six boys and two girls) decided to stay and continue the Spanish course. This club met four times a week from 14:44 to 15:30 CST (Central Standard Time), and the topics covered were freely chosen, such as United States history, school issues, environmental care, among others.

It is important to clarify that the international partners participated only in the COIL experience, not in the research since the American students' and teacher's aim was only to explore the intercultural online experience. For the purposes of this study, the researcher focused solely on the phenomena encountered in her school context with the Colombian participants. In other words, the telecollaborative partners were purposely selected due to their similar age to the Colombian learners to carry out the COIL experience. However, the students also benefited from the intercultural interaction, as they were able to recognize cultural and environmental similarities and differences with the Colombian learners; as well as put into practice teamwork, patience, and communication.

4.4. Data collection techniques-procedures

The data collection techniques and instruments are the vehicle through which a researcher approaches a particular group or situation to obtain information (Hernández-Sampieri *et al*, 2014). In this study, the researcher used an initial and final questionnaire that provided quantitative data and other techniques to collect qualitative information such as students' artifacts, interviews, and a field diary.

4.4.1. Initial and final intercultural awareness questionnaire

According to Hernández-Sampieri *et al.* (2014), a questionnaire is a “set of questions regarding one or more variables to be measured” (p. 217). Here, questionnaires were used to measure 5th graders’ intercultural awareness levels before and after the implementation of the COIL experience. Both the initial and final intercultural awareness questionnaires were administered in the Science classes during the first (April 1st, 2024) and final (May 29th, 2024) weeks of this COIL implementation, respectively. Twenty-three students completed these questionnaires; however, only 20 were selected due to three families who did not provide informed consent. These questionnaires were administered on paper in two sessions. Each session to complete the questionnaires lasted approximately 15 minutes.

The questionnaire was designed based on Baker’s (2011) Intercultural Awareness model where he presents three intercultural awareness (ICA) levels: Level 1: Basic Cultural Awareness (BCA); Level 2: Advanced Cultural Awareness (ACA); Level 3: Intercultural Awareness (ICA). Due to the students’ age and school level, the questionnaire was designed based on Baker’s Level 1: Basic Cultural Awareness (BCA) (see [Appendix A](#)). Each level proposed by Baker, has four descriptors; for the BCA level, such descriptors are:

- (1) An awareness of culture as a set of shared behaviors, beliefs, and values; (2) An awareness of the role of culture and context play in any interpretation of meaning; (3) An awareness of our own culturally induced behaviors, values, and beliefs and the ability to articulate this; (4) An awareness of others’ culturally induced behaviors, values, and beliefs and the ability to compare this with our own culturally induced behaviors, values, and beliefs. (p. 66)

The researcher took into account the descriptors above for creating the fourteen statements addressed in the questionnaire. Each IA descriptor of level 1 (BCA) was taken as

equivalent to one section and the fourteen statements were organized in terms of cognitive (CD) and pragmatic (PD) dimensions. The cognitive dimension referred to the information about cultural phenomena learners were aware of (Piaget, 1947). Conversely, the pragmatic dimension was connected to the students' reactions and responses towards cultural events based on their knowledge of social norms, practices, and behaviors (Dewey, 1916). Thus the questionnaires' structure is the following: section 1 has four statements (3 CD - 1 PD), section 2 contains three statements (2 CD - 1 PD), section 3 has three statements (3 CD) (Taking into account Baker's descriptors of Basic Cultural Awareness, there were no statements related to the pragmatic dimension in this section); and section 4 contains four statements (3 CD - 1 PD). Learners had to mark how capable they felt of understanding the cognitive statements and of achieving the pragmatic statements from the questionnaire. The design of this instrument required a set of validation processes: expert reviews, piloting, and reliability factor.

According to Creswell (2007), "the use of a pilot test to refine and develop research instruments, assess the degree of observer bias, frame questions, collect background information, and adapt research procedures" (p. 133). Hence, three pilot tests were carried out: two partial pilot tests for clarity of content and one to determine the instrument's reliability. The first two tests were reviewed by ten 5th graders from two groups of fifth graders that did not participate in this study. There were three 5th grade groups, so five learners belonged to group 2 and the other five to group 3. They reviewed the statements and instructions given in the form. In the final reviewing process, 19 students from grade 5-2 took the intercultural awareness questionnaire, and they focused on the relevance and coherence of the items and questions.

Additionally, to verify the reliability of the aforementioned instrument, the results were subjected to statistical tests, specifically: Cronbach's alpha, which yielded a value of

0.790. The above demonstrated the reliability of the instrument, since Cronbach's alpha values must range between 0.70 and 0.90 as indicators of appropriate internal consistency (Cronbach, 2021)

4.4.2. Students' artifacts

According to Aslan (2023), the students' artifacts refer to productions that learners create as a result of an assignment or lesson. For this study, the following productions were obtained: an environmental poster, a paragraph on values, behaviors and beliefs, a mini-questionnaire, and an oral presentation on the carbon footprint:

- **Environmental Poster:** To develop this poster, participants were asked to include a brief self-introduction in English and address the following question: How can you take care of the environment as a student? Learners began this activity in the first session of the COIL module implementation and completed it at home. They were also asked to include a photo of themselves and images related to what they were discussing. This poster was developed before the first synchronous meeting with the Wisconsin students. The idea was to upload this poster to the Padlet platform in advance so that all international peers could view it and thus get to know the Colombian participants before the interaction ([Appendix B](#), [Figure B1](#) and [B2](#)). The same dynamic was carried out by the Wisconsin students. This poster also served as a means to establish prior interaction among students and awaken mutual curiosity and eagerness to interact with each other, since these factors are paramount to initiate cross cultural communication (Byram, 2021; Baker, 2011; Kramsch, 1998)
- **Paragraph on values, behaviors, and beliefs:** To write this paragraph, students formed groups of two or three among their Colombian classmates; then, they were asked to think about an everyday practice or a saying their parents had told them.

After writing it down in their notebooks, the children were asked to identify which values, behaviors, and beliefs were conveyed through the example they had given. This activity was also performed by the American students. Due to the complexity of the activity, the Colombian participants wrote their paragraph in Spanish. This activity took place in two classes during the fifth week of the COIL module and lasted approximately two hours. As with the poster, the students' creations were uploaded to Padlet for viewing by the Wisconsin students, and vice versa (see [Appendix B](#), [Figure B3](#), and [B4](#)).

- **Mini-questionnaire:** During week six of the COIL module implementation, the Colombian pupils held their second synchronous meeting with the Wisconsin learners. After this intercultural interaction, the research students completed a short questionnaire (different to the one about ICA) addressing three key themes: cultural, environmental, and emotional axes in intercultural interactions. Participants were also asked to write down what similarities and differences they had found with their international peers. This questionnaire was administered individually using paper copies and its completion lasted approximately 15 minutes (see [Appendix C](#)).
- **Oral presentation on carbon footprint:** Following the Science syllabus, the topic of carbon footprint was addressed. First, its definition and characteristics were discussed during week eight of the module; between that week and week nine, participants created a poster board on a sheet of cardboard, in which they discussed possible solutions for reducing their carbon footprint. To carry out this activity, the learners brought information and other materials that the researcher had requested in advance. The development of this poster board lasted approximately three sessions (three hours of class-each hour of class lasts 50 minutes). Then, the children talked about their work in English, and the researcher recorded each group's oral presentation to upload

it to Padlet or Google Drive again before the last synchronous meeting with their international peers (see [Appendix D](#)).

Through the students' artifacts the researcher collected information about their experiences, behaviors, attitudes and interactions. Likewise, these oral and written productions allowed analyzing students' intercultural awareness manifestations during and after the COIL experience.

4.4.3. Group interview

Creswell (2007) argues that a group interview is a qualitative data collection technique that consists of a guided conversation with a small group of people. These interviews are especially useful when interaction between participants is expected to generate valuable information; and even more when they share similar characteristics and tend to collaborate with each other. Moreover, interviews are flexible and open instruments. They can be conceived as a meeting to talk and exchange information between the interviewer and the interviewee, whether one or more (Hernández-Sampieri *et al.*, 2014).

The researcher designed an interview consisting of eight open-ended questions. The objectives of this instrument were to know students' opinions after the COIL module implementation and to gather information regarding their intercultural awareness. The researcher conducted three group interviews: two with five students and one with three. The first interview lasted 19 minutes, the second one 41 minutes and, the third lasted 12 minutes; for a total of 72 minutes of transcribed recording. The interview was conducted in Spanish so that participants would feel comfortable answering in their native language. These group interviews were conducted in a different room from the participants to avoid exposure to the noise of the other classrooms in the school. Considering that the students interviewed were between 10 and 11 years old at the time of the intervention, this type of interview was

appropriate for this study. This instrument encourages participants to share their answers more freely as they feel “supported and accompanied” to a certain extent by other peers.

4.4.4. Field diary

According to Creswell and Creswell (2017), in the field diary the researcher “takes field notes on the behavior and activities of individuals at the research site. In these field notes, the researcher records, in an unstructured or semi-structured way activities at the research site” (p. 298). For this research, this procedure allowed the collection of relevant information, such as perceptions, participants’ comments, aspects of the virtual online sessions’ development, among others (see [Appendix E](#)). The teacher’s journal served as an enriching, descriptive, and interpretative source of information.

This instrument was designed virtually in a Word document. This instrument included the following sections: date, number of students observed, class objective, description of class activities, student comments, perceptions revealed in class, difficulties encountered, and other observations. Due to time constraints, the researcher did not always fill in all the fields; she filled in the most relevant ones based on what was observed after each session before, during, and after the implementation of the COIL module.

4.5. Data analysis

Type of analysis

Due to the nature of this study, two types of analysis were conducted: qualitative and quantitative:

4.5.1. Quantitative analysis

To determine the participants’ level of intercultural awareness before and after the COIL module, the researcher used quantitative analysis. This type of analysis follows an

orderly and systematic procedure, based on the collection of numerical data that allows variables to be quantified, descriptive and inferential statistics to be applied, and hypotheses to be tested. Statistical methods are used to detect patterns, establish links between variables, and extend the results obtained to a broader population based on a sample (Hernández-Sampieri & Mendoza, 2018).

To organize the information collected through the intercultural awareness questionnaires, the researcher used two spreadsheets. In one of them, all the information from the initial questionnaire was organized: the values obtained for each question and by student, and the average by question, dimension, and section. In the second spreadsheet, the researcher performed the same process with the data from the final questionnaire. For this part of the analysis, descriptive statistics were applied using Jeffrey's Amazing Statistics Program (JASP). This program included the Paired Sample T-Test and reliability tools.

4.5.2. Descriptive statistics

According to Goss-Sampson (2019), “descriptive statistics and related plots are a succinct way of describing and summarising data but do not test any hypotheses” (p.14). It means that descriptive statistics provides an overview of the data, such as mean, standard deviation, and minimum and maximum results, without issuing any inferential or correlational assessment on the matter. For the purposes of this study, descriptive statistics allowed the numerical data to be organized and clearly presented for integrating with the qualitative findings. This type of statistics was used to analyze and compare the data for each question from the initial and final intercultural awareness questionnaires. The values obtained allowed the researcher to measure the impact of the implementation on the participants' level of intercultural awareness at the beginning and end of the study.

For carrying out the quantitative data analysis, a statistical program was used: JASP whose acronym means Jeffrey's Amazing Statistics Program. According to Goss-Sampson

(2019), “This is a free multi-platform open-source statistics package, developed and continually updated by a group of researchers at the University of Amsterdam.” (p.1). JASP facilitates intuitive quantitative analysis with real-time computing and results visualization. For the purposes of this study, three tools were used: Unidimensional Reliability, Descriptive Statistics, and the Paired Sample T-Test.

4.5.3. Tests of normality

The Shapiro-Wilk test is a statistical test used to assess whether data follow a normal distribution. Its null hypothesis states that the data come from a normal distribution; therefore, if the p-value is less than 0.05, normality is rejected. When the data do not meet this assumption, the use of nonparametric tests is recommended. In this sense, the Wilcoxon signed-rank test is a nonparametric alternative to the t-test for related samples and allows comparing two paired measurements without assuming normality in the data. This test analyzes the differences in pairs of observations and determines whether the median of those differences differs significantly from zero (Goss-Sampson, 2019).

To assess the assumption of normality, a Shapiro-Wilk test was conducted ([Table 2](#)). Since the results of this study suggested deviations from normality, both a non-parametric Wilcoxon signed-rank test ([Table 3](#)) and a parametric Paired-Sample t-Test ([Table 11](#)) were performed. The outcomes of both analyses were consistent, indicating significant differences between pre- and post test scores. Given the robustness and wider recognition of the parametric test, the Paired-Sample t-Test is reported in the results section. However, it is noteworthy that the Wilcoxon signed-rank test yielded similar results, thus strengthening the validity of the findings.

Table 2*Test of Normality (Shapiro-Wilk)*

	COG.D-AV-PRE	COG.D-AV-POST	PRAG.D-AV-PRE	PRAG.D-AV-POST
Valid	20	20	20	20
Missing	0	0	0	0
Mean	5.192	5.367	4.950	5.251
Std. Deviation	0.531	0.569	1.334	0.923
Shapiro-Wilk	0.955	0.874	0.787	0.804
P-value of Shapiro-Wilk	0.445	0.014	<.001	<.001
Minimum	4.170	4.420	1.670	2.670
Maximum	6.000	6.000	6.000	6.000

Note: Significant results suggest a deviation from normality.

Table 3*Wilcoxon signed-rank*

Measure 1	Measure 2	Test	Statistic	z	df	p
CD-AV-PRE	CD-AV-POST	Student	-1.644		19	0.117
		Wilcoxon	50.500	-1.524		0.133
PD-AV-PRE	PD-AV-POST	Student	-0.856		19	0.403
		Wilcoxon	45.500	-0.824		0.425

Note: Non-parametric Wilcoxon test applied due to deviation from normality of the data.

4.5.4. Paired Samples T-Test

Goss-Sampson (2019) explains that “paired-samples t-test compares the means between two related groups on the same continuous, dependent variable. For example, looking at weight loss pre and post 10 weeks dieting.” (p. 56). This test compares the averages of two interconnected data sets, which come from the same group of people at two different moments. In this study, the results of the participants’ initial and final intercultural awareness questionnaires were compared before and after the implementation of a COIL module. These measures are important for addressing this study’s first specific question: What are the 5th graders’ intercultural awareness level and manifestations before, during, and after participating in a telecollaborative pedagogical proposal on environmental issues?

The researcher used the standard p-value. When the p-value is less than 0.05, the change is considered statistically significant. Conversely, if the p-value is greater than 0.05, it cannot be assured that there was a real effect (Goss-Sampson, 2019).

4.5.5. Reliability

According to Hernández-Sampieri *et al.* (2014) reliability refers to “the degree to which an instrument produces consistent and coherent results.” (p. 200). Hence, the instruments used to collect data for this research were reviewed by experts and peers. Furthermore, for the intercultural awareness questionnaire, two qualitative and one quantitative pilot tests were carried out. Moreover, it was tested with the Cronbach alpha coefficient measure. The coefficient alpha was described in 1951 by Lee J. Cronbach. It is a measure used to evaluate the internal consistency of a scale or measurement instrument, which provides an idea of its reliability. The minimum value for the instrument to be valid is 0.70 (Cronbach, 1951). For this study, the intercultural awareness questionnaire submitted to the reliability process yielded a Cronbach’s alpha value of 0.790. This value indicated that the instrument was within the considerable range of this criteria.

Table 4*Unidimensional reliability***Frequentist Scale Reliability Statistics**

Estimate	Cronbach's α	Mean	SD
Point estimate	0.790	72.421	9.070
95% CI lower bound	0.618	68.343	6.853
95% CI upper bound	0.896	76.499	13.412

Note. Author's creation based on research results obtained with software JASP.

4.5.6. Qualitative analysis

In order to establish the presence of intercultural awareness' manifestations, the researcher carried out a qualitative analysis, which also took into account the process of validity and reliability through researchers' review. This type of analysis is flexible and emergent, using narrative information such as interviews, observations, or texts. Through an inductive process, data is organized into codes and categories to identify themes, patterns, and meanings that emerge from the context. Its main purpose is to achieve a deep understanding of the phenomenon, from the perspective of those who experience it (Hernández-Sampieri & Mendoza, 2018).

The author of this study classified data coming from the students' comments in their artifacts, interviews and from the researcher's journal in an Excel spreadsheet matrix, which allowed the exploration of results in terms of frequencies and themes from the data collected. She used a color-coding technique to highlight the most relevant information, and triangulate the most common patterns in categories and subcategories through thematic analysis (Stottok et al., 2011). The categories were established from Baker's descriptors, which means that the main categories were predetermined. Each of the learners' comments in the Excel matrix

were categorized according to the Baker's (2011) descriptors to which they related to.

However, on some occasions, some students' statements were confusing to classify, so peer review was performed.

The information collected in Spanish, such as the participants' voices in the final interviews and some student artifacts, was translated into English in order to provide uniformity to the report. Learners' names were replaced by a word and a number (student 1, student 2, etc.). The teacher's journal was used to add and describe additional perceptions the teacher noticed before, during and after the implementation.

The qualitative analysis steps were carried out as follows:

- **Step 1:** Transcription and organization of student responses in various spreadsheets.
- **Step 2:** Each response was thoroughly read, and those that were useful and those that were not were classified.
- **Step 3:** After classifying the students' comments, they were placed in a spreadsheet by instrument.
- **Step 4:** After classifying all the responses by instrument, the presence of Baker's descriptors was identified.

Table 5

Students' answers classification according to descriptors

	1. Para ti, ¿qué significa la palabra cultura? ¿Qué elementos conforman la cultura según tú?	Category	Sub category	Specific item	Level 1: BCA				Level 2: ACA					Level 3: ICA		
					D	D	D	D	D	D	D	D	D	D	D	D
					1	2	3	4	5	6	7	8	9	10	11	12
S16	La cultura es algo que nos identifica, por ejemplo, en un país, por ejemplo, Colombia, aquí nos identifica la cultura como los bailes, la comida y las lenguas también.	Cultura como identidad nacional	Manifestaciones tangibles de la cultura	-	X											

Note. Example of an analysis tool created by the researcher.

The analysis instrument used was a spreadsheet containing both the student responses (on the left side) and each of Baker's (2011) descriptors (on the right side). This process was carried out for each instrument; After classifying each response by instrument, all responses were combined.

- **Step 5:** Once the descriptors present in the students' responses were identified, the scores for all instruments were quantified by implementation time (during and after). The total number of student responses corresponding to each descriptor of Baker's (2011) levels of intercultural awareness was then established.
- **Step 6:** Once the information was complete by instrument, the scores were entered into a spreadsheet, and the presence of manifestations of intercultural awareness among the students was numerically obtained. With this information, it was possible to determine the percentage of manifestations for each of Baker's (2011) three levels of ICA during and after the implementation of the COIL module.

4.6. COIL module

This telecollaborative pedagogical proposal was developed on the project-based learning principles and grounded in critical interculturality. The aim of this intervention was to foster participants' intercultural awareness skills through a COIL module. For this reason, a 10-week COIL module was designed, taking into account the Liddicoat's (2008) processes of intercultural pedagogy: noticing, comparing, reflecting and interacting. In addition, this proposal was reviewed by experts before and during its implementation.

For the creation of this module, two axes were also taken into account: cultural and environmental spheres (considering that it was implemented within the framework of a Science class). Three synchronous meetings were scheduled (all during school hours):

Table 6*Synchronous meeting schedule*

Synchronous meetings	Hour (Colombian time)
Meeting 1 - April 10th, 2024	13:50 - 14:30
Meeting 2 - May 06th, 2024	13:50 - 14:30
Meeting 3 - May 29th, 2024	13:50 - 14:30

Note. Dates and times of synchronous sessions among international partners and Fray Damián González students.

- **Meeting 1 - April 10th, 2024:** The first meeting was held during the second week of the implementation. The goal was for students to get to know each other and discuss how they care for the environment through their roles as students in their respective communities. For this meeting, a virtual Google Meet session of approximately 40 minutes was scheduled, from 13:50 to 14:30 (Colombian time). At the time of implementation, Wisconsin was one hour ahead so the Spanish club was from 14:44 to 15:30. Thus, the schedules coincided with the Science classes here in Colombia, which ran from 13:40 to 14:40.

As agreed with teacher Rebeca, both the Colombian participants and the Wisconsin students were asked to see at least four or five Padlet posters before the synchronous meeting. The agenda for this first meeting was based on personal introductions by the students in each group and some comments on the posters viewed. At the end of the meeting, the learners were very excited and interested in the next intercultural interaction.

- **Meeting 2 - May 6th, 2024:** The second meeting was held in the sixth week of implementation, with the aim of sharing information about the values, behaviors, and beliefs of each culture. This virtual meeting lasted approximately 40 minutes between 13:50 and 14:30 (Colombian time). To develop this synchronous meeting, the class agenda followed

this order: greeting, warm-up on what culture is, reading of some works on values, behaviors, and beliefs; and finally, feedback on what was covered in the session.

First, both groups greeted each other and began the warm-up using the digital tool Mentimeter, in which all students could respond simultaneously and their answers appeared on screen. In the case of the Colombian participants, they did so using the researcher's cell phone, as they were not allowed to carry mobile phones at school. Afterwards, students from each group approached the microphone and read their texts. Once the collaborative activity was over, four children from both Cali and Wisconsin timidly shared their views on what they had heard during the interaction, with the help of the teachers.

- **Meeting 3 - May 29th, 2024:** The final meeting was held in the ninth week of implementation, with the goal of identifying similarities and differences in how people from both cultures reduce their carbon footprints. This final synchronous meeting also sought to conclude the work done during the ten-week COIL module implementation and finally bid farewell. This synchronous meeting lasted approximately 40 minutes between 13:50 and 14:30 (Colombian time).

To conduct this session, students in each group had to watch some of the videos uploaded to Padlet about the other group's oral presentations on how to reduce their carbon footprint. Therefore, four moments were proposed: a Kahoot game created by the teachers as a warm-up, identification of similarities and differences between the videos watched, reflection on what was learned, and closing remarks.

First, the Kahoot game addressed questions that had been covered throughout the module. Among the topics were the concept of culture, the relationship between culture and the environment, and some facts about Wisconsin and Cali. Finally, some questions about the carbon footprint were presented. Then, volunteers from both groups shared the similarities and differences they found in the videos on how to reduce their carbon footprint. Two

American and three Colombian students then participated, reflecting on what they had learned. These reflections were presented in their native language, and each teacher translated the information. Finally, each teacher gave a closing speech and thanked the learners for their participation in the experience.

The other 14 remaining sessions were held asynchronously over the ten weeks. These classes were arranged with teacher Rebeca and were primarily intended to prepare students in both groups for the synchronous meetings. During these sessions, some cultural features of both Cali and Wisconsin were addressed, along with the concept of culture, the influence of culture in a person's values, behaviors, and beliefs, the relationship between culture and the environment, and solutions for reducing their carbon footprint.

In each session, students completed a series of activities that addressed linguistic, communicative, and intercultural elements. Addressing these issues led to the development of the learners' products the teacher would upload to Padlet before each synchronous meeting. These works included the environmental poster, the paragraph on values, behaviors, and beliefs, and the video of the oral presentation on the carbon footprint. To encourage active participation and engagement among students, all proposed activities were considered part of the ongoing assessment of the Science course, as syllabus topics were also addressed. The assessment also took into account teamwork, the aesthetics of the requested work, linguistic aspects, and other aspects.

It is also worth noting that Padlet was the online platform that allowed students to share all their products (posters, texts, videos, etc.) so that both classes could view their work. This platform was chosen because it allowed learners to present their work in an organized and clear manner. It was also accessible to both groups in both countries. The teachers also agreed to use Google Meet for the online sessions because it was user-friendly, free, and offered unlimited time for interaction.

To illustrate the above, a table is presented below with the basic information from one of the COIL module sessions:

Table 7

Example of a pedagogical proposal plan - Part 1

Week	Linguistic dimension	Communicative elements	Intercultural elements	Learning objectives
1	Grammar: Subject + modal verb "can" + complement Vocabulary: Actions for taking care of the environment, such as: recycle, don't litter the ground, etc. Pronunciation: We work on the correct pronunciation of words.	The main communicative functions worked on in the activity are: Express habitual actions: Participants use sentences in the simple present to express actions that they usually carry out, to take care of the environment, from their role as students at school and as a son or daughter at home. To do this, students practice forming sentences using the subject + verb + object structure (specifically modal verb "can"). Communicate with their peers: Students communicate with each other to write about their actions to care for the environment. In this part, they receive help among them.	Products: Science class discussion Practices: Share information about the relationship between culture and the environment. Perspectives: Our culture affects directly what we think and how we act. In this case, how we care for the environment depends on our culture.	To give environmental information (actions to care for the environment from their student's role) in a written way about their everyday contexts.

Note. Main objectives to achieve with students during the first week through COIL.

Table 8*Example of a pedagogical proposal plan - Part 2*

Methodological details	Tasks	Assessment	Resources
Exercise 1: As a warm-up, students will answer: What is the relationship between culture and the environment? Exercise 2: Think about actions students can do to take care of the environment at school and home. Exercise 3: Watch a video about the modal verb "can", explain how it is used, and write three sentences in the notebook from what they listened to. Exercise 4: Some students must come to the board and write their examples to receive feedback. Activity: Students start working on their posters, including what they wrote in the paragraph and answering the question: "How can you take care of the environment as a student?"	Micro-task 1: Students must read and select the information they are going to include in the poster (the most relevant actions for taking care of the environment as students). Micro-task 2: Students must include the information given in the paragraph and write about the actions they do to take care of the environment. Micro-task 3: Paste images and decorate the poster. Expected product: Creative poster about their personal presentation and the way they take care of the environment.	- The poster must have two sections: each student's personal presentation and the actions to take care of the environment. - The correct use of linguistic structures is considered to address the two mentioned sections (My name is... / I am 10 years old.../I can...). - Presentation and aesthetics of the poster: margins, images, and clear writing.	Can/Can't: - https://www.youtube.com/watch?v=HZn8u9Jbn9o&ab_channel=ABCEducationalChannel ** Video 1 about Wisconsin: https://www.youtube.com/watch?v=uZ3G2cjmZSc&ab_channel=HomeschoolPop ** Video 2 about Wisconsin: https://www.youtube.com/watch?v=WbQ0x3fT-B8&ab_channel=TheFamilyFudge

Note. Teaching plan based on the main objectives to be achieved.

Table 9*10-week COIL module*

Week	Meetings	Tasks
1st week	Students' asynchronous meeting (school class)	Initial intercultural questionnaire application. Options for introducing themselves: (A) In groups of three or four people will record a video with 5 things about their personal information. Then, the teacher will upload the videos to a specific platform and students will watch the other's course videos. (B) Each student writes a description of 100 words in English where they present themselves and paste a picture of themselves. (C) Posts with things they like and paste pictures about what represents them. At the end of the videos or posters students must answer the following question: What can you do to help the environment as a student?
	Students' asynchronous meeting (school class)	Students will watch a video about Wisconsin to know about the other participants' context. Then, we will talk about what they think about it, what were the aspects that they liked the most and why. Students start working on their environmental posters.
2nd week	Students' asynchronous meeting (school class)	Students continue working on the environmental posters during the class.
	Student's online encounter (synchronous meeting)	For this session, each student must have watched 4 videos or read 4 posts of the other group and during this online encounter, students will discuss the similarities and differences they found in them. Then, they will address their position about how they help the environment. Are these actions similar or different? For this activity, students will write similarities and differences in their notebooks.
3rd week	Students' asynchronous meeting (school class)	During this session, students will start with brainstorming about the following concepts: "culture", "values" "behaviors" and "beliefs". After this activity, the teacher will provide the definitions, examples, and their relation with culture. It will continue next class.
	NO CLASS	X
4th week	Students' asynchronous meeting (school class)	Activity in class: Written activity about values, behaviors, and beliefs in our native language. During this session, students will write in groups of 3 about how they behave in some situations, what values and beliefs they were taught, and how they can relate them to culture.
	Students' asynchronous meeting (school class)	They will continue working on their written activity. After that, the teacher will continue working on intercultural awareness and culture concepts too.

5th week	Students' asynchronous meeting (school class)	Students will read international partners' definitions and examples they found in their culture. Then, each group will answer the question: What are the main similarities and differences among participants' cultural behaviors? Moreover, students will recognize what their values, behaviors, and beliefs are. They will create a chart in their notebooks.
NO CLASS		X
6th week	Student's online encounter (synchronous meeting)	During this session, students will have a second virtual encounter with the international participants. In this online session, as a warm-up, students will answer the following question: What is culture for you? In the platform Mentimeter, teachers will write their words, and together both groups will build a kind of map that wraps up all their ideas about culture. Then, students will share their ideas about values, behaviors, and beliefs in English and Spanish. At the end of the encounter, learners will answer a mini-questionnaire: What did you learn? Did you like the activity? What are the main cultural similarities and differences you notice?
	Students' asynchronous meeting (school class)	Pre-task: Brainstorming about the second online meeting. Students from both groups will share and discuss the information addressed in the online session. After, participants will answer: What do you think about the other participants' answers? Why do you think they do it this way? Then, with the teacher's help, they will see the relation between culture and the environment.
7th week	Students' asynchronous meeting (school class)	In this class, students will read a text about the carbon footprint, and in groups of 3 or 4 people, they will talk about what it is. Then, they will start planning the script of a video about how to reduce their carbon footprint.
	Students' asynchronous meeting (school class)	Pre-task: We will see some videos about people giving solutions to reduce their carbon footprint. Task: During these sessions (in class), students will explore possible solutions to reduce their carbon footprint. Then, they will record a video with alternatives or advice to achieve it. They will think about these solutions since their role as students in the school or son/daughter at home: Which actions can they do from school or home? Then, the video will be shared and in the next online encounter, Colombian participants and international partners will share their ideas. These videos will be created in groups of 3 or 4 students.
NO CLASS		FAMILY DAY
8th week	Students' asynchronous meeting (school class)	Pre-task: Students will watch international participants' videos about how to reduce their carbon footprint. Task: Continue working on their posters. Students will identify similarities and differences between both groups and they will compare as well what they see. Then, they will reflect on how international participants contribute to reducing their carbon footprint and why they do this way.

9th week	Students' asynchronous meeting (school class)	Time to see international participants' videos
	Student's online encounter (synchronous meeting)	Pre-task: Kahoot game. Task: Colombian participants and international partners will share their possible solutions or advice for reducing the carbon footprint as students. Then, students will answer: Are these solutions different or similar to mine? Why?
10th week	Students' asynchronous meeting (school class)	Pre-task: The teacher will remember some of the most important cultural aspects that students could evidence during the COIL experience and she will create a chart with their help. Task: Colombian participants will talk about the similarities and differences they found in international partners' videos. Post-task: Students will reflect on what they have learned until that moment.
	Students' asynchronous meeting (school class)	Final intercultural questionnaire application.

Note. Schedule designed by the author based on the students' school calendar.

In the example presented above, students were to create an environmental poster. To achieve this product, as an introductory activity, participants watched 2 animated videos about Wisconsin, with the aim of noticing some features about this state. Then, they answered the question: What is the relationship between culture and the environment? Once we finished, we discussed how culture influences the way we care for the environment and how this can vary depending on the community we live in. Then, participants were asked to think about actions they (as elementary students) perform in their everyday lives to care for the environment. For example, recycling, separating waste found at school, and so on.

After that, a short reminder of the modal verb “can” was also provided through a video and some exercises on the board, so that students could write down the actions mentioned. Finally, the students were to design their environmental poster with some previously requested materials; these posters were uploaded to Padlet (just as the international

group did). This activity was done to establish initial contact between both groups and spark interest in getting to know each other. This structure was held for the remaining development of the pedagogical implementation. Attention was given to the integration of communicative, linguistic, and intercultural aspects for the development of tasks addressing the cultural and environmental phenomena from this COIL module.

4.7. Ethical considerations

According to Creswell (2007), “permissions need to be sought from a human subjects review board, a process in which campus committees review research studies for their potential harmful impact on and risk to participants.” (p. 123). The researcher designed a detailed informed consent in which the purpose of this study and its confidentiality were reported, it also sought to make explicit the voluntary decision of the participants and their families to be part of it and leave the research if they decided to do so. However, even if students refused to participate, they would have to complete the assignments of this COIL module because the activities were part of the course, but their data would not be considered for this report.

The informed consent form was designed by the researcher and approved by the principal of the institution where the study was conducted. Therefore, the document was sent through the Fray Damián school’s institutional platform, along with an email explaining the research. Some parents sent the signed form digitally, while others sent it on paper. The consent form was read, accepted, and signed by 20 parents out of 23 (see [Appendix G](#)).

Results and discussion

5.1. Objective 1: Students' intercultural awareness level

The first specific objective focused on identifying the participants' level and manifestations of intercultural awareness before, during, and after the implementation of a telecollaborative pedagogical proposal. Consequently, the results are reported in three moments: before, during, and after the COIL experience. In each one of them, the researcher also took into account the students' manifestations (students' artifacts, answers in the interviews, class observations, teachers' journal) to explore Baker's (2011) Intercultural Awareness levels. A table with the intercultural awareness rating scale designed by the researcher is presented below ([Table 11](#)) for interpreting the values obtained from the questionnaires, as well as the results of the initial ([Table 12](#)) and final questionnaires ([Table 14](#)).

According to the data collected from the initial and final intercultural awareness questionnaires, the significance index (represented by the p-value) showed no statistically significant improvement in the learners' dimensions (cognitive and pragmatic) of ICA ([Table 10](#)). This value indicates whether the observed changes in student averages are actually due to the pedagogical intervention or whether they could have occurred by chance (Goss-Sampson, 2019). In numerical terms, the Paired-Sample T-Test ([Table 10](#)) does not show statistically significant values. However, a qualitative analysis reveals a certain tendency toward manifestations of intercultural awareness.

It is important to explain the difference between the cognitive and pragmatic dimensions. On the one hand, the cognitive dimension focuses on analyzing the mental processes that allow people to interpret, store, think, and generate knowledge. Its main interest is how the human mind constructs representations of the environment, organizes the

information it receives, and modifies that knowledge to respond or adjust to its reality (Piaget, 1947). In this case, the questionnaire descriptors belonging to this dimension sought to focus on students' mental processes such as thinking, learning, and perception regarding certain concepts.

On the other hand, the pragmatic dimension is understood as the notion that meanings, beliefs, and knowledge acquire validity through their concrete effects in everyday life. In this sense, knowledge is constructed from experience and is constantly transformed as it is applied to practice (Dewey, 1916). That is, the questionnaire descriptors that belonged to this dimension were related to exploring how learners solved problems and adapted in specific contexts.

Table 10

Paired Sample T-Test

Dimensions	n	Pre-Test M (SD)	Post-Test M (SD)	Paired Sample T-Test t (df) = p
Cognitive	20	5.192 (0.531)	5.367 (0.569)	-1.644 (19) = Sig 0.117
Pragmatic	20	4.950 (1.334)	5.251 (0.923)	-0.856 (19) = Sig 0.403

Note. A p-value below 0.05 indicates a statistically significant result, suggesting the effect is unlikely due to chance. A p-value above 0.05 suggests the result is not statistically significant and may have occurred by random variation.

The interpretation of this table is the following: COGNITIVE DIMENSION: Pre-test Mean (M) = 5.192 Post-test Mean (M) = 5.367 $t(19) = -1.644$, $p = 0.117$. The increase (5.192 $\rightarrow$ 5.367) suggests a slight improvement, but $p = 0.117$ (greater than the typical alpha level of 0.05) means this change is not statistically significant. In conclusion, no significant improvement in the Cognitive dimension. PRAGMATIC DIMENSION: Pre-test Mean (M) =

4.950 Post-test Mean (M) = 5.251 $t(19) = -0.856$, $p = 0.403$. The increase (4.950 $\rightarrow$ 5.251) suggests improvement, but $p = 0.403$ (much greater than 0.05) means this change is not statistically significant. In conclusion, no significant improvement in the pragmatic dimension. Overall, neither the COGNITIVE nor the PRAGMATIC dimension showed a statistically significant change from pre-test to post-test. The p-values (0.117 and 0.403) are both > 0.05 , meaning any observed differences could be due to random variation rather than a real effect.

Table 11

Intercultural awareness rating scale for the initial and final questionnaires

Dimensions	Performance scale
Cognitive and pragmatic	1-2 = BCA low level
	3-4 = BCA medium level
	5-6 = BCA high level

Note. Designed by the researcher.

5.1.1. Before COIL implementation

Before the implementation, the results of the initial questionnaire ([Table 12](#)), both at the general cognitive level: (N= 20), (M= 5.192) (SD= 0.531), and at the pragmatic level: (N= 20), (M= 4.950), (SD= 1.334), revealed that, despite the students' young age, they already had a general understanding of the nature of culture, its tangible and intangible manifestations, and interpersonal relationships. Similarly, from a pragmatic perspective, the students recognized the influence of family and surrounding people on their own values, behaviors, and beliefs; and they also identified similarities and differences with people from other communities. This prior stance might have paved the way for deeper understanding and exploration of the intercultural phenomena along the COIL experience. Among the students' comments, the three levels of intercultural awareness were identified: Basic Cultural

Awareness (BCA), Advanced Cultural Awareness (ACA), and Intercultural Awareness (ICA). However, there were few manifestations of ICA:

Table 12

Initial intercultural awareness questionnaire results: cognitive and pragmatic dimensions

Dimensions	n	Pre-Test M (SD)
Cognitive	20	5.192 (0.531)
Pragmatic	20	4.950 (1.334)

Note. Data collected by the author.

The interpretation of this table is: COGNITIVE DIMENSION: Mean (M) = 5.192 (on the 6-point scale used) Standard Deviation (SD) = 0.531. The average score is moderately high (assuming a scale like 1-7, where higher = greater intercultural awareness). The low SD (0.531) suggests that most participants scored close to the mean, indicating little variability in responses. This could mean participants had similar levels of cognitive intercultural awareness (knowledge about cultures).

PRAGMATIC DIMENSION: Mean (M) = 4.950 (on the 6-point scale used) Standard Deviation (SD) = 1.334. The average score is slightly lower than the Cognitive dimension. The higher SD (1.334) indicates greater variability in responses. Some participants scored much higher or lower, suggesting differences in practical intercultural skills (e.g., adaptability, communication in real-world cultural interactions).

The implication of these results for the intervention suggests that students already have a relatively high level of cognitive awareness, consistent across the group. So, the intervention should focus on the pragmatic dimension, particularly those students with low scores.

Level 1: Basic Cultural Awareness (BCA)

For this section, data were taken during two weeks before starting the implementation. Each week consisted of two Science classes, each approximately 50 minutes long. This information and the activities developed are summarized in more detail below.

Table 13

Activities carried out to develop BCA

Week	Activities
From March 11th to 15th, 2024	Two 50-minute sessions: Discussions were held to explore participants' expectations about the pedagogical intervention and their interest in meeting people from different backgrounds. These conversations were recorded and transcribed, and teacher journal notes were also taken into account.
From March 18th to 22nd, 2024	Two 50-minute sessions: Two brainstorming sessions were held this week: the first addressed the students' ideas about the concept of culture. The second session focused on the relationship between culture and the environment and how the former can influence how people care for nature.

Note. Weeks in which data was collected prior to the implementation.

Conceptions and manifestations of culture

Through the observations made, the researcher found that participants already recognized some elements related to the concept of culture, as well as intercultural notions toward other communities: students 4, 6, 14, and 15 stated:

“Culture is what makes up a country. For example, Chinese culture. In Chinese culture, it's religions—they believe in dragons—their clothing, food, and music. There are many things that make up a country or a community.” (Student 4, Teacher's journal)

“Culture is what defines us, it's what defines every country in the world. Like, let's say, festivals, carnivals, and dances.” (Student 6, Teacher's journal)

“Culture is the only thing that defines a country. For example, the country has some typical and unique dances. That's culture.” (Student 14, Teacher's journal)

“Every country has its own culture. Let's say, Colombian culture, salsa, and... Well, something like that, where culture is like something... essential. Something like that, something classic about the country.” (Student 15, Teacher's journal).

These statements show an initial understanding of the concept of culture as a collective entity, in which beliefs, myths, social behaviors, daily practices, among others, are treasured. Hence, their statements are related to Baker's (2011) descriptor 1 belonging to the BCA level, which addresses the following: “An awareness of culture as a set of shared behaviors, beliefs, and values” (p. 66), which not only implies recognition of tangible elements of culture, but also the intangible dimension related to what defines us.

These ideas mean that students were able to approach the concept of culture as a multidimensional element beyond superficial aspects. For example, student 16 mentioned that “Culture is what defines us”. When he explains this idea, he is showing a deeper and more essential vision of culture. The participant recognizes that culture is not only what we do but who we are: our ways of thinking, feeling, relating, and seeing the world (Kramsch, 2005; Liddicoat, 2008). Furthermore, this comment can be related to individual and collective identity, as it implies that culture acts as a framework that shapes our values, behaviors, and beliefs (Liddicoat & Scarino, 2013).

This commentary fits the idea that culture shapes and structures the ways people in a community think, live, and feel. Furthermore, when learners identified the elements shown above, they also related culture as something that defines their country, which points to national identity. This idea also indicates a possible relationship with Baker's descriptor 3: “An awareness of our own culturally induced behaviour, values, and beliefs and the ability to

articulate this” (p. 66), since expressing that culture defines them reveals the starting point of how they express their cultural identity and, in turn, how they would share it with people from other communities. This prior approach, although at a basic level, facilitated the recognition of deeper knowledge regarding intercultural relationships worked on in the COIL module later.

Level 2: Advanced Cultural Awareness (ACA)

Eagerness to learn about other cultures

Among the learners’ manifestations recorded in the teacher’s journal, it was possible to identify interest in participating and interacting with the international peers. Moreover, some of these comments fit in the second level proposed by Baker (2011) Advanced Cultural Awareness, which indicates eagerness to interact with people from different backgrounds. Among these statements, the ones from students 7 and 13 stood out:

“It would be a really cool experience to talk to someone from another country. I mean, it feels like a privilege. It's incredible because I can't talk to people who are so far away.” (Student 7, Teacher’s journal)

“So, if we speak their language, the word we say is "hola." It's like... No one understands the pronunciation. Do I make myself understood? But it's not bad at all.” (Student 13, Teacher’s journal)

Before implementing the COIL module, the researcher inquired about the participants’ expectations regarding their interactions with Wisconsin students. Based on this, participant 7 acknowledges the value and excitement of interacting with people from other cultures, perceiving intercultural communication as an amazing and meaningful phenomenon regardless of geographical distance. This statement is related to Baker’s descriptor 9: “An awareness of common ground between specific cultures as well as an awareness of

possibilities for mismatch and miscommunication between specific cultures” (p. 66), which belongs to Level 2: Advanced Cultural Awareness. Here, the student is open and excited about new forms of intercultural exchange. Furthermore, they do not assume that there is only one way to communicate, on the contrary, they are open to listening to people who do not share their language, and even see it as a privilege, even if they may change their mind later.

During that same session, student 13 acknowledged a potential language barrier with the Wisconsin students regarding their Spanish pronunciation. However, he argued that he does not perceive this as a negative factor, but rather he seems to orient his comment toward considering a potential area of misunderstanding as something natural and part of intercultural communication. Therefore, his comment is directly related to Baker’s descriptor 9: “An awareness of common ground between specific cultures as well as an awareness of possibilities for mismatch and miscommunication between specific cultures” (p. 66). Although the student is expressing the possibility of a misunderstanding emerging from difficulties in pronunciation, an attitude of acceptance toward this situation is also evident, which enhances student 13’s advanced cultural awareness.

On the other hand, participants made some contributions regarding the environmental component of this project, as student 16 mentioned:

“There are some indigenous tribes that believe water and the sun are like... gods. Here [in Cali], water is seen more as... a resource.” (Student 16, Teacher’s journal)

In this statement, the participant refers to the different visions that can be held about water within the same territory. On the one hand, the sacred and spiritual value that indigenous peoples may attribute to it, and on the other, a more functional and utilitarian vision that people in urban contexts assign to it. This commentary fits descriptor 7 of Baker’s level 2 of Advanced Cultural Awareness: “An awareness of multiple voices or perspectives

within any cultural grouping” (p. 66). Instead of seeing that in a country all people perceive a phenomenon (like the perspectives about water) “equally”, there is a recognition of the several voices that may coexist with different ways of understanding the same idea, in this case, the conception of water as a sacred symbol.

The information gathered in the teacher’s journal allowed confirming what had been found in the initial questionnaire: a high level of Basic Cultural Awareness (CBA), and beyond this, signs of Advanced Cultural Awareness reported in the participants’ manifestations. This indicates that the students already had some ideas and preconceptions about their own culture as well as the recognition of other cultures and the intercultural relationships that can exist among them. These findings provided an idea of what would be found during and after the implementation of the pedagogical proposal.

Level 3: Intercultural Awareness (ICA)

Before the COIL module, there were few manifestations belonging to the Level 3 of Intercultural Awareness. On the one hand, during this pre-implementation phase, participants demonstrated great interest in interacting with the Wisconsin students; however, some of their comments were tinged with stereotypes and negative expressions such as the word “gringo”. To illustrate this idea, participants 12 and 20 stated the following: “Are they ‘gringos’? I feel like I can’t call them ‘gringos’.” (Student 12, Teacher’s journal) “What vocabulary are we going to use with those gringo people?” (Student 20, Teacher’s journal).

Although the aforementioned comments are just a taste of the level 3 intercultural awareness outlined by Baker (2011), more specifically related to descriptor 11: “initial interaction in intercultural communication as possibly based on cultural stereotypes or generalizations but an ability to move beyond these through” (p. 66). The students’ statements demonstrate that, even before having their first interaction with the international peers, they

are already predisposed to call them “gringos” or, even more strongly, “those gringo people” due to the fact that they are North Americans and speak English, a term that is frequently used in different Colombian contexts in a pejorative way. However, it is also possible to note that there is something negative in this connotation: “I feel like I can’t call them ‘gringos’”, which may imply a potential recognition of how people from other communities should be treated. Furthermore, this last comment also shows certain sensibility and empathy to avoid miscommunication and conflict during their interactions.

On the other hand, students also expressed a genuine desire for equitable interaction. Student 8 stated the following: “Because it would be cool because we're going to teach them and they're going to teach us, and then the other children from another country.” (Student 8, Teacher’s journal). The above is partially related to Baker’s descriptor 12: “a capacity to negotiate and mediate between different emergent socioculturally grounded communication modes and frames of reference based on the above understanding of culture in intercultural communication” (p. 66). Although this statement does not contain a profound question, it demonstrates eagerness to learn from other cultures and share one’s own, as well as an intention to collaborate respectfully and reciprocally in an intercultural context. These types of demonstrations not only facilitate the promotion of dialogue, willingness to learn from others, and respectful interaction with other cultures, but also enhance the development of students’ intercultural awareness in the classroom.

In conclusion, it was possible to notice through the learners’ comments and observations that, from the beginning, the students were exploring aspects of intercultural awareness. Indeed, the three levels proposed by Baker (2011) were evident. Among the diverse participants’ statements, a high level of motivation to interact with their peers in Wisconsin was evident. This interest demonstrates a positive disposition toward intercultural

contact. The learners expressed initial conceptions of culture and the relationship between it and the environment. In addition, some comments were related to potential communicative misunderstandings that could arise and even words that should be avoided to prevent intercultural conflicts. These ideas not only reflected the identification of cultural features but also a reflection on the use of language and its potential impact. This phase laid a solid foundation for the implementation of the telecollaborative pedagogical proposal.

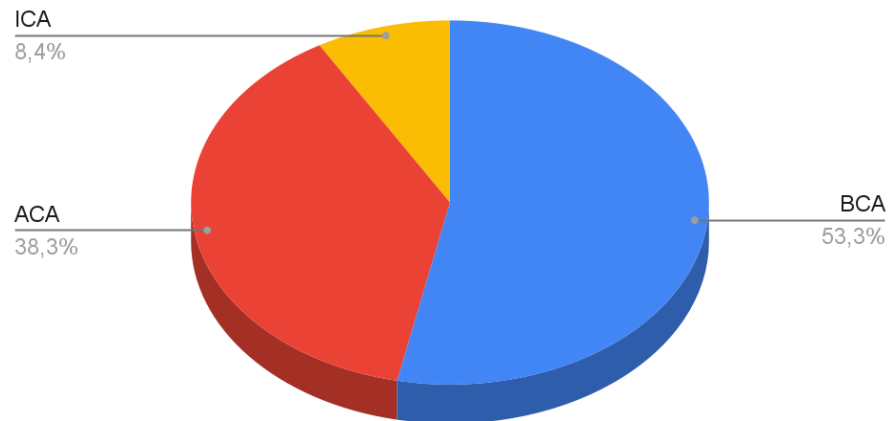
5.1.2. During COIL implementation

Participants showed a high level of cognitive Basic Cultural Awareness in the initial questionnaire. However, their manifestations allowed the researcher to identify the presence of the three intercultural awareness levels proposed by Baker during the COIL implementation. Through class discussions, activities, and the synchronous meetings, participants were able to share ideas and examples from their own cultural experiences with their own peers and with their American classmates. Furthermore, they compared and reflected on those cultural views and the ones of the Wisconsin students. Hence, the three ICA levels are addressed through two axes: conceptions and manifestations of culture and environmental issues.

The following pie chart demonstrates the presence of each level of intercultural awareness in the participants' responses during the implementation. The teacher's journal and the students' artifacts (the techniques used to gather data during this stage) were used to create this graph. 53.3% corresponds to level 1: Basic Cultural Awareness (BCA); 38.3% points to level 2: Advanced Cultural Awareness (ACA); and finally, 8.4% is related to the number of the participants' qualitative responses level 3: Intercultural Awareness (ICA).

Figure 2

Pie graph on participants' qualitative intercultural awareness manifestations (During implementation)



Note. Research results obtained from the intervention. Data collected by the author.

Level 1: Basic Cultural Awareness (BCA)

Conceptions and manifestations of culture

At the pragmatic level, students provided examples of their values, behaviors, and beliefs based on their life experiences and cultures. In this regard, students 12 and 17 respectively stated: “We believe that our mothers always tell the truth and children follow that belief because they must be obeyed.” (Student 12, Workshop) and “You have to behave according to the place where you are” (Student 17, Workshop). These comments also reflect deeply rooted cultural beliefs about familial authority and norms of social behavior. This idea is very important taking into account the context of this study and the learners’ contact with international peers. Furthermore, this may imply a form of socialization based on respect and obedience. On the other hand, the idea of behaving according to location demonstrates

situational awareness, indicating the internalization of context-specific social norms, which may be a sign of emerging intercultural awareness. In this way, both comments reveal that students are influenced by social structures that determine how one should act and with whom.

By analyzing the participants' social and cultural realities, they were able to explore how their values, behaviors, and beliefs are interconnected with all the teachings they had learned at home. In this activity, participants had to think of a common practice or saying in their families and discuss it with two other classmates. Then, they had to identify what value, behavior, or belief might be linked to that example. However, at the beginning of the activity, the students were somewhat confused, so the teacher explained it again through other examples in which the learners could clearly see the connection between the three requested elements.

Some of the responses given by participants in a group workshop on this topic consistently revealed answers that reflected students' perceptions of values such as respect, obedience, and honesty from their upbringing; as well as the behaviors and beliefs associated with them. This behavior indicates the influence that family exerts on each individual. To exemplify the above, students 15, 16, and 20 (Group 2)³ and students 17 and 19 (Group 7) commented the following, respectively: "If we behave well, we draw closer to God and learn not to do wrong." (Group 2, Workshop) and "My mom thinks that physical punishment will make me a good person." (Group 7, Workshop).

The previous examples show that, on the one hand, according to the nature of the participants' culture, religious influence is present as part of their upbringing. Also linked to this influence, there are positive values taught at home, which form part of the learners'

³ To carry out this activity, Colombian participants worked in teams of 2 to 3 people.

identity. Based on what they wrote, for example: obedience, respect, among others. Hence, these responses relate to descriptor 9 of the initial ICA questionnaire: “I think the things I believe in and my opinions about the things around me are connected to what my family and community consider important.”, since believing in God was instilled from childhood.

When learners from group 2 said: “If we behave well, we draw closer to God and learn not to do wrong.” they pointed out the duality between good and evil. This statement suggests a direct relationship between good behavior and a spiritual reward, in this case, becoming closer to God, and at the same time, an association between evil and what should be avoided. This perspective is heavily influenced by religious beliefs, especially those that establish a moral system based on rewards and punishments (e.g. Catholicism which is taught at the school where this study was carried out). This idea may also reflect how culture shapes the way learners interpret their actions and consequences.

On the other hand, the second example presented alludes to the beliefs and behaviors that some families have about disciplining their children. In this case, when the participant mentions “physical punishment” they are referring to “hitting with a belt or a flip-flop” as mothers or fathers previously and, in some cases, currently punish their children when they misbehave. This statement is also related to Baker’s descriptor 3: “An awareness of our own culturally induced behavior, values, and beliefs and the ability to articulate this” (p. 66). The above means that students were able to identify some cultural practices that have been inherited from generation to generation (physical punishment to modify children’s behavior), sometimes with certain modifications or nuances. Students from Group 7 identified the articulation between physical punishment and the belief that this type of discipline improves the kids’ behavior.

Level 2: Advanced Cultural Awareness (ACA)

Conceptions and manifestations of culture

The discussion conducted after the second synchronous meeting with the Wisconsin students drew valuable information for this section. The synchronous meeting consisted of sharing information about the values, behaviors, and beliefs based on personal experiences from the Colombian and American participants. This activity was conducted asynchronously with the teachers in charge of the session, and then the workshops were posted on the Padlet platform. In this way, students could view the Wisconsin learners' works (and vice versa), discuss them in the asynchronous class, and then share simple ideas about it in the second synchronous meeting.

On a cognitive level, participants recognized that people from other communities and cultures may have different values, behaviors, and beliefs than their own, in this case, with the Wisconsin students. This recognition allowed them to identify similarities and differences with other communities and compare them with our own. As Liddicoat (2008) explains in the processes of comparing:

The process of comparison is multilayered: it needs to allow space for comparisons between the learner's background culture and the target culture but also between what the learner already knows about the target language and culture and the new input s/he is noticing. (pp. 282-283).

This means that, through the synchronous encounters, students were able to connect and compare what they already thought or knew about American culture with the new information they were learning from their international peers. Furthermore, these comparisons allowed demonstrating the direct connection with Baker's descriptor 5, which belongs to level 2 of Advanced Cultural Awareness: "An awareness of the relative nature of cultural norms." (p.

66). This process of analyzing intercultural relations fostered the recognition of cultural values without categorizing them as “worse” or “better” than their own, but rather as “different” or “similar”.

On a pragmatic level, when comparing the work of both groups, participants 5 and 13 argued respectively that “the international peers seem to be more relaxed because of how they completed their work” and “In the United States, they seemed to be less demanding than people here” (Students 5 and 13, Teacher’s journal). These comments came from the way the international peers had presented their posters. The Wisconsin learners did one of their projects on a sheet of paper, while the Colombian participants had to do it on an eighth of a piece of cardboard. Moreover, the Colombian students broadly asked why the American students did not wear uniforms at school, but rather casual clothing; this question demonstrates critical inquiry, but not a full understanding of the situation.

The participants’ question about the uniform shows a partial understanding of the intercultural and behavioral differences that may exist in a given community, according to its values and beliefs. For example, students in Colombia may associate schools with formality and discipline as expressed through uniforms, while in the United States, casual clothing might reflect values such as individuality, comfort, or school culture. The Colombian students’ concern reveals that they think all schools follow the same norms. This idea highlights the beginning of an advanced cultural awareness, but not a deep understanding of how these cultural practices are shaped, which can be worked through Baker’s descriptor 5. This assessment of the situation added to the more casual style of American students to deliver their assignment implied a culture shock for the Colombian ones. They could not conceive submitting a regular assignment on a piece of paper. Noticing and comparing these differences highlights the ways learners started to be aware of the relative functioning behind

cultural norms.

Environmental issues

This research was framed within a Science class, so the activities proposed in the COIL module included both cultural and environmental aspects. Therefore, during the implementation stage, it was also possible to identify some manifestations that could correspond to Level 2 of intercultural awareness proposed by Baker (2011) related to the environment. Among the comments mentioned by participants, the following stand out:

“All I would propose a meeting with the directors so that every year the students could go to the rivers and try to collect all possible contaminants.” (Student 5, Environmental poster)

“I would do a recycling campaign at my school at my school to reduce my and other’s carbon footprint, learning to reuse by exchanging books and toys with everyone.” (Student 10, Environmental poster)

“Create a campaign to reduce carbon footprint. I can also recycle. We can have the environment with illustrative brochures to save the environment. I can also help by recycling oil. Do not waste water. Don't waste water. Avoid leaving appliances connected. use reusable products. Get around more on public transportations and planting trees.” (Student 16, Environmental poster)

Although their comments only address an initial layer of critical understanding of environmental issues, students 5, 10, and 16 converge on the creation of campaigns to reduce their carbon footprint, reflecting how a local action could collectively impact and drive toward the solution of a global problem. Hence, there is a connection with Baker’s descriptor 8, which states the following: “An awareness of individuals as members of many social groupings including cultural ones.” (p. 66), since the participants not only recognize an

environmental problem, but also propose concrete actions that involve other social groups, such as institutions and the school community, suggesting the intention to communicate to others. This idea means that learners are unconsciously recognizing themselves as part of the global community.

Level 3: Intercultural Awareness (ICA)

Environmental issues

During the COIL implementation, the environmental theme was also present. Among the students' comments, it was possible to highlight the connections found between cultural practices and their influence on environmental stewardship. While these relationships are based on the participants' stereotypes or preconceived ideas, they emerged as a result of the telecollaborative intervention. Participants 15 and 16 argued the following:

“There are countries like China where there is land, there is a jungle, something like that, and the animals and trees that are there cannot be touched.” (Student 15, Teacher's journal)

“In India, the cow is sacred, and here we eat it.” (Student 16, Teacher's journal)

These participants' comments show that they are able to identify some practices and beliefs of other communities, even in a superficial way, based on their culture. Although at the beginning of the class discussion, students did not find the direct relationship between culture and caring for the environment, they were the ones who wove their own appreciations after some examples. Hence, the participants noticed that the way they conceive the idea of the environment (understood as fauna, flora, animals, etc.) and the way people care for it is closely related to their values, beliefs and the cultural behaviors culturally acquired in their communities.

These students' responses are also connected to Baker's descriptor 10, which is positioned at level 3 of Intercultural Awareness: "An awareness of culturally based frames of reference, forms, and communicative practices as being related both to specific cultures and also as emergent and hybrid in intercultural communication" (p. 66). Students recognized how certain values and cultural practices are not universal but they are culturally located. For example, the way in which their own culture and Eastern cultures perceive some animals such as the cow. This gives way to find the differences in cultural beliefs, values and behaviors, such as recognizing religious and spiritual diversity. Regarding the second comment, students reflect their perception of the value related to respect for nature and environmental protection.

Although the participants did not make comments specifically referring to the United States and the relationship that could exist between culture and the environment, the presence of those comparisons shows the connections that irremediably exist between the culture in which we grew up and how we perceive the world.

In conclusion, the manifestations found during the COIL implementation point to the participants' understanding of the influence their family and the people around them have on how a person thinks and acts. Recognizing that behaviors and values are conditioned by each individual's community of origin demonstrates an emerging form of intercultural awareness (Baker, 2011).

As Byram (1997) and Baker (2011) point out, understanding the cultural origin of our beliefs opens up a reflective space for dialogue with other perspectives. In this sense, learners begin to identify that their way of acting is not universal, but rather the result of a particular cultural socialization. Therefore, the community where a person grows up is also a determining factor in his or her cultural values, behaviors, and beliefs, since it is what he/she was taught since his/her childhood and with which he/she has grown throughout his/her life.

However, as the COIL module progressed, participants were able to compare some of those values, behaviors, and beliefs with the international students. This allowed them to build intercultural relationships that went beyond just comparing the international learners group, opening up their perspective on other communities as well.

After recognizing and comparing the aforementioned elements, learners were able to perceive the relationship between cultural and environmental practices; potentially positioning themselves as agents of change in their immediate surroundings and in more distant communities. Therefore, identifying some environmental problems and comparing them with those of another community allowed the participants to strengthen both their environmental and intercultural awareness, as they recognized that there exists “the other” with similarities and differences (Álvarez & Bonilla, 2009). This recognition of the other is activated when learners interact with or think about other cultures. In the case of the students in this research, when they asked about the Wisconsin learners’ uniforms or mention things like people do not eat cows in India, they are recognizing “the other” with different cultural and environmental practices.

5.1.3. After COIL implementation

After implementing the COIL module, participants were able to delve deeper into their own culture and intercultural relationships with their international peers. Regarding this idea, the results of the final questionnaire both at the general cognitive level: (N= 20) (M= 5.367) (SD= 0.569); and at the pragmatic level (N= 20), (M= 5.251), (SD= 0.923) revealed a slight increase in the mean score for both dimensions, maintaining their positions at the high level of the BCA scale ([Table 11](#)). These values indicate that, through the telecollaborative implementation, students were able to explore the nature of culture, such as its concept, features, elements, and even its influence on a person’s values, behaviors, and beliefs.

Furthermore, it was possible to identify the factors that facilitate intercultural relationships, as well as those that determine the cultural behaviors and environmental practices of a community. Among the participants' manifestations, the presence of the three levels of intercultural awareness were found (Baker, 2011): Level 1: Basic Cultural Awareness (BCA); Level 2: Advanced Cultural Awareness (ACA); and Level 3: Intercultural Awareness (ICA).

The following pie chart summarizes the presence of each level of intercultural awareness in the participants' responses after the implementation of the COIL experience. The teacher's journal and group interviews were used to create this graph. 48.5% corresponds to level 1: Basic Cultural Awareness (BCA); 39.2% points to level 2: Advanced Cultural Awareness (ACA); and finally, 12.3% is related to the number of the participants' qualitative responses that contain level 3: Intercultural Awareness (ICA).

Table 14

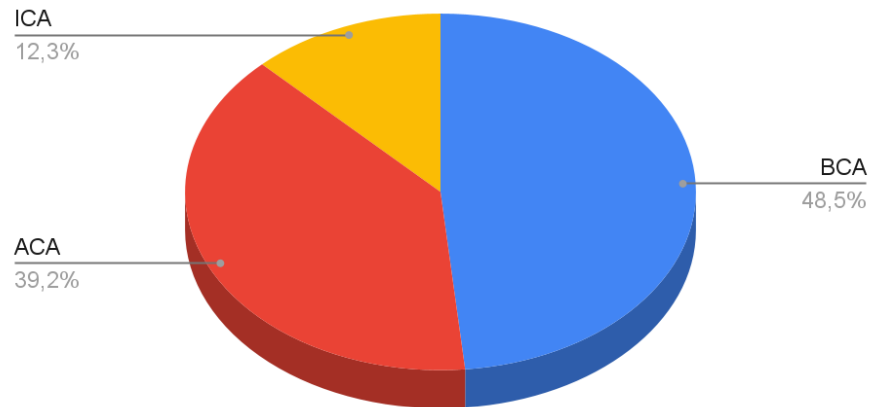
Final intercultural awareness questionnaire results: cognitive and pragmatic dimensions

Dimensions	n	Post-Test M (SD)
Cognitive	20	5.367 (0.569)
Pragmatic	20	5.251 (0.923)

Note. Data collected by the author.

Figure 3

Pie graph on participants' qualitative intercultural awareness manifestations (After implementation)



Note. Research results obtained from the intervention. Data collected by the author.

Level 1: Basic Cultural Awareness (BCA)

Conceptions and manifestations of culture (Family influence)

After the COIL intervention, participants were able to reflect again on the nature of culture, addressing its elements and the influence it has on each community. Hence, students expressed how behaviors can vary depending on where people were born (community of origin) (Byram et al., 2002; Baker, 2011). In reference to the previous statement, the participants commented:

“[...] I was born in Popayán and I came here to Cali and, well, my way of speaking from there in Popayán, “Payanés”, has already changed here to “Caleño”. And, well, I think that this does influence, because my customs have changed now to those here, because there the day of the White City was celebrated and here, well, that is already a

different custom.” (Student 16, Final Group Interview 1)

“I think it is very different because, for example, a country that is not Colombia, right? Let’s say, Mexico. And, well, here we are used to eating typical dishes. For example, sancocho, broth, tamal and, well, among others, right? But there in Mexico they eat tacos and all those different things.” (Student 6, Final Group Interview 1)

Both students mention behaviors that are part of their culture and, in turn, compare them with those of other communities. The first student mentions how his way of speaking and customs have been modified by moving to another city, implying that each cultural context influences the behaviors, values, and beliefs of the people who live there. Likewise, the second participant also highlights some of the culinary differences between Colombia and Mexico. Therefore, these comments can be related to Baker’s descriptors 1 and 4, which belong to the Basic Cultural Awareness (BCA), respectively: “An awareness of culture as a set of shared behaviors, beliefs, and values” and “An awareness of others' culturally induced behavior, values, and beliefs and the ability to compare this with our own culturally induced behavior, values, and beliefs.” From these descriptors, it is possible to identify how participants reflect on their own cultural context and easily compare it with other communities, allowing them to explore the values, behaviors, and beliefs of other cultures.

On the other hand, the participants were not only able to draw parallels among some tangible manifestations of other cultures, but they also focused on intangible aspects, such as values and religious beliefs. To illustrate the above, students 7 and 12 stated:

- “I think they [people from other cultures] have similar values, for example because they are humans, although the truth is, people from Africa believe in all those religions, the sun, the moon, the water, they believe that they are gods. On the other hand, we as humans, the common and ordinary ones, we only believe in one God or

also in Mary [...]” (Student 7, Final Group Interview 2)

- “I think we have different cultures. For example, in other cultures they don’t believe in God and in others they do, so they are different. And some cultures are mixed, because it depends on the way the person is taught.” (Student 12, Final Group Interview 2)

From these comments, the influence that family exerts on the students’ perceptions can be seen. This suggests that the participants’ belief in God is related to everything they have been taught at home. So they consider that other communities may have other gods or even question which God they believe in.

Student 7’s comment demonstrates an ethnocentric perception, in which the student acknowledges certain similarities between cultures by saying “because they are humans” but at the same time, he makes a clear distinction by considering his own beliefs as “normal” or “common”. By saying “we as humans, the common and ordinary ones”, he establishes a distinction that excludes other forms of spirituality, such as African religions, treating them as strange or inferior. This reflects an initial stage of intercultural awareness, where there is recognition of the other, but still with implicit judgments. It also demonstrates how cultural identity is strongly influenced by the dominant religion in its context.

On the other hand, cultural values are perceived as shared qualities anywhere in the world, such as respect and love. However, these values depend exclusively on what the family has taught a person, so values can be similar or different. According to this idea, students 4 and 5 stated respectively: “[...] speaking of values, there may be values such as respect, love, affection, that can be shared even on other continents.” and “We also share some [values] because, for example, it depends on how you were educated with your family values [...] So we share some of them and some others not.” (Final Group Interview 2).

The participants' insights suggest that culture is not only something related to the place where they were born such as a specific community, city, or country, but also something completely rooted and influenced by the family and everything it teaches to a person. Participants 4, 7, and 17 commented the following:

“Values, behaviors, and beliefs are connected because... if everyone learns from home, that is, values (...) can apply to behaviors and behaviors to beliefs.” (Student 4, Final group interview 2)

“Your whole family teaches you good things, that you have to be respectful, that you have to be kind, but there may be friends who do not-so-good things, who teach you to tell lies, to hurt other people. And what's good should be preserved, and what's bad shouldn't be kept, because it can hurt us.” (Student 7, Final group interview 2)

“The beliefs of my culture were like religion, which we never lacked, and also respect, and other things like values. And I was also taught that we should help others, and that would be it.” (Student 17, Final Group Interview 3)

In these comments, participants talk about the values, behaviors, and beliefs (mainly religious) they received from home and how they interrelate. Student 7 also mentions a very important factor: decision-making, since even though certain values have been instilled by the family, each person is responsible for choosing between good and bad actions. These contributions relate to Baker's descriptor 3: “An awareness of our own culturally induced behavior, values, and beliefs and the ability to articulate this” (p. 66), since participants were able to reflect on the values transmitted by their families and articulate them with situations in their immediate context, such as the positive or negative influence of their friends. This action manifests the way learners were able to see beyond immediate shallow ideas and get deeper into the conception of culture as an intangible entity and the way it determines people's

perspectives beyond the material domain (Morán, 2001; Fernández et al., 2023).

Level 2: Advanced Cultural Awareness (ACA)

Conceptions and manifestations of culture

Participants perceive cultural values such as respect, and love as shared qualities anywhere in the world, which depend exclusively on what the family has taught a person. For example, students 8, 9 and 12 argued the following:

“[...] speaking of values, there may be values such as respect, love, affection, that can be shared even on other continents.” (Student 8, Final group interview 2)

“We also share some [values] because, for example, it depends on how you were educated with your family values [...] So we share some of them and some others not.” (Student 9, Final group interview 2)

“I would say that values and beliefs can sometimes be the same, especially values because in no country, I believe, have there been different values because we must always teach to value what we have and simple values like respect, love, etc.”

(Student 12, Final group interview 3)

In these comments, students express recognition of the family as the primary cultural group in the transmission of values. Moreover, the idea that values may vary from one group to another also remains open, demonstrating a notion of a dynamic and diverse culture. Furthermore, participants recognize a common ground among cultures: the existence of core values worldwide. However, student 12's comment reflects a universalist view of values, stating, “because in no country, I believe, have there been different values”. The participant believes that principles such as respect and love are shared by all cultures in the same way he sees them in his own cultural milieu. Furthermore, he suggests that, although beliefs may vary, values are the same everywhere in the world. This perception may indicate an openness

to interculturality, but with a certain oversimplification; the student does not fully recognize cultural diversity in the interpretation and practice of these values and the ways cultural perspectives vary geographically and historically (Álvarez Valencia, 2021).

Although learners' statements demonstrate an initial understanding of how these values might be manifested in other communities, participants acknowledge that different cultures can share fundamental values. However, further study would be needed in this regard. These ideas relate to Baker's descriptors 8 and 9, respectively: "An awareness of individuals as members of many social groupings including cultural ones" and "An awareness of common ground between specific cultures as well as an awareness of possibilities for mismatch and miscommunication between specific cultures" (p. 66). In the previous excerpts, the researcher noticed the learners' identification with a social membership and some potential areas of understanding (values, norms) amongst diverse cultural groups. By identifying these factors learners walk a step ahead of basic levels of ICA and start facing the complexity of intercultural relationships.

Level 3: Intercultural Awareness (ICA)

Conceptions and manifestations of culture

After the implementation, participants 5 and 11 came out with some comments such as: "I believe that in Latin America, families tended to focus their punishments on a physical way" (Student 5, Teacher's journal) and "I saw that, in Wisconsin, families tend to focus on dialogue rather than physical punishment" (Student 11, Teacher's journal). These statements showed an identification of similarities and differences with other communities, as Liddicoat (2008) explains in the process of noticing. According to him: "In intercultural language learning, it is important for learners to notice cultural similarities and differences as they are

made evident through language, as this is a central element in intercultural learning beyond the classroom.” (p. 282). Participants began to notice subtle and explicit differences between their own cultural behaviors and their COIL partners. Their curiosity shows an initial step in noticing, as they identified something unfamiliar and began to question it. In this regard, student 5 stated:

“They go to school in whatever clothes they want. In fact, they can even wear pajamas. But here we have to follow the rules, which is our full uniform. And I want to add that here too, in almost all Latin American countries, we also have the bad habit of, for example, parents like our grandparents were taught in a different way, which is not to talk to your parents about what’s happening, but rather, for example, to attack. Our parents too, not all of them, some parents also do the same thing that happened to them when they were little, because we have the bad habit that instead of talking, they immediately hit.” (Student 5, Final group interview 2)

In this narrative, the student reports a marked difference in terms of behaviors and cultural practices. On the one hand, like some of her peers, she expresses the difference in dress code for school, which again highlights the variation in the rigidity or flexibility of rules depending on the community in the school context. On the other hand, based on the workshop on values, behavior, and beliefs during the COIL implementation, the student noticed that the method of correcting children varied substantially from one country to another. In accordance with her international peers, they argued that their parents talk to them, rather than hitting them with a belt or a flip-flop, as some families in Colombia often do. The above relates to Baker’s (2011) descriptor 11: “An awareness of initial interaction in intercultural communication as possibly based on cultural stereotypes or generalizations but an ability to move beyond these through” (p. 66). However, in this case, the generalization emerged after

the interaction with the Wisconsin students. That is, based on what the Colombian participants observed in the work of their international peers and their comments, it was possible to consolidate a stereotype that is not totally certain about all the American population (about the way they are punished) that could perhaps later be modified through another experience using the COIL methodology or getting more information from varied sources.

On the other hand, participants also reflected on the idea of negotiating and mediating between cultures by showing willingness to learn from others and, in turn, teach their own customs. Participants 4 and 5 provided the following answers to the group interview question three: How should we approach people from other cultures?

“To approach people from other cultures, it is very important to be respectful, and not to be shy, because if you are shy you can... You can make socializing with other people difficult, and it is also very important not to make fun of that person, because of the way they speak or how they say things.” (Student 4, Final group interview 2)

“I believe we can approach others... other people with different cultures, uh... respecting each of their beliefs and cultures that come from their homes. And we must maintain stable communication where we never disrespect their cultures. I want to add that we, for example, in the conversation we have, don't have to force them to believe... To believe the same way we do, for example, in our cultures. We shouldn't force them because they already have their own and... And that would also be disrespectful.” (Student 5, Final group interview 2)

What participants expressed demonstrates an emerging capacity to mediate and respect different modes of communication and sociocultural frames of reference, proposing respectful communication. This action is related to Baker's descriptor 12: “An awareness of a

capacity to negotiate and mediate between different emergent socioculturally grounded communication modes and frames of reference based on the above understanding of culture in intercultural communication” (p. 66). The negotiation process is evidenced when participants recognize that each person has distinct beliefs and cultures, which originate from their home, and that a person should not be imposed on the other. This idea demonstrates a reflection on cultural differences and a form of communication based on equality, which involves negotiating how to interact without invalidating others (Byram, 2021; Kramsch, 2015; Liddicoat & Scarino, 2013). Likewise, the mediation process can be seen when participants state that a person should not force others to believe the same thing as him/her or mock someone’s way of speaking. Thus, learners take an active role as mediators to interact with people from other cultures through respect, understanding, and empathy.

Although these statements offer an approach to this descriptor, students must continue to reinforce the importance of respectful intercultural communication, the non-imposition of beliefs, and the appreciation of differences through virtual encounters that foster these skills (Ware & Kramsch, 2005; Fernández, 2019).

Table 15

Initial and final intercultural awareness questionnaire results

Dimensions	n	Pre-Test M (SD)	Post-Test M (SD)	Paired Sample T-Test t (df) = p
Cognitive	20	5.192 (0.531)	5.367 (0.569)	-1.644 (19) = Sig 0.117
Pragmatic	20	4.950 (1.334)	5.251 (0.923)	-0.856 (19) = Sig 0.403

Note. Data collected by the author.

The interpretation of this table is the following: COGNITIVE DIMENSION: The slight increase suggests a small positive trend, but $p > 0.05$, meaning it could be due to

chance. So, no statistically significant improvement in knowledge-based (cognitive) intercultural awareness. PRAGMATIC DIMENSION: The increase is larger than in the Cognitive dimension, but $p > 0.05$, so not statistically significant. The SD decreased (1.334 $\rightarrow$ 0.923), suggesting participants became more consistent in their responses after the intervention. So, no statistically significant improvement, but practical (pragmatic) skills showed a notable trend toward improvement.

So, in general, it can be concluded that there are no statistically significant changes in either dimension ($p > 0.05$). The possible reasons for non-significance may be: small sample size ($n=20$) which points to low statistical power or short/weak intervention which may not have been strong enough to produce measurable change. High pre-test scores (especially Cognitive) $\rightarrow$ Limited room for improvement ("ceiling effect"). Encouraging trends: Pragmatic scores improved more than Cognitive, and variability decreased, suggesting some practical skill development.

The initial survey yielded a test mean of 5.192 in the cognitive dimension with a standard deviation of 0.531, while the pragmatic dimension of the same survey yielded the test mean of 4.950 with a standard deviation of 1.334. The results of the final survey yielded a value of 5.367 in the first dimension with a standard deviation of 0.569, and in the pragmatic dimension a value of 5.251 with a deviation of 0.923. A comparison of these values reveals that they correspond to the high level of Basic Cultural Awareness determined by the researcher ([Table 11](#)), both before and after the implementation of the COIL module. Although in both dimensions it is reflected that there was no significance in statistical terms (cognitive dimension, $p=0.117$ and pragmatic dimension, $p=0.403$), the minimal increase in the averages showed that although the participants already had certain notions that facilitated openness and understanding towards intercultural relations, the implementation of the module

not only allowed the level to be maintained, but through its manifestations it was possible to notice the three levels of intercultural awareness proposed by Baker (2011) and the way this pedagogical implementation fostered the students' ICA.

In conclusion, the findings found after the implementation of the COIL module show that, in this final stage, students were able to broaden their perspectives and even explore the stereotypes that may have arisen regarding the customs of North American students. These results suggest the need to implement future telecollaborative pedagogical proposals that would allow participants to delve deeper into these stereotypes, either to corroborate or perhaps modify their perceptions (Álvarez & Fernández, 2018; Fernández, 2017; 2019). Furthermore, participants showed an open and receptive attitude toward cultural exchange with people from another community, which showed a potential level of intercultural awareness that can be developed and strengthened over time.

5.2. Objective 2: Analysis of environmental issues

During the implementation of the COIL module, two main axes were considered: culture and environment. This section analyzes the second axis, which was addressed during the development of this pedagogical proposal. This analysis included students' artifacts, the teacher's journal, and the final group interviews. Finally, the general perspectives were classified into two macro categories: 1) Environmental issues identification and proposal of possible solutions, and 2) Learners' environmental role.

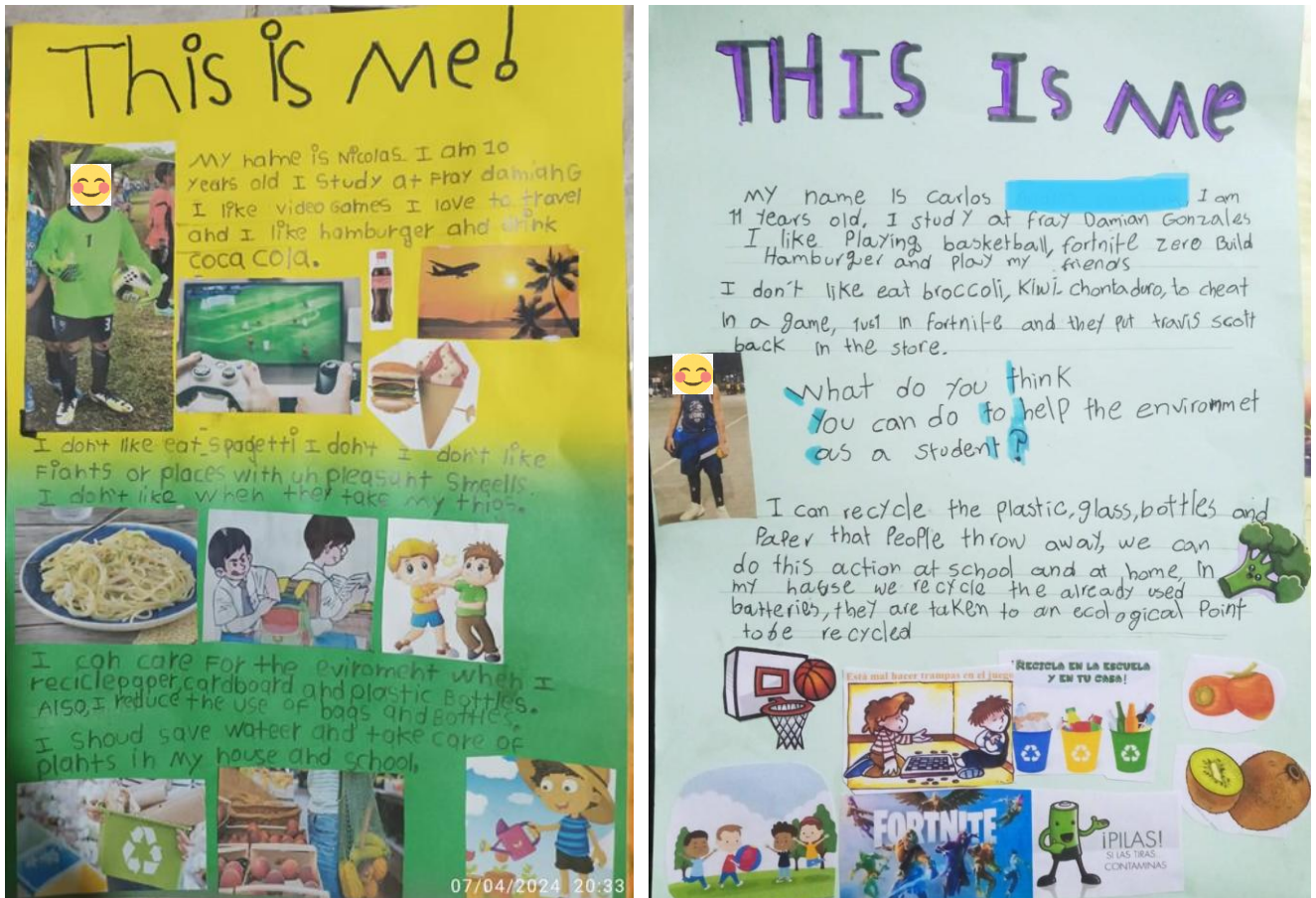
5.2.1. Environmental issues identification and proposal of possible solutions

After analyzing students' responses, it was possible to find two big perspectives about caring for the environment: Individual and collective actions. On the one hand, the participants proposed individual and achievable actions to care for the environment which

they can carry out in their daily lives. This demonstrates their commitment to the environment as potential agents of change in spaces such as home and school.

Figure 4

Students' environmental posters



Note. Posters created by students. Those should have two sections: each student's personal presentation and the actions to care for the environment.

In these posters, Colombian students briefly introduced themselves and then, they answered the following question "What can you do to take care of the environment as a student? Based on their responses, the researcher analyzed the information provided and how (from their role as students) participants took care of the environment. They expressed simple actions that they could perform as students, for example: recycling paper, cardboard, plastic bottles, and glass; making recycling campaigns at school; using reusable products (bottles,

cloth bags); saving water (turn off the tap while washing your hands, don't waste water); energy saving (turn off lights and appliances when not in use); using of sustainable transport (bicycle, public transport); planting and care of trees and plants; proposals for meetings with the school coordinator for environmental activities; and do not harm plants and animals. To exemplify the above, participants 5, 10, and 18 said respectively:

- “As a student I can reduce my carbon footprint by going around the school with my classmates collecting the garbage that is on the ground or grass and we separate the plastics from the recyclable waste, so we can recycle and at the same time collect the pollution. As a daughter I can use light only when I need it to reduce light pollution.” (Student 3, Oral presentation)
- “I would do a recycling campaign at my school to reduce my and others’ carbon footprint, learning to reuse by exchanging books and toys with everyone.” (Student 10, Environmental poster)
- “I can recycle the glass and paper plastic bottles that people throw away. We can do this action at school and at home. In my house, they will recycle their already used batteries. They take them to an ecological point to be recycled.” (Student 18, Environmental poster)

The above shows that students are capable of identifying the environmental problems that surround them and, despite their young age, propose actions that they can carry out in their daily lives and thus contribute to the environment.

On the other hand, it is possible to notice the participants’ awareness through more complex and collective proposals to protect and help the environment. Although it is not easy for them to carry out these actions independently from their role as students, some ideas and initiatives to contribute to the environment are visualized. Among these ones we can find the

following: creation of campaigns to reduce the carbon footprint; using illustrative brochures in their neighborhoods to educate about the environment; developing community activities for the cleaning and conservation of the environment; participation in environmental awareness campaigns; educating other students and families about caring for the environment and garbage collection in rivers and public areas. In this regard, participants 8, 14 and 16 argued that:

- “[...]at home [...] supporting a campaign to respect the environment, among others”
(Student 8, Environmental poster)
- “ (...) Effective mitigation measures could be greater: Use public transport, Replacement of liquid fuels with compressed natural gas and use of bicycles.”
(Student 14, Oral presentation)
- “Create a campaign to reduce carbon footprint I can also recycle we can have the environment with illustrative brochures to save the environment. I can also help by recycling oil. [...]” (Student 16, Environmental poster)

According to what students said, it is possible to identify a tendency toward nature care understanding, even with actions that are beyond individual participants’ reach. These elements suggest a potential students’ involvement in the solution and prevention of environmental and global issues, possibly encouraged from home and school.

Seeing the students’ answers, we can observe a tendency towards individual and small group actions instead of collective, economic or political measures to take care of the environment. This might be due to the learners’ young ages, the social context where they live (a medium-size city characterized by violence and individualism) and their school level in which environmental and political education is still in its early stages.

Despite these small-group proposals, the impact of COIL is evident by observing the

way each activity promoted the participants' engagement and recognition of environmental issues. In this sense, students 4 and 16 said:

“We need to reduce our carbon footprint, Wisconsin students talked about using cold water and reducing the use of alligator boots.” (Student 4, Final group interview 2)

“I think they transport fewer animals than we do because here in Colombia we have hippos, and if we don't transport them now, there will be more than a thousand of them by 2035, and that would affect our wildlife.” (Student 16, Final group interview 1)

Student 4 mentions the case of hippopotamuses in Colombia, which reflects a concern about the impact of invasive species on the ecosystem. This comment also identifies a problem related to exotic fauna that affects the country's environmental balance and biodiversity. This comment shows the connection between a local situation and its potential future consequences for society. The second comment by student 16 points to a concern for responsible consumption and environmental sustainability, which are part of global social issues. Therefore, this statement reflects an understanding of how everyday habits could be linked to climate change and environmental impact. Both comments reflect how participants identify social problems from a critical and intercultural perspective, recognizing both local realities and global practices that affect the environment.

The students' answers are also connected with a critical view of interculturality in which learners are also subjects of emancipatory power who have the responsibility to bring social change to their communities and break the chains of colonial oppression (Walsh, 2009; Mignolo, 2012). In the present study, the critical dimension is tangible through the analysis of environmental issues that have been brought up by international companies and colonial powers that have disregarded the natural balance of earth in behalf of economic power (Albán

& Rosero, 2016). Therefore, seeing young learners acknowledging their own role as change agents and proposing solutions for the current environmental crisis (solutions that are far from reaching a pivotal global transformation) is a step forward in the construction of a decolonial and intercultural project of society, a project where all communities, creeds, peoples, and cosmologies have a word.

This research especially addressed the concept of coloniality of being (Walsh, 2012) by giving Colombian children a voice in online interactions with American students; American students who come from a capitalist and white-centric political and cultural system. Having these learners interacting at the same level helped to break this type of coloniality through the use of the word and the possibility to work together in terms of equality and respectful collaboration. Similarly, coloniality of power was redirected (Walsh, 2007; Walsh, Mignolo & García, 2003), showing Colombian students that they also had power of action to transform the world from their local and personal actions, of course, again, from a limited scope aligned with their own realities as children.

5.2.2. Learners' environmental role

Approaching other cultures enables not only the recognition of interpersonal relationships but also the identification of similarities present there (Liddicoat, 2008). In this stage, following Liddicoat's proposal (2008) learners examined their similarities and differences with their American classmates, analyzed their ideas about their American classmates, and interacted with them. That is why, after the implementation of the COIL module, participants were able to explore and compare their ideas about people from Wisconsin and their cultural and environmental practices with their own. In this way, participants realized that these actions overlapped with those of the American students on

several occasions, which also generated wonder and curiosity in them. Among the similarities found about caring for the environment, the following ones were highlighted: saving electricity, using less plastic, unplug devices when they are not being used, etc. (Teacher's journal, April 10th, 2024; May 27th, 2024).

According to the similarities found, participants 5, 12, and 16 express the following ideas in terms of attitudes and actions of environmental conservation:

“They turn off the lights when they don't need them (...) and they turn off the water when they don't need it. And yes, I noticed that.” (Student 5, Final group interview 2)

“(...) And it also has similarities such as throwing away the trash, turning off the lights when we are not using them, disconnecting technological devices when we are not using them and also how we can reduce our carbon footprint.” (Student 12, Final group interview 2)

“And the similarities would be that they talked about saving energy and so did we, also saving water and reducing red meat consumption.” (Student 16, Final group interview 1)

In these statements, participants were able to identify simple actions that benefit the environment, both in their own community and in that of the international participants. For example, reducing the consumption of red meat, turning off lights when not in use, turning off the tap, and unplugging technological devices, among others. Additionally, as observed and recorded in the researcher's journal, students mentioned “we must not litter in the ocean, and we should fly less” (Teacher's journal). These comments emerged when we were discussing the public transportation theme. This was due to the fact that fuel use affects the ozone layer.

These similarities found by participants between themselves and their international

peers showed intercultural awareness' manifestations that relate to Level 2: Advanced Cultural Awareness (BCA) proposed by Baker (2011) which refers to an understanding of the complexity of cultural affiliations and identities, and the ability to reflect critically on culture and its role in communication. Those statements point to descriptor 7 of this level, which affirms: "Multiple voices or perspectives within any cultural grouping" (p. 66). It means that a person is able to detect and value both similarities and differences between communities, which promotes values such as empathy and respect in their intercultural relationships. Based on this idea, students were able to identify similarities in behaviors that transcend culture, pointing to environmental responsibility in everyday actions. This demonstrates a recognition of shared values and promotes advanced cultural awareness.

On the other hand, participants were also able to detect differences after implementing the COIL module, which focused not only on environmental actions but also on cultural ones. Regarding the latter, students 16, 13, and 8 said the following comments as an answer to the group interview question 8: Were you able to notice any differences or similarities between you and your classmates at school in Wisconsin? Which ones?

"Well, I think the differences, the first is that they wore clothes and we wore uniforms." (Student 16, Final group interview 1).

"I say we got disorganized because I counted them there and I think there were like seven and here there are twenty-three." (Student 13, Final group interview 1).

"I saw that they are different when it comes to dressing, but when we go out, for example, they dress the same as us when we go out, for example, and that their classroom is different, it's more modern, and that supposedly the chairs are more comfortable because they are like hammocks." (Student 8, Final group interview 2)

In these statements, participants express the differences they found. While some are

more superficial than others, they reflect the students' observations as a result of the telecollaborative intervention, such as the description of the type of clothing they wear and some aspects of the classroom. However, participant 13 goes beyond the superficial aspects and mentions an important difference regarding behavior, associating the participants' disorderliness with the number of students per classroom. This demonstrates that participants notice the different cultural practices established by each community, in this case, the informal expression of style in the Wisconsin high school compared to the more rigid rules regarding uniforms in their Colombian school setting; as well as the influence that the number of students in the classroom can have on class dynamics.

This identification of differences is directly related to Baker's (2011) descriptor 5, proposed in the ACA level: "The relative nature of cultural norms" (p. 66) which addresses the idea that cultural norms vary according to the social context. Therefore, what is considered "normal" in one context may not be so in another one. However, this does not imply that one of the two forms is superior or inferior to the other, but rather that each community has its own cultural values and practices.

In conclusion, participants were able to compare that although both communities were different, both groups identified cultural and environmental issues. This demonstrates that there is indeed recognition of others and their different ways of acting, as well as the possibility of comparing these actions with those of the participants themselves. However, it should be noted that these comparisons were not very in-depth or detailed.

Limitations

Despite the positive results of this research, some obstacles were experienced during its development. First, the lack of an official course in the American school reduced the possibility to interact with more international learners and carry out more interactive experiences. The fact that the interaction occurred with an extracurricular class instead of a regular course limited the options for further analysis and exploration of deeper dimensions in intercultural exchanges. Second, the scarce time devoted per week and the number of learners per classroom did not allow more profound contact with the American peers and made impossible a closer relationship among students from both countries. Third, the rule against the use of the students' cellphones did not allow a more creative and free environment for international exchanges, which only happened through the teachers' device and closed the options for additional multimodal resources useful with young learners. Fourth, the absence of a specialized classroom with adequate equipment limited opportunities for closer interaction. Fifth, the school's interruptions due to extracurricular activities reduced the time devoted to this project and the possibilities for additional exploration of cultural phenomena and even interactions with the international classmates.

Although these limitations appeared during the implementation of the project, the findings show the need to implement more telecollaborative experiences and integrate the intercultural dimension in the EFL curricula from a critical perspective.

Conclusions

Interacting with people from other cultures does not necessarily imply the development of intercultural awareness. However, telecollaborative pedagogical approaches focused on COIL embody an alternative to promote students' intercultural skills by integrating the intercultural dimension into technology-mediated environments for pedagogical purposes. Having said that, this study aimed to determine the impact of a telecollaborative pedagogical approach on the intercultural awareness of a group of fifth-grade students. To achieve this overall objective, two types of analysis were conducted: quantitative and qualitative. First, the researcher quantitatively analyzed the results obtained from the intercultural awareness questionnaires. Second, participants' statements from their products, interviews, and the teacher's journal, about their experience in the COIL module and what they learned regarding several topics such as culture, the environment, and others were qualitatively analyzed.

On the one hand, the first specific objective focused on identifying the participants' level of intercultural awareness and their expressions of it before, during, and after the implementation of the telecollaborative pedagogical proposal. By examining and analyzing the intercultural awareness questionnaires, which were based on Level 1: Basic Cultural Awareness proposed by Baker (2011), the researcher discovered that the students had a high level in the aforementioned level, as shown in the results of the questionnaires. However, although no statistically significant improvement was observed in the cognitive and pragmatic dimensions, the qualitative analysis revealed a noticeable inclination toward expressions of intercultural awareness. This suggests that students were able to maintain their original perspectives and even go a step further. Moreover, by qualitatively analyzing the students' manifestations, it was possible to demonstrate the three levels of intercultural awareness

throughout the three moments of implementation: before, during, and after. These expressions revealed themes such as eagerness to learn about other cultures, participants' conception of culture, intercultural relations, and environmental awareness. These, in turn, converged into subthemes that contributed to strengthening the participants' intercultural skills.

The second specific objective of this study focused on exploring the influence of implementing a telecollaborative pedagogical approach on participants' perceptions of their role in preventing and solving environmental problems in their community. In this regard, participants described the telecollaborative experience as interesting and enriching, in which they were able to learn about the environmental practices of Wisconsin students.

Furthermore, throughout both synchronous and asynchronous sessions, students followed the four cognitive processes described by Liddicoat (2008): noticing, comparing, reflecting, and interacting. Although these processes do not always occur linearly, participants were able to engage with them at different times, which helped them identify the international peers' environmental practices, find similarities and differences with their own, reflect on why this might happen, and interact synchronously to confirm or refute their interpretations, positioning themselves as potential agents of environmental change from their role as students. However, among the students' comments, a limitation was also found regarding the synchronous sessions for establishing successful interactions and actively participating with the North American students, such as the limited use of English.

Likewise, it is important to mention that these types of intercultural telecollaborative proposals help students recognize fundamental aspects of other cultures, and more importantly, their own, through a deeper understanding of the values, behaviors, and beliefs of both communities. Telecollaborative proposals using COIL, constitute an alternative to

foster intercultural communication and the development of intercultural skills: aspects that are highly necessary in today's globalized world, not only for university students but also for children and adolescents.

Finally, developing and implementing telecollaborative pedagogical proposals in primary and secondary educational contexts promotes the recognition of others as part of a global society and provides the opportunity to work on students' intercultural awareness. Therefore, adopting an intercultural perspective in teaching and telecollaboration can promote the development of intercultural skills, improving the understanding and interpretation of the phenomena and relationships that exist between different cultures, as well as providing alternatives for students' integration as global citizens, aware of the role that each one plays from an early age in today's fast-paced, multicultural world.

Further research must examine the teachers' role in the design of telecollaborative experiences, the implementation of COIL modules at cross curricular level, with learners from elementary, high school and even college, the integration of multimodal pedagogies in telecollaborative environments in schools and the exploration of critical interculturality with elementary learners. Tandem learning and artificial intelligence are other areas that deserve future attention from teachers and academic administrators. So far, this study showed how fruitful the telecollaborative dimension can become when framed inside a critical intercultural approach for language teaching.

Pedagogical implications

This study provides a telecollaborative pedagogical approach that promotes the development of intercultural awareness in fifth-grade students within a Science class. This experience allowed learners to interact with peers from other cultural backgrounds, share perspectives on environmental issues, and reflect on their own values, behaviors, and beliefs.

Telecollaboration, especially COIL, was established as an authentic space for intercultural communication, where the use of English was not an end in itself but a means of meaningful interaction. Furthermore, it was shown that integrating and addressing curricular content, as in the case of the Science subject, along with intercultural objectives enhances both language learning and critical understanding of various topics.

This study can serve as a basis for future EFL practices by showing that it is possible to design pedagogical proposals that integrate telecollaborative and intercultural project-based approaches. This research also demonstrates that students, even in early ages, are capable of developing dialogue skills and intercultural awareness when offered authentic, guided, and contextualized experiences. This invites other teachers to rethink their practices from a critical perspective, in which learning a foreign language not only tests linguistic competencies but also attitudes of openness, respect, and empathy toward other cultures.

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Appendices

Appendix A

Table A1

Intercultural awareness questionnaire

CUESTIONARIO INICIAL DE CONCIENCIA INTERCULTURAL

Objetivo del instrumento: Determinar el nivel de conciencia intercultural de un grupo de estudiantes de grado 5° de un colegio privado de Cali.

Nombre:						
DESCRIPTORES	Lo logro con mucha facilidad	Lo logro con algo de esfuerzo	Lo logro con dificultad	Por el momento no lo puedo lograr, pero me interesa lograrlo	No lo puedo lograr	No puedo lograrlo y no me interesa hacerlo
1. Tengo una idea clara de lo que significa la palabra cultura.						
2. Creo que la cultura incluye más de un elemento (por ejemplo: <i>costumbres, tradiciones, etc.</i>)						
3. Puedo reconocer los valores, comportamientos y creencias de mi cultura (Por ejemplo, <i>las comidas usuales en las fiestas o las creencias que son importantes para nuestra familia</i>).						
4. Sé que debo respetar las diferencias de otras personas cuando tienen ideas diferentes sobre cosas como deportes, religión o música.						
1. Reconozco que la forma de ver el mundo puede ser diferente dependiendo de cómo crecimos y qué costumbres tenemos.						
2. Noto que la forma en que la gente a mi alrededor actúa puede influir en cómo yo también actúo. (Por ejemplo: <i>si todos tus amigos están emocionados por algo, es posible que también te emociones.</i>)						
3. Creo que la comunidad donde crecí influye en cómo veo a las personas de otras comunidades y culturas.						
1. Creo que mis costumbres y las cosas que hago están influenciadas por cómo crecí y lo que aprendí de mi familia y comunidad. (Por ejemplo, <i>si en tu familia siempre se celebra una fiesta especial (los cumpleaños o la navidad) de una cierta manera, es probable que tú también lo hagas cuando seas mayor</i>).						
2. Pienso que las cosas en las que creo y mis opiniones sobre las cosas a mi alrededor están conectadas con lo que mi familia y comunidad consideran importantes. (Por ejemplo, <i>si tu familia siempre habla sobre la importancia de ser amable con los demás, es posible que tú también pienses así</i>).						
3. Considero que puedo ayudar a resolver problemas en mi entorno, como en mis clases o con mis amigos.						
1. Reconozco que la forma en que otras personas hacen las cosas puede cambiar con el tiempo.						
2. Creo que las personas de otras comunidades y culturas pueden tener costumbres y cosas importantes que son diferentes a las mías. (Por ejemplo, <i>en algunas comunidades, es normal comer ciertos alimentos que en mi comunidad no se comen / usar formas de vestir que no se usan aquí</i>).						
3. Considero que algunas personas de otras comunidades y culturas tienen valores que son diferentes, pero no necesariamente mejores o peores que los míos.						
4. Puedo notar las diferencias entre cómo actúan las personas de diferentes comunidades y culturas y cómo actúo yo.						

Note. Questionnaire created by the author based on Baker's BCA descriptors.

Appendix B: Students' artifacts

Figure B1

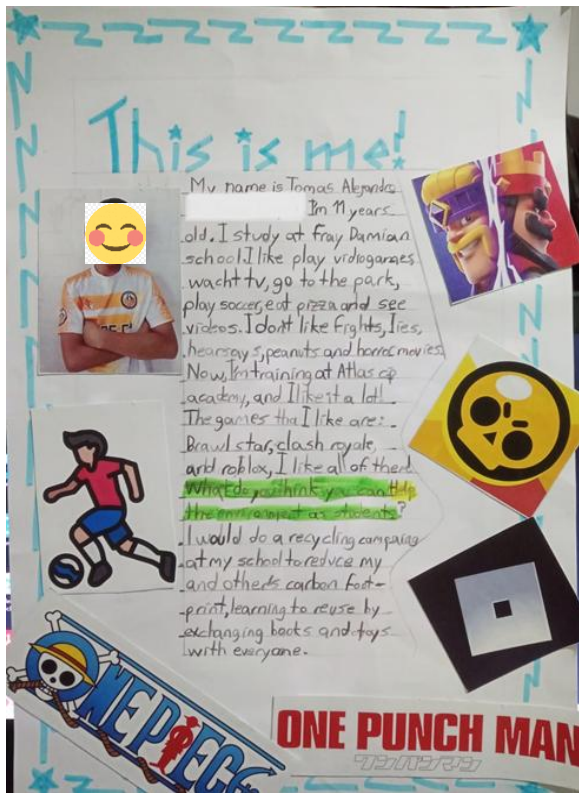


Figure B2

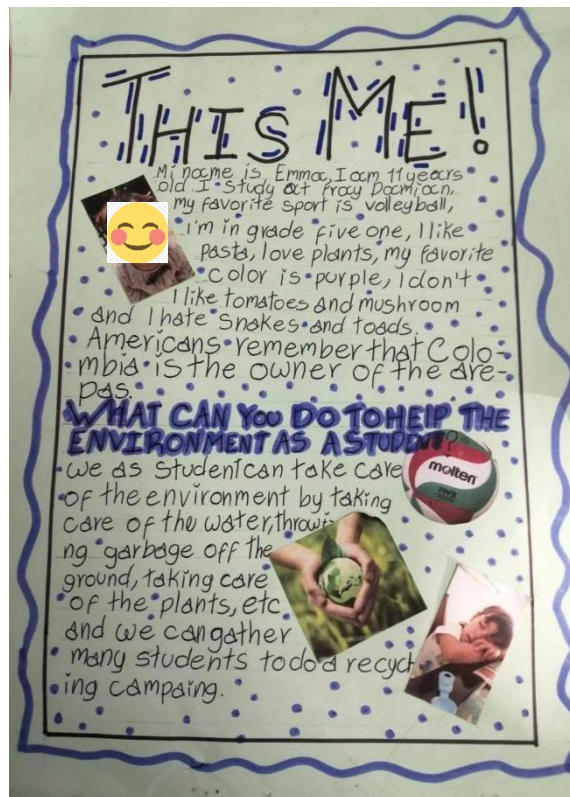


Figure B3

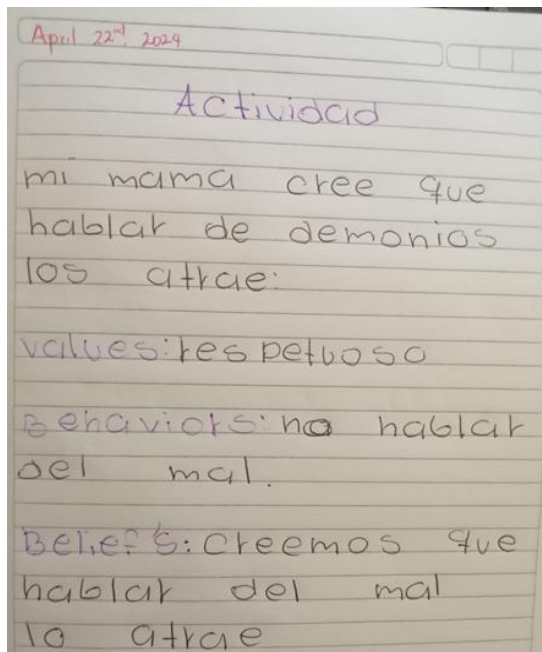
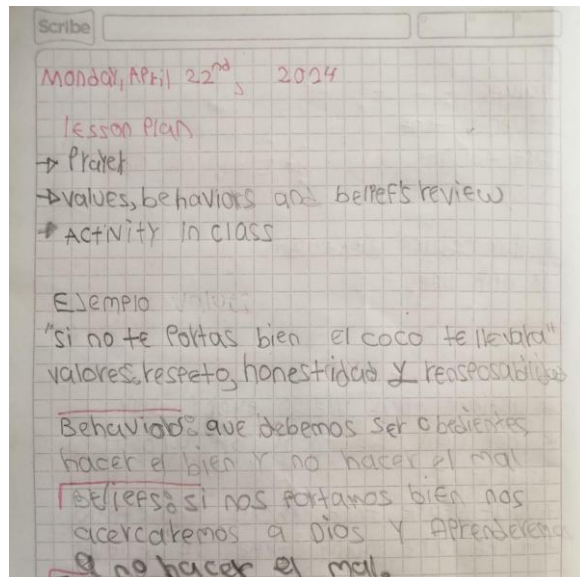


Figure B4



Note. Students' artifacts created in 2024.

Appendix C

Table C1

Mini-questionnaire - Synchronous meeting 2 (COIL)

Name: _____ **Date:** _____

Descriptorios culturales	Totalmente de acuerdo	De acuerdo	Ligeramente de acuerdo	Ni de acuerdo ni en desacuerdo	En desacuerdo	Ligeramente en desacuerdo	Totalmente en desacuerdo
Aprendí sobre la cultura de los estudiantes de Wisconsin.							
Aprendí que la cultura de las personas está relacionada con sus comportamientos.							
Pude reconocer los valores, comportamientos y creencias culturales de los estudiantes de Wisconsin.							
Aprendí que debo respetar las diferencias de otras personas cuando tienen ideas diferentes.							
Descriptorios ambientales	Totalmente de acuerdo	De acuerdo	Ligeramente de acuerdo	Ni de acuerdo ni en desacuerdo	En desacuerdo	Ligeramente en desacuerdo	Totalmente en desacuerdo
Entendí cómo los estudiantes de Wisconsin cuidan el medio ambiente.							
Aprendí sobre los comportamientos ambientales de los estudiantes de Wisconsin (reciclar, sembrar árboles, etc.)							
Aprendí cuáles son las causas de los comportamientos ambientales de los estudiantes de Wisconsin.							
Noté los comportamientos							

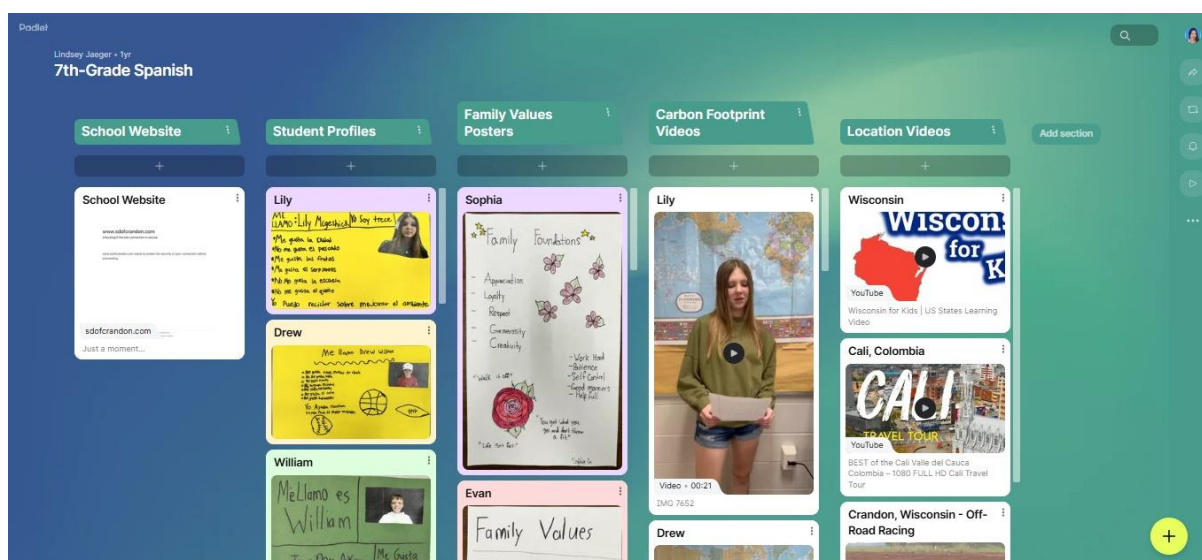
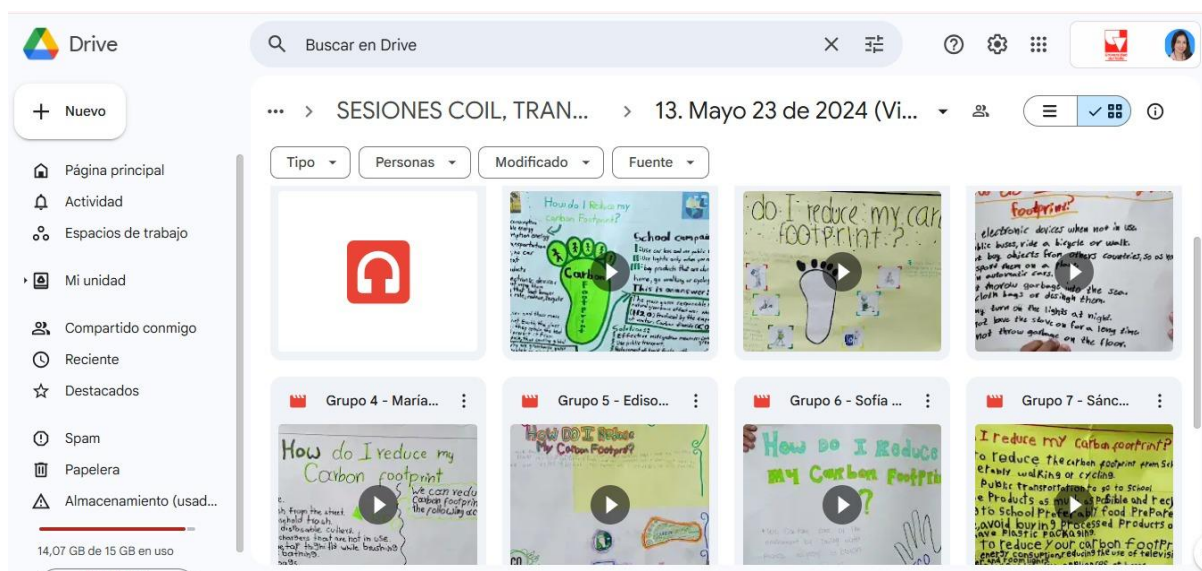
que tienen los estudiantes de Wisconsin para cuidar el medio ambiente. Indique si son <u>similares</u> o <u>diferentes</u> y dé ejemplos según su respuesta.							
Descriptoros afectivos	Me sentí muy bien	Me sentí bien	Me sentí ligeramente bien	No sentí emociones	Me sentí regular	Me sentí mal	Me sentí muy mal
¿Cómo te sentiste en la clase virtual de hoy?							
¿Cómo te sentiste interactuando con tus compañeros de Wisconsin?							
¿Cómo te sentiste realizando las actividades de la clase?							
¿Cómo te sentiste con relación al tema tratado en la clase virtual de hoy?							

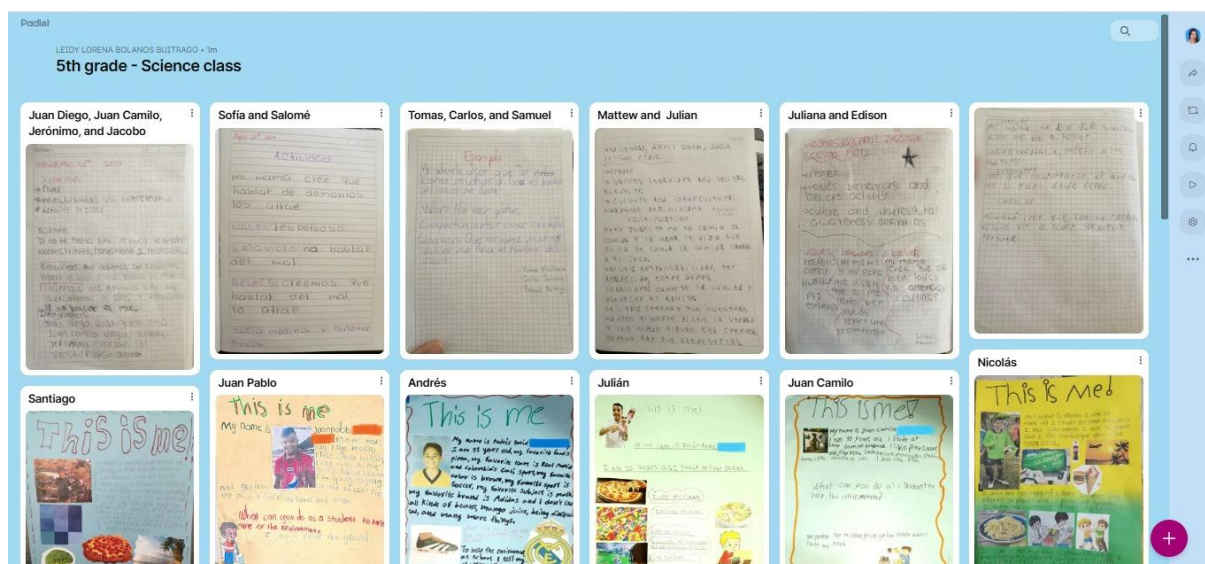
Note. Mini-questionnaire implemented after the second synchronous meeting in May 2024.

Appendix D

Figure D1

5th and 7th grade students' oral presentations





Note. Recorded presentations uploaded to Padlet and Google Drive.

Appendix E

Table E1

Field diary format

Field diary Researcher: Leidy Lorena Bolaños Buitrago	
Date:	
Number of students:	
Objective	
Class activities description	
Students' comments	
Perceptions evidenced in class	
Difficulties presented in class	
Other observations	

Note. Author's creation based on research.

Appendix F

Table F1

COIL module extract

Fray Damián González School - Science Course Mondays and Wednesdays, from 1:45 - 2:40 p.m.	School District of Crandon - Spanish Club.	Start date: April 1st, 2024	End date: May 29th, 2024			N° of students: 21 Age: 10-11 year old kids Sex: 15 males, 6 females. Social class: Middle, working class. Nationalities: Colombian. Native language: Spanish	N° of students: 10 Age: 12-13 year old kids Sex: 7 males, 3 females. Social class: A mix between middle, working, and lower class. Nationalities: All American: Caucasian: 7, Native American: 3. Native language: English
Total length							
Stage	Focus	Topic	Lenght	Dates		Online meetings	Tasks
Stage 1	Introduction	Introducing myself.	1st week	Monday, April 1st	X	Students' offline encounters (school class)	Initial intercultural questionnaire application. Options for introducing themselves: (A) In groups of three or four people will record a video with 5 things about their personal information. Then, the teacher will upload the videos to a specific platform and students will watch the other's course videos. (B) Each student writes a description of 100 words in English where they present themselves and paste a picture of themselves. (C) Posts with things they like and paste pictures about what represents them. At the end of the videos or posters students must answer the following question: What do
				Wednesday, April 3rd			Students will watch a video about Wisconsin to know about the other participants' context. Then, we will talk about what they think about it, what were the aspects that they liked the most and why.
Stage 1	Introduction	Culture, values, behaviors and beliefs.	2nd week	Monday, April 8th	X	Students' offline encounters (school class)	Students prepare posters about themselves during the class.
				Wednesday, April 10th	X	Student's online encounter (synchronous meeting)	For this session, each student must have watched 4 videos or read 4 posts of the other group and during this online encounter, students will discuss the similarities and differences they found on them. Then, they will address their position about how they help the environment. Are these similar or different? For this activity, students will write similarities and differences in their notebooks.
Stage 1	Practise	Culture, values, behaviors and beliefs.	3rd week	Monday, April 15th		Students' offline encounters (school class)	During this session, students will start with brainstorming about the following concepts: "culture", "values" "behaviors" and "beliefs". After this activity, the teacher will provide the definitions, examples, and their relation with culture. It will continue next class.
				Wednesday, April 17th	X	NO CLASS	X
Stage 2	Teaching	Culture, values, behaviors and beliefs.	3rd week	Monday, April 22nd	los valores, comportamientos y creencias de mi cultura (Por ejemplo, las comidas)	Students' offline encounters (school class)	Activity in class: Written activity about values, behaviors, and beliefs in our native language. During this session, students will write in groups of 3 about how they behave in some situations, what values and beliefs they were taught, and how they can relate them to culture.
				Wednesday, April 24th		Students' offline encounters (school class)	They will continue working on their written activity. After that, the teacher will continue working on intercultural awareness and carbon footprint concepts too.

Note. Authors' creation based on students and research needs.

Appendix G

Consent form

Formato de consentimiento informado

Proyecto de investigación: 5th graders' manifestations of intercultural awareness after the implementation of a telecollaborative pedagogical proposal focused on environmental problems.

El estudiante ha sido invitado(a) a participar en el estudio “5th graders' manifestations of intercultural awareness after the implementation of a telecollaborative pedagogical proposal focused on environmental problems”, que tiene por objetivo determinar el impacto de una propuesta pedagógica telecolaborativa enfocada en problemáticas ambientales en la conciencia intercultural de un grupo de estudiantes de 5to grado de un colegio privado de Cali.

Dado que el estudiante hace parte de este curso, amablemente solicito su colaboración como participante voluntario(a) de esta investigación. A continuación, se entrega la información necesaria para tomar la decisión de participar voluntariamente. Utilice el tiempo que desee para estudiar el contenido de este documento antes de decidir si va a participar del mismo.

Si ustedes como acudientes deciden conceder el permiso para que el estudiante sea parte de este estudio, su participación consistirá en el diligenciamiento de una serie de cuestionarios a lo largo de dos meses, la participación en un grupo focal al final del curso y la autorización para usar los trabajos desarrollados y entregados en las clases sobre la dimensión intercultural como fuentes de datos para la presente investigación. El tiempo del estudio es de aproximadamente ocho semanas. Cabe resaltar que las actividades de la clase no se verán afectadas pues se diseñarán de tal forma que se relacionen con los temas necesarios a abordar durante el tercer periodo académico.

Su participación es totalmente voluntaria, aunque el estudiante acepte participar en este estudio, tiene derecho a abandonar su participación en cualquier momento, sin temor a ser penalizado(a) de alguna manera. No obstante, dado que los trabajos y actividades de la clase son parte del desarrollo de la asignatura, estos se

deberán entregar siguiendo los lineamientos propuestos independientemente de su decisión de participar o no en el presente estudio. En caso de no aceptar participar en esta investigación o retirarse, simplemente sus trabajos no serán incluidos en los datos a analizar. La información será tratada con total confidencialidad y anonimato y los datos serán usados exclusivamente con fines académicos.

El estudiante no se beneficiará directamente por participar en este estudio. La investigadora y la comunidad académica, sin embargo, podrán saber más sobre el impacto de las estrategias pedagógicas telecolaborativas y su rol en la conciencia intercultural de los estudiantes sobre temas ambientales, en clase de Science. Asimismo, la sociedad en general se beneficiará de este conocimiento. La participación en este estudio no conlleva costo para el estudiante, y tampoco será compensado(a) económicamente.

La participación en este estudio es completamente anónima y el investigador mantendrá su confidencialidad en todos los documentos. En cuanto a los trabajos entregados, el acceso a estos estará restringido tan pronto finalice la etapa de recolección de datos y dichos datos también serán almacenados exclusivamente por el investigador. Los/as participantes tendrán acceso a los datos por ellos/as siempre que lo deseen y hagan la correspondiente solicitud.

Tan pronto los datos hayan sido analizados y se genere algún tipo de producción intelectual, quienes lo deseen y lo manifiesten de forma explícita en un correo electrónico, recibirán una copia del informe final de esta investigación.

Los resultados de esta investigación serán utilizados para publicaciones en revistas científicas, fines académicos, presentaciones en congresos, simposios y eventos académicos nacionales y extranjeros.

Si usted tiene preguntas sobre la participación del estudiante en este estudio puede comunicarse con la investigadora responsable, la Licenciada Leidy Lorena Bolaños Buitrago docente de Science y Math en grado 5° del Colegio Franciscano de Fray Damián González, al correo electrónico: leidylorena.bolanos@fraydamian.edu.co

ACTA CONSENTIMIENTO INFORMADO

Yo
 acudiente del estudiante autorizo su
 participación de forma voluntaria y anónima en el Proyecto de Investigación “5th graders’ manifestations of
 intercultural awareness after the implementation of a telecollaborative pedagogical proposal focused on
 environmental problems”, dirigido por la Licenciada Leidy Lorena Bolaños Buitrago investigadora
 responsable y docente de Science y Math en grado 5° del Colegio Franciscano de Fray Damián González.

Declaro haber sido informado/a de los objetivos y procedimientos del estudio y del tipo de participación. En
 relación a ello, acepto que mi hijo/a responda los cuestionarios relacionados con el estudio, participe en la
 sesión de grupo focal y se permita el uso de sus trabajos en clase relacionados con el presente estudio.

Declaro haber sido informado/a que la participación en el presente estudio no involucra ningún daño o peligro
 para la salud física o mental, que es voluntaria y que mi hijo/a puede negarse a participar o dejar de participar
 en cualquier momento sin dar explicaciones o recibir sanción alguna.

Declaro saber que la información entregada será confidencial y anónima. Entiendo que la información será
 analizada por la investigadora y que no se podrán identificar las respuestas y opiniones de cada participante
 de modo personal. La información que se obtenga será guardada por el investigador responsable y será
 utilizada solo para este estudio.

Este documento se firma en dos ejemplares, quedando uno en poder de cada una de las partes.

Nombre participante: _____

Firma acudiente: _____

Fecha: _____