

The Use of Asynchronous Telecollaborations to Foster Intercultural Competence in Secondary-Level Foreign Language Learners

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Abstract

Intercultural competence (IC) has been widely recognized as a key learning objective in foreign language instruction. With the proliferation of computer-mediated communication tools, researchers have investigated telecollaborations as a means of promoting IC development in language learners. To date, most studies have focused on students at the tertiary-level of education. The present study examined whether a short-term asynchronous telecollaboration has the potential to similarly foster IC in *secondary-level* students. Additionally, this study assessed whether students within this age group (ages 12 to 18 years old) find exclusively asynchronous telecollaborations beneficial to their learning, engaging, and recommendable to other language learners. The virtual platform *Seesaw* was used to connect two secondary-level Spanish foreign language classes in Western Canada with two secondary-level English foreign language classes in Catalonia, Spain. Together, the students completed a six-week telecollaboration involving four culture-based tasks designed around Deardorff's (2006a) IC model. Pre- and post-treatment questionnaires were administered to assess students' IC development and their perceptions of the telecollaboration. The results of a series of paired samples t-tests and a repeated measures ANOVA suggested a significant relationship between students' participation in the telecollaboration and overall growth in their IC. Descriptive statistical analyses, chi-square tests, and the coding of short-answer responses provided further indications that learners found the telecollaboration highly engaging, beneficial to their learning, and recommendable. All in all, this provides further evidence for the existing body of research that supports the use of telecollaborations as effective and accessible tools to nurture intercultural learning in foreign language classrooms.

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Chapter 1: Introduction

1.1. Background

Learning a language involves more than developing communicative competence—that is, the ability to communicate in linguistic, sociolinguistic, and pragmatically-appropriate ways (Council of Europe, 2001, p. 13). In today’s ever-increasingly globalized world, language learners must *also* develop the ability to effectively interact and build relationships with people of other cultures. This is referred to as *intercultural competence* (henceforth “IC”). IC is not only essential for travelling, living, studying, and working in foreign countries (Fantini, 2000, p. 25), but has also become necessary for daily functioning within multicultural societies. Due to the rise of immigration, international trade and business, and tourism, people experience intercultural interactions in various facets of their everyday personal and professional lives. IC has also become significant in virtual communication in which people from a myriad of different cultures and geographically distinct regions interact via the Internet and social media applications. From a macro-perspective, developing IC is imperative to promoting peace and understanding among all global citizens.

The importance of *teaching* IC in foreign and second language classes has been widely acknowledged (Altuğ et al., 2019, p. 1). Despite this, in practice, opportunities for IC development in language classrooms are often limited (p. 1). Some students, out of their own volition, embark on exchange, study abroad, or summer language programs in foreign countries. These programs are often designed with the explicit purpose of immersing students in other languages and cultures. As studies have shown, such international experiences are effective in enhancing participants’ IC (Maharaja, 2018, p. 18). For example, in their 2019 study, Altuğ et al. found that Erasmus students, in comparison to non-Erasmus students, showed more positive

attitudes related to IC. Similarly, in his qualitative study, Maharaja (2018) found evidence of IC development in 150 college students after they had studied abroad for one semester. While these experiences help compensate for the lack of attention IC receives in language classrooms, they are not financially accessible to or feasible for all students.

The source of inspiration for this study came from the author's keen interest in examining an accessible *classroom-based* means of fostering IC—namely, telecollaborations. The proliferation of computer-mediated communication (CMC) tools, such as e-mail, instant messaging, social media platforms, and video-call technology, has enabled language learners residing in different countries to connect and collaborate with one another both synchronously (in real time) and asynchronously. In recent years, telecollaborative projects of various types have been studied as potential tools for developing language learners' IC. Many of these studies have demonstrated the benefits of telecollaborations on students' IC development, but most have focused exclusively on tertiary-level (post-secondary) students. In contrast, there has been a paucity of studies conducted at the secondary level (Grades 7 to 12), involving students aged 12 to 18 years old. The present study seeks to help fill this gap and assess whether telecollaborations are similarly effective when carried out in secondary-level language classrooms.

The author believes it is in the interest of foreign language teachers to integrate opportunities for IC development at the secondary level for three principal reasons. First, not all students decide to pursue tertiary-level education where such opportunities tend to be more abundant. As a result, these students may not fully cultivate their IC. Second, in a secondary-level classroom environment, students can be guided and supported in developing their IC. Acquiring IC often requires critical reflection of one's own culture, the challenging of one's pre-existing ideas about other cultures, the unpacking of one's worldview, and a delicate approach to navigate

misunderstandings that may arise from language barriers and cultural differences. Confronting these challenges in a controlled environment with a supportive teacher could highly benefit students. Third, exposing students to IC development opportunities at a younger age could contribute to more profound growth in this competency.

The present study involved the development, implementation, and evaluation of a short-term (six-week) asynchronous telecollaboration between secondary-level students in Grades 9 and 10 in Catalonia and Western Canada. In total, 78 students participated, and their ages at the time of the study ranged from 14 to 16 years old. The primary focus of the telecollaboration was the exchange of culture-based information, with foreign language development serving as a secondary goal. The telecollaboration tasks were designed around Deardorff's (2006a) intercultural competence model. This model postulates that IC is comprised of certain attitudes, knowledge, and skills, and is manifested in both internal and external ways. The tasks, therefore, deliberately sought to develop these elements of IC. The objectives of the study were to determine whether a short-term asynchronous telecollaboration focused on tasks engineered around Deardorff's IC model (1) shows evidence of developing the participating students' IC, (2) is perceived by students as beneficial to their learning and engaging, and (3) is recommended by students to other language learners.

The participants were selected from the regions of Western Canada and Catalonia for three reasons. First, there are no studies to date which have examined a telecollaboration of this nature between schools in Western Canada and schools in Catalonia.¹ This study therefore bridges this gap. Second, the researcher, who is Canadian but currently resides in Catalonia, was able to most efficiently coordinate a telecollaboration between schools in these regions. Finally, the

¹ There is, however, currently a Knowledge Building International Project (KBIP) being carried out between Catalonia and Central Canada.

researcher felt it would be mutually beneficial to connect schools from these two specific regions. As countries in Central and South America tend to be more common vacation destinations for Canadians (Statistics Canada, 2016), Canadian students could be limited in their exposure to the Castilian dialect of Spanish and to Spanish and Catalan culture. Similarly, due to geographical proximity, Spaniards tend to visit England more than Canada (Café Babel, 2015). Moreover, the researcher discovered through her observations of schools in Spain that British English tends to be favoured in English language classes. The author reasoned, therefore, that a telecollaborative project which allows Western Canadian and Catalan students to share their specific language dialects and cultures would be both unique and enriching.

An exclusively *asynchronous* telecollaboration was selected due to the eight-hour time difference between Western Canada and Catalonia, the convenience of non-synchronous communication, and the opportunity it affords students to consciously practice and monitor their language and interactions without the pressure of having to carry on a real-time conversation.

1.2. Theoretical Background

The theoretical background will address the importance of integrating culture into second and foreign language instruction; significant models and frameworks of IC; the evolution, types, and purposes of telecollaborations; contemporary large-scale telecollaborative projects; and existing studies that have assessed the extent to which certain types of telecollaborations promote IC development.

1.2.1. Integrating Culture and IC Development in Second and Foreign Language Instruction

Language and culture are inextricably related. As Brown (2007) posits, “one cannot separate the two without losing the significance of either language or culture” (p. 189). A survey of past approaches to and methods of foreign language teaching reveals that historically, despite

their inherently inseparable nature, culture was often neglected in language classrooms. In 1960, however, the publication of Nelson Brooks' book, *Language and Language Learning: Theory and Practice*, ignited discussion on the importance of integrating culture into language classes (Chen and Yang, 2016, p. 1128). This newfound thinking was later entrenched in key foreign language teaching documents. For example, the National Standards in Foreign Language Education Project's (1996) *Standards for Foreign Language Learning: Preparing for the 21st Century* identified culture as one of five central goals of foreign language instruction (p. 1128). Similarly, the 2007 Modern Language Association of America's (MLA) report on post-secondary level foreign language learning mentioned culture as a key aim of instruction (p. 1128). Curriculum documents have also mandated the teaching of culture alongside language. In Canada, the Alberta French as a Second Language Program of Studies, for instance, acknowledges that "language is embedded in culture" and states that "students will...acquire cultural knowledge about various Francophone peoples in order to gain a better understanding of these cultures and their own" (Alberta Education, 2004, p. 1).

The operationalization of such curricular aims by language teachers has, however, been fraught with challenges. In their study on barriers to teaching culture in foreign language classrooms, Chen and Yang (2016) found that some contemporary language teachers (1) were unaware that culture was a key objective of foreign language instruction in the 21st century; (2) felt they lacked the time, necessary materials, and technological support needed to embed cultural elements in their classes; and (3) perceived the teaching of grammar as more important than teaching culture. Another challenge has been the tendency to approach culture as "background knowledge/area studies" (Risager, 2007, p. 138), focusing on superficial cultural elements of the countries in which the target language is spoken. Lastly, some teachers may

emphasize a single culture within a language class while neglecting others (e.g., teaching solely about British culture when teaching English) (Stockwell, 2018, p. 11).

In more recent years, there has been a further evolution in foreign language teachers' and scholars' thinking about the teaching of culture. It is now widely recognized that teaching *about* other cultures is inadequate; indeed, it is now believed that language learners need to develop the competency to effectively *interact* with people of other cultures. This shift from teaching *about* culture to nurturing IC development is codified, for example, in the Council of Europe's (2000) *Common European Framework of Reference for Languages* (CEFR), which has formed the foundation of many European language syllabi, textbooks, and formal language examinations (O'Dowd, 2007b, p. 3). The CEFR identifies a competent language user as one with sociocultural knowledge, intercultural awareness, and intercultural skills. Curriculum guides have also highlighted the need for teaching IC. An example is the Alberta Spanish Language and Culture Program of Studies which identifies the development of IC as one of four key curricular components (Alberta Education, 2006, p. 2).

The perceived importance of IC in second and foreign language instruction is reflective of both the goals of contemporary language learners and the global environment. The aims of many language learners today are often practical and immediate in nature. For example, immigrants are often required to learn languages to adapt to life in their new societies. The integration of the global workforce has also exerted pressure on many employees, particularly in the business and energy sectors, to learn and use foreign languages. The ease of global travel has also led many people to pursue foreign language study for travel and study abroad purposes. All these objectives require the *use* of language to *interact* with other people. The shift in language instruction from teaching *about* culture to equipping learners with the knowledge, skills, and

attitudes to competently *interact* with people of other cultures has thus mirrored changes in the *aims* and *uses* of language instruction.

1.2.2. IC Models and Frameworks

There exists a wide range of definitions, models, and frameworks of IC. One of the most cited definitions is that of the *Routledge Encyclopedia of Language Teaching and Learning*. In it, IC is defined as “the ability to interact effectively with people from cultures that we recognize as being different from our own” (Guilherme, 2000, p. 297). The two most renowned and robust models or frameworks of IC are those created by Byram (1997) and Deardorff (2006a). These models were developed to provide a more expansive understanding of the concept of IC and to serve as a springboard for assessing IC in learners.

Byram’s model was conceived in 1997 and since then, has played a considerable role in shaping the development of curriculum and teaching materials around the world (Hoff, 2020, p. 56). In Byram’s model, he contends there are five principal factors that comprise intercultural communicative competence (ICC)—*knowledge* of oneself and others, *skills* of interpreting and relating, *skills* of discovering and interacting, *critical awareness*, and *attitudes* of relativizing the self and valuing the other (p. 34). Byram posits that collectively, these may aid an intercultural speaker with not only communicating information but also developing relationships founded on respect and mutual understanding (Hoff, 2020, p. 57).

In 2006, Deardorff developed her own model of IC focused on the question, “what does it mean to interact successfully with those from different cultures?” (Deardorff, 2006b, p. 1). Like Byram’s (1997) model, Deardorff’s (2006a) model similarly consists of *knowledge* (cultural self-awareness, culture-specific knowledge), *skills* (observing, listening, evaluating, analyzing, interpreting, and relating), and *attitudes* (respect, openness, curiosity, and discovery) (p. 254).

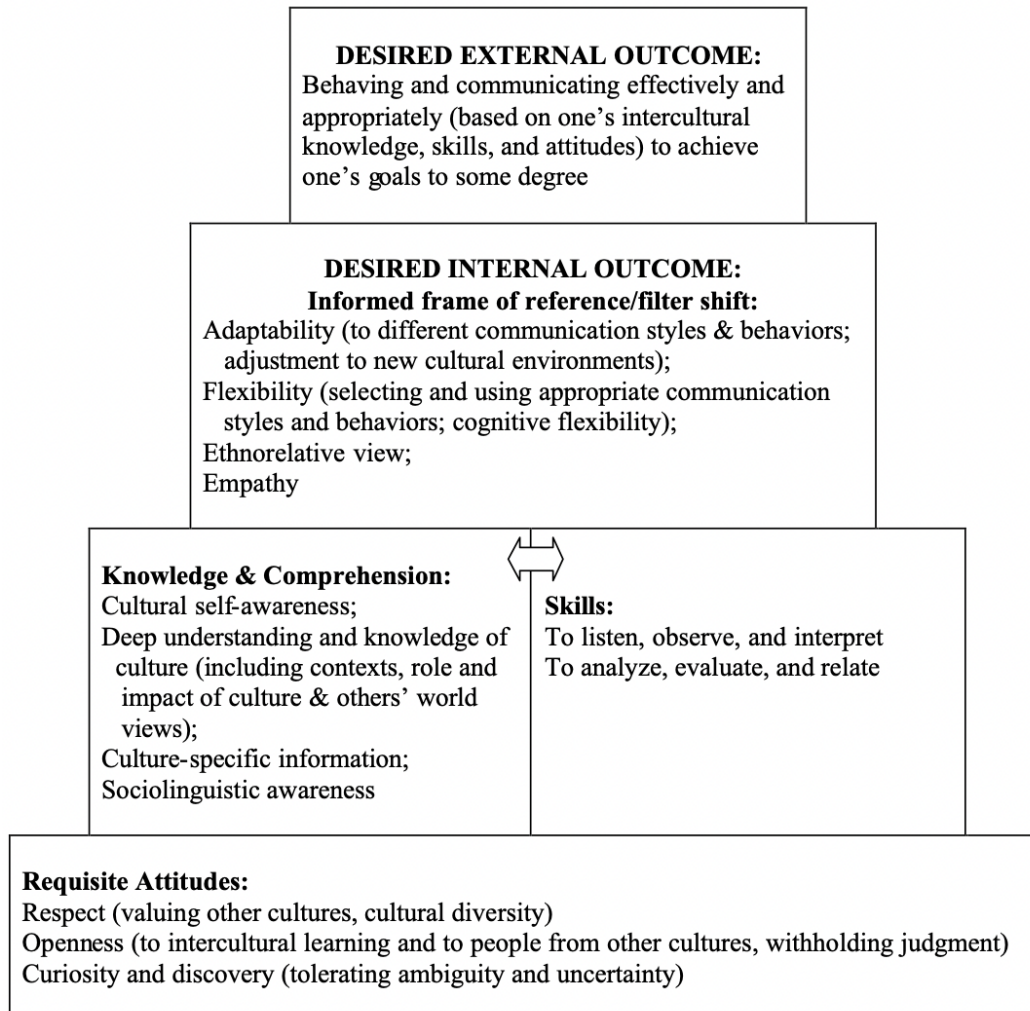
Deardorff posits that collectively, these result in *internal outcomes*, such as being flexible, adaptable, and empathetic (p. 254). She further postulates that the above-specified attitudes, knowledge, and skills *conjoined with* internal outcomes are ultimately manifested in *external outcomes*—that is, one’s behavior and communication with people of other cultures (p. 254). Deardorff’s model is unique as it suggests that being interculturally competent does not simply entail possessing certain requisite knowledge, skills, and attitudes, but also warrants the appropriate application of them in intercultural interactions. Additionally, Deardorff suggests that her framework “illustrates that intercultural competence is a *process*,” and emphasizes the need to focus on *how* people acquire the various aspects of IC (Deardorff, 2006b, p. 2). She also contends that “[i]ntercultural competence unfortunately does not ‘just happen’ for most; instead, it must be intentionally addressed” (p. 2). Her model is intended to serve as a guide that educators can use to help deliberately foster IC in learners (p. 2). A visual depiction of Deardorff’s model, as taken from her “Theory Reflections: Intercultural Competence Framework/Model” (2006b), is shown on the following page.

The telecollaboration tasks and IC assessment tools utilized in the present study are based on Deardorff’s IC model. This model was selected for three principal reasons. First, it is firmly grounded in research (Deardorff, 2006b, p. 1). As Deardorff states, her work is the result of a collaboration with key intercultural scholars who collectively reached a consensus on the definition of IC and the elements comprising it (p. 1). Thus, according to Deardorff, her model is “the first grounded research-based framework, or model, of intercultural competence” (p. 1). Second, it is among the most comprehensive models of IC, particularly as it encompasses both internal and external IC outcomes. Third, it was developed in part to serve as a guide for

educators to use in addressing IC in instructional practices (p. 2) and is therefore conducive to the development of practical telecollaborative tasks.

Figure 1

Deardorff's Intercultural Competence Model



1.2.3. The Evolution, Types, and Purposes of Telecollaborations

The term *telecollaboration* denotes the use of virtual communication tools to connect learners across the globe for collaborative and educational purposes (O'Dowd, 2018, p. 1). When applied to foreign language contexts, telecollaborations involve uniting "language learners in

geographically distant locations to develop their foreign language skills and intercultural competence” (O’Dowd, 2012, p. 342). Other nomenclature that may be used synonymously with *telecollaboration* includes *virtual exchange*, *online intercultural exchange*, and *collaborative online international learning*.

The idea of students exchanging information with one another across regional and national borders extends back to the work of Célestín Freinet in the 1920s, but the seeds of the first true telecollaborations were not sown until the 1990s with the emergence and development of the internet (O’Dowd, 2007a, p. 4). While early telecollaborations were typically limited to email exchanges, they have since transformed into substantially more complex projects, capitalizing on advances in technology. They have also evolved to increasingly reflect the ideals of the Web 2.0² which include “sharing, openness, collective intelligence, flexibility, and collaboration” (Guth and Helm, 2010, p. 16). Contemporary telecollaborations often encompass the exchange of user-generated content, the co-creation of knowledge, and collective problem solving.

Telecollaborations may be synchronous or asynchronous in nature, or they may contain both synchronous and asynchronous components. Synchronous telecollaborations involve real-time connections between students, such as instantaneous videoconferencing or instant messaging. By contrast, asynchronous telecollaborations encompass non-instantaneous communication, such as the use of discussion forums, shared online platforms, emails, and wikis. In asynchronous telecollaborations, students in two or more countries may collaborate on a mutual project but make their respective contributions at different times of the day. This is useful when the telecollaboration partners are residing in countries with significant time differences.

² Web 2.0 refers to “the second stage of development of the internet that allowed users to create, change and share information, for example through blogs and social media” (Oxford Learner Dictionaries, n.d.).

Telecollaborations that integrate both synchronous and asynchronous methods may do so in divergent ways. They may, for example, use a combination of videoconferencing, instant chats, and non-synchronous discussion forums, wikis, or other tools.

Telecollaborations, when used in foreign language classes, are designed to fulfill two principal objectives—namely, to strengthen students’ foreign language skills and to promote the development of students’ IC (Belz, 2003, p. 68). Depending on the tasks involved in the telecollaboration, learners can practice certain language skills such as reading, writing, listening, and speaking. To develop their reading and writing skills, they could, for instance, exchange written emails, read and discuss articles in shared forums, or create interactive blogs. To sharpen their listening and speaking skills, they could exchange videos of themselves speaking or communicate with one another in real-time through videoconferencing technology.

Language skill development in the context of a telecollaboration can be potentially more meaningful, practical, and authentic than traditional classroom-based tasks, which tend to be artificially engineered. For example, rather than practicing listening skills through an audio recording of contrived and unrealistic situations, students can listen to people *speaking* the language and engage in *authentic* conversations. Indeed, telecollaborations mirror the real-life function of language.

Another related benefit of telecollaborations is students’ development of pragmatic awareness (Chun, 2011, p. 417). As an example, in some telecollaborations, language learners are connected with similar-aged native speakers of their target language who can model both linguistically and pragmatically accurate and appropriate language use. Exposing learners to pragmatically rich content can be difficult to achieve in traditional classroom instruction. Various studies have yielded findings that suggest that telecollaborations help augment the

pragmatic competence of language learners (Cunningham, 2014; Cunningham & Vyatkina, 2012; Kinginger & Belz, 2005; Rafieyan et al., 2014; Vyatkina & Belz, 2006).

In addition to strengthening students' linguistic skills, telecollaborations are also engineered to foster the development of students' IC (Ferreira-Lopes et al., 2018, p. 2). This is derived from the belief that learners can acquire IC skills through interacting with people from different backgrounds in virtual domains (O'Dowd, 2007b, p. 4). Moreover, telecollaborations can help students reflect on their own culture, which is a key element of IC (Schenker, 2012, p. 451). Several research studies, examined later, have been undertaken to study the extent to which telecollaborations of various types foster IC.

While often not the primary focus of telecollaborative projects, telecollaborations also have the added benefit of bolstering students' digital literacy skills. Interacting and collaborating online with people of other cultures who are residing in different regions or countries is an important skill needed in the 21st century global workplace (UNICollaboration, n.d., "Background"). Through telecollaborations, students can practice this skill in a controlled environment, under the guidance of a teacher.

1.2.4. Telecollaborations, Constructivism, and Student-Centred Learning

Telecollaborations embrace a constructivist approach to student learning. Constructivism, as Naylor and Keogh (1999) suggest, is premised on the idea that learners actively construct meaning by connecting new ideas with their existing knowledge and experiences (p. 93). As Manegre (2021) points out, constructivism stands in stark contrast to passive transmission, which involves knowledge being unilaterally passed from a teacher or expert to students (p. 4). In telecollaborations, rather than being spoon-fed information, as in many traditional classroom settings, students build new knowledge and understanding through their interactions and

collaborations with other students (UNICollaboration, n.d., “Background”). This is accomplished through participants sharing their life experiences, exchanging diverse perspectives, approaching topics from different epistemological standpoints, and exposing one another to new ways of expressing themselves and interacting. Additionally, students may gain new insights through the experience of forming and maintaining cross-cultural relationships and navigating misunderstandings or miscommunications that may arise throughout the collaboration. The constructivist form of learning offered by telecollaborations has the potential to be more profound and impactful than other more passive mediums of knowledge acquisition.

In addition to being characterized as constructivist in nature, telecollaborations are also considered student-centered forms of learning. Student-centered learning is a 21st-century concept which shifts the focus in instructional settings from teachers to learners (Overby, 2011, p. 109). Rather than being the sole gatekeepers of knowledge, teachers serve as guides and facilitators, supporting students in their unique learning journeys (p. 109). Students’ knowledge, experiences, and ideas are inherently important in student-centered learning, as in constructivist learning approaches: they are actively drawn upon and serve as the foundation for further learning.

In telecollaborations, teachers assume the role of facilitators and guides by initiating the virtual exchange projects, creating the telecollaborative tasks, connecting learners with one another, helping students address questions and challenges as they arise, and encouraging students to reflect on their learning. Learners, by contrast, are the principal players and co-create their learning trajectories.

1.2.5. Contemporary Large-Scale Telecollaborative Projects

Several contemporary large-scale telecollaborative projects exist. The main goals of such projects include creating opportunities for collaborative knowledge building and sharing, sharpening students' foreign language skills, and fostering students' IC development. Many of these projects entail the coordination and facilitation of multiple simultaneous telecollaborations which adhere to pre-determined structures or share certain characteristics. Five contemporary projects and their corresponding objectives will be briefly surveyed: (1) Robert O'Dowd's Valiant Project, (2) Knowledge Building International Project, (3) UNICollaboration, (4) COIL Virtual Exchange, and (5) PenPal Schools.

The Valiant Project is spearheaded by Robert O'Dowd, a key expert in the domain of Computer Assisted Language Learning who specializes in telecollaborations. The project also involves the participation of scholars from universities across Europe. It was launched in 2021 and is considered an Erasmus Key Action 3 Policy Experimentation Project (O'Dowd, n.d., "About VALIANT"). Unlike other undertakings of its kind, the Valiant Project uniquely focuses on telecollaborations involving *teachers* as the principal participants. The project connects teachers (both in-service and student teachers) and educational experts across Europe via "Virtual Innovation and Support Networks" where they share their experiences with and ideas on common education-related challenges (Sauro et al., 2021, p. 1). Additionally, participants are encouraged to collectively develop and exchange pedagogical materials to help address the shared obstacles they face as educators (p. 1). Through the project, the developers intend to determine whether virtual collaborations between networks of teachers and experts across Europe help augment teacher motivation, mitigate teacher isolation (particularly for teachers working in rural contexts), develop teachers' intercultural collaboration skills, augment teachers'

ability to use digital technologies for professional collaboration, and expose student teachers to “the realities of the teaching profession” (p. 1).

There are currently several telecollaborations underway within the Valiant Project, all of which commenced in the spring of 2022. The duration of the telecollaborations range from six to eight weeks. Some of the topics of the exchanges are “Teaching foreign languages online,” “Integrating technologies in the foreign language classroom,” “Developing CLIL lessons and materials for primary and secondary classrooms,” and “Setting up a Virtual Exchange for your pupils” (O’Dowd, n.d., “Take part in our Virtual Exchanges in spring 2022”). All telecollaborations consist of both synchronous and asynchronous components, such as video conferencing and the use of discussion forums. As these projects are currently ongoing, their outcomes have not yet been determined.

The Knowledge Building International Project (KBIP), pioneered by Thérèse Laferrière, was developed in 2007 at the University of Toronto’s Ontario Institute for Studies of Education (Knowledge Building International Project, 2020). The project is premised on the concept of knowledge building, which regards knowledge as something that can be actively *created*, rather than merely *discovered* (Scardamalia & Bereiter, 2014, p. 397). Moreover, it regards ideas as “entities in their own right” with “properties, connections, and potentialities” that are independent of the individuals that hold them (p. 397). Since its creation, the KBIP has connected school-aged students across the globe to facilitate the sharing and construction of knowledge via various collaborative tasks. Once connected, the participating students utilize an online collaborative software known as *The Knowledge Forum* to exchange ideas on certain questions and topics they deem important to them (Manegre, 2020, p. 4). For the duration of the collaboration, students follow a pre-determined and highly structured process to scaffold and

organize their learning (p. 4). While students primarily interact via written contributions in a shared web, the platform is also conducive to the sharing of resources such as documents, pictures, and movies (Knowledge Building International Project, 2020). KBIP collaborations can be classified as asynchronous telecollaborations.

UNICollaboration is an organization that was developed to promote and coordinate telecollaborations in higher education. The organization has two principal goals: (1) to encourage the implementation and study of telecollaborations across all disciplines and subject areas in post-secondary level education, and (2) to promote the use of telecollaborations at institutional and policy-making levels (UNICollaboration, n.d., “Background”). The organization is currently involved in several telecollaborative projects through the provision of trainers specialized in virtual exchange who help to design and coordinate the project activities (UNICollaboration, n.d., “UNICollaboration Projects”). As specified on their website, some examples include GO-DIJIP Project, FRAMES Project, PENSA Project, VAMOS Project, and the Erasmus + Virtual Exchange program.

Collaborative Online International Learning (COIL) projects were initiated by scholars at the University of Vienna. In COIL projects, university instructors from different countries collaborate to develop and implement joint online teaching units (University of Vienna, n.d.). The units encompass various tasks which require their students to work together in mixed nationality teams. Ultimately, for participating, students are awarded university credits. The University of Vienna provides various resources, including financial support, for its COIL projects.

PenPal Schools, founded in the United States by Joe Troyen, is known as “the world’s largest project-based learning community” and involves “over a quarter million students in 150

countries” (Innovate, n.d.). PenPal Schools is aimed at school-aged students rather than tertiary-level students. The virtual platform contains several online projects of varying difficulty levels that students across the globe may join. The projects address a myriad of topics such as “Holidays and Festivals of the World,” “Schools Around the World,” “Fake News,” “World News,” and “Immigration,” among others (PenPals, n.d. “Select a Topic”). Some projects are designed specifically for English language learners who use English as a lingua franca to communicate and collaborate with other English language learners. Students may contribute to the projects in a variety of ways and using a range of mediums, such as the crafting of presentations, the creation of videos, the sharing of art, and the completion of service projects (Innovate, n.d.). To help students critically think about their topic and to scaffold their learning, PenPal Schools provides students with access to various lessons they may complete on the platform (Innovate, n.d.). Additionally, students are encouraged to participate in discussion forums to exchange their perspectives on their topic with students residing in other countries (Innovate, n.d.).

The above telecollaborative projects highlight the importance contemporary educators and scholars place on telecollaborations. The Valiant project uniquely connects *teachers* around the globe in an effort to foster collaboration and address the neglected issue of teacher isolation. KBIP and PenPal Schools embrace a constructivist approach and facilitate the sharing and co-creation of knowledge by learners around the world. UNICollaboration and the University of Vienna’s COIL project promote and help facilitate the implementation of telecollaborations across disciplines in university settings.

1.2.6. Existing Research Studies Focused on Telecollaborations and IC

Over the past two decades, researchers have investigated the effects of different types of telecollaborative projects on participants' IC. As previously mentioned, most of these studies have been carried out at the tertiary (post-secondary) level. Some studies have focused on *asynchronous* telecollaborations that use technology such as email, e-forums, blogs, wiki space, Facebook, and TwinSpace (e.g., Elola & Oskoz, 2008; Jin, 2015; Liaw, 2006; Müller-Hartmann, 2000; Schenker, 2012; Vallés, 2017; Vinagre, 2014). Other studies have examined purely *synchronous* telecollaborations via videoconferencing tools such as Adobe Connect and Zoom (Lenkaitis, et al., 2019; Puranen & Vurdien, 2016). There have additionally been studies which have explored the use of a combination of *synchronous and asynchronous* components (Gómez García, et al., 2020; Jauregi, 2013; Lee, 2020; O'Dowd, 2007b; Taşkıran, 2019; Thomé, 2016). All the aforementioned studies have demonstrated that irrespective of the technology utilized and the synchronicity of the telecollaboration, participants demonstrated IC development, or at the minimum, growth in aspects of their IC.

While most studies have focused on students at the tertiary-level of education, two studies were carried out with secondary-level students. The first is that of Müller-Hartmann (2000) which examined the intercultural learning generated by e-mail exchange projects among high school students in Grades 11 and 12. In total, nine projects were undertaken which each spanned three-to-four months and involved students in English Foreign Language (EFL) classes in Germany and students in English and social studies classrooms in the United States and Canada (Müller-Hartmann, 2000, p. 121). Some projects within this study entailed the formation of networks which included classes from multiple different schools while others consisted of pairs of classes (p. 121). The exchange revolved around participants reading and discussing a

play or novel written in English (p. 121). Through qualitative data analyses of three of the nine projects, Müller-Hartmann found that this literary-focused, task-based telecollaboration model was effective in “initiating and sustaining intercultural learning processes in electronic learning networks” (p. 131). More specifically, the exchange helped students develop positive attitudes vis-à-vis their exchange partners, awareness of their own cultural identities and those of their partners, knowledge of other cultures, and interpretation skills (p. 129), all of which are associated with IC.

The second study involving secondary-level students was the Telecollaboration for Intercultural Language Acquisition (TILA) project (Jauregi et al., 2013). This large-scale two-year project (2013-2015) was funded by the European Commission within the *Lifelong Learning Programme*. The overarching objectives of the project were to (1) enrich secondary-level foreign language teaching programmes with telecollaborations, (2) provide assistance and training to teachers to encourage the seamless integration of telecollaborations in their teaching practices, and (3) to research how telecollaborations impact the intercultural understanding and motivation of secondary-level students (Jauregi et al., 2013, p. 123). A key sub-objective was to promote and assess the development of participants’ intercultural communicative competence (p. 124). In total, 837 learners, 300 student teachers, and 48 teachers partook in the projects’ pilot experiences (Jauregi, 2015, p. 269). Secondary schools and teacher training institutions from the Netherlands, the United Kingdom, Germany, France, the Czech Republic, and Spain were involved (TILA Project EU, 2013).

The TILA virtual exchange projects consisted predominantly of synchronous tasks which required participants to communicate via videoconferencing (BigBlueButton) and in a virtual world (OpenSim) (Clavel-Arroita & Pennock-Speck, 2015, p.189). In addition, to a lesser extent,

the exchange incorporated some asynchronous communication modalities such as discussion forums, wikis, and blogs (TILA Project EU, 2013). To complete the tasks, students worked in dyadic or small group formations (Jauregi, 2015, p. 269). In some cases, students' target language would be used as a *lingua franca* (p. 269). In other cases, students worked in "tandem constellation[s]," whereby two native speakers of different languages were paired together and required to alternate speaking in their languages (p. 269). Telecollaborative tasks were completed both when the students were at school and, due to technological and privacy obstacles that emerged at school, at home (p. 269).

Participants' contributions to the telecollaboration (e.g., chat logs and video communication recordings), survey data, and interviews were analyzed. Collectively, they revealed that telecollaboration exchanges of this nature have a positive impact on students' intercultural communicative competence (Jauregi, 2015, p. 270). As Jauregi (2015) suggests, the tasks within the collaboration enhanced students' IC and awareness as they sparked conversations, facilitated the sharing of cultural information and points of view, and prompted reflection on intercultural points that emerged in the project (p. 270). It was also found that the telecollaborations positively influenced student motivation (p. 271).

While both Müller-Harmann's and the TILA project's telecollaboration models were successful in contributing to participants' IC development, they both contain certain characteristics which make them difficult to emulate in secondary-level foreign language classrooms. By virtue of focusing on the reading and discussion of English novels and plays, Müller-Harmann's telecollaborative project was tailored to advanced-level English learners. Across the world, however, a substantial portion of secondary-level language students likely have not attained a proficiency level adequate enough to fluently read, comprehend, and

meaningfully discuss novels or plays written in their target language. A telecollaboration of this nature is therefore not conducive to all secondary-level language learners. The TILA project similarly requires participants to have achieved an intermediate- to advanced-proficiency level in order to effectively partake in synchronous conversational tasks. Without the mastery of basic conversational abilities in their target language, participating students may face considerable anxiety communicating with their telecollaboration partners. Moreover, there may be a higher propensity of communication breakdowns or misunderstandings.

Another classroom transferability challenge posed by Müller-Harmann's telecollaboration project model is the inclusion of non-foreign language students. In her study, German EFL students were partnered with English and social studies classes in the United States and Canada which were comprised of native and native-like speakers. As this type of telecollaborative project offers comparatively fewer benefits to the native and native-like speakers (as they are not able to practice a foreign language), it may be difficult to enlist collaborating classes of this nature.

An additional replicability obstacle inherent in the TILA telecollaboration model is the use of the OpenSim virtual world. While engaging for students, foreign language teachers must devote substantial time to learn about the innerworkings of the OpenSim virtual world, set up the virtual world for their students, teach their students how to utilize it, and address any technological issues that may arise. Furthermore, the use of OpenSim virtual world requires that each participating student has access to their own device which may not be viable for everyone.

In addition to being difficult to emulate in foreign language classrooms, the telecollaborations in Müller-Hartmann's and the TILA study do not fully harness adolescents' interest or adeptness in producing and sharing content via social media platforms (e.g.,

Facebook, Instagram, and TikTok). Müller-Hartmann's study utilizes e-mail which has declined in popularity among the younger generations and neglects the full potential that the Web 2.0 offers. The TILA project, while using more technologically advanced tools such as videoconferencing and a virtual world, does not fully capitalize on adolescents' interest in creating and sharing *original* content.

As this literature review has shown, there are ample research studies which have demonstrated the benefits of telecollaborative projects on the development of students' IC. While the majority of studies have focused on the tertiary level, two key projects have examined the use of telecollaborations in secondary-level classrooms. These projects were successful in fostering IC development in secondary-level participants. Nevertheless, they contain certain characteristics which make them difficult to adapt for practical use in secondary-level foreign language classrooms around the world. Moreover, they do not fully harness the interests and abilities of today's adolescents in creating and disseminating original content on virtual platforms. The present study was therefore engineered to help address the gap in telecollaborative studies at the secondary level while simultaneously examining a practical telecollaboration model that could be easily replicated in foreign language classrooms and that fully exploits adolescents' interests and ingenuity.

The present study also differs from existing telecollaborative studies in five additional respects: (1) it involves the implementation of a *short-term* (six-week) telecollaboration rather than a longer-term project; (2) it makes use of an educational platform which has not been used in a telecollaborative study to date—namely, Seesaw; (3) it contains tasks that require students to produce content using a variety of asynchronous modalities (e.g., written presentations which contain text, visuals, and web links; recorded videos; and discussion comments in the form of

audio recordings); (4) it includes culture-based tasks which are designed around Deardorff's (2006a) IC model with the express purpose of fostering IC development in participants; and (5) it measures not only IC development but also students' perceptions of the project.

1.3. Research Questions and Hypotheses

The overarching aim of this experimental study is to determine whether an exclusively asynchronous telecollaboration nurtures IC development in secondary-level language learners and is perceived by learners as valuable to their learning, engaging, and recommendable. The findings from this study will not only help fill the gap in the existing body of research on telecollaborations and IC development in *secondary-level* foreign language students, but also have important pedagogical implications. The telecollaborative model designed for this study, if effective, could be easily replicated or adapted by foreign language teachers teaching secondary-level courses.

The project addresses the following research questions:

- 1) To what extent can a short-term asynchronous telecollaboration help improve the intercultural competence of secondary-level students?
- 2) To what degree are any changes in overall intercultural competence exhibited by the students from two different regions comparable?
- 3) To what extent do students find an asynchronous telecollaboration of this nature engaging and beneficial to their learning process?
- 4) How likely are students to recommend this type of project to other foreign language students?

The alternative hypotheses for the research questions are as follows:

- 1) A short-term asynchronous telecollaboration will produce significant development in secondary-level students' intercultural competence.
- 2) Students from the two different regions will exhibit highly similar levels of growth in their overall intercultural competence.
- 3) Students will evaluate their experience with the telecollaboration as engaging and beneficial to their learning.
- 4) Students are highly likely to recommend this type of project to other foreign language students.

The corresponding null hypotheses are as follows:

- 1) A short-term asynchronous telecollaboration produces no significant development in secondary-level students' intercultural competence.
- 2) Students from the two different regions exhibit substantially different levels of growth in their intercultural competence.
- 3) Students evaluate their experience with the telecollaboration as either neutral or unengaging and not beneficial to their learning.
- 4) Students are unlikely to recommend this type of project to other foreign language students.

Chapter 2: Method

2.1. Research Design

This study adopts a quasi-experimental design. Two pairs of classes were involved in the study to yield a sizeable sample. Students remained in their designated school classes; as a result, the sample was not randomized. Both pairs of classes underwent the same treatment—that is, a six-week telecollaboration centered around the completion of culture-based tasks. Pre- and post-questionnaires were administered to measure changes in students' IC and to obtain their perceptions on whether the telecollaboration was engaging, beneficial to their learning, and worth recommending to other foreign language students. The telecollaboration itself served as the independent variable. Table 1, shown below, summarizes the research design. A control group was not utilized for this study so as not to deny any cohorts of students the opportunity to participate in this project.

Table 1

Research Design

Cohorts	Pre-Treatment	Treatment	Post-Treatment
Western Canadian Class A (Grade 10) and Catalan Class A (Grade 9)	Pre-questionnaire issued to students in all four classes	Six-week telecollaboration (Classes work in predetermined pairs. Students within each class complete tasks in a small group for the duration of the project.)	Post-questionnaire issued to students in all four classes
Western Canadian Class B (Grade 9) and Catalan Class B (Grade 9)			

2.2. Sample

The cumulative sample (N=78) consisted of secondary students from a total of four different classes in two private (independent) schools—one located in Western Canada, and one located in Catalonia, Spain. The two participating classes from the Western Canadian school included a Grade 9 Spanish as a foreign language class and a Grade 10 Spanish as a foreign language class. Each class was instructed by a different Spanish teacher. The Grade 9 Spanish class consisted of nine students, aged 14 to 15 years old. As indicated by their teacher, most students in the class were monolingual English speakers, with the exception of three bilingual speakers (one who speaks English and Spanish, one who speaks English and French, and another who speaks English and Portuguese). Students' average Spanish proficiency levels were low intermediate, except for the fluent Spanish speaker. The Grade 10 Spanish class consisted of seventeen students, aged 15 to 16 years old. There were no known speakers of languages other than English in this class. As indicated by their teacher, the students' average proficiency levels were low to advanced beginner level, with a few students at the low intermediate level.

The two participating classes from the Catalan school included two Grade 9 English as a foreign language classes (termed “3º ESO” in Spain), each comprised of 30 students (aged 14 to 15 years old). The classes were taught by the same teacher. In the Catalan class paired with the Grade 10 Western Canadian class (Class A), three students were omitted from the study: one student was absent for the post-questionnaire, which was crucial to the study, while the other two students did not provide consent to participate in the study. As a result, 27 students from this class were included in the sample size. Students in this class were also all bilingual Spanish and Catalan speakers.

In the Catalan class paired with the Grade 9 Western Canadian students (Class B), four students were omitted from the study: three of the students were absent for the post-questionnaire, and one student did not provide consent to participate in the study. Thus, only 26 students from this class were counted in the sample size. Students in this class were all fluent bilingual Spanish and Catalan speakers. One student was also a fluent Polish speaker.

Students in both Catalan classes studied English at a B1 level on the CEFR Scale—that is, their texts and assessments were at a B1 level. Notwithstanding, their English proficiency levels ranged from an approximately upper A2 to B2 level, as indicated by their teacher. Some students in the classes stated that they received out-of-school supplementary English instruction at English academies which augmented their language levels.

2.2.1. Participant Data Protection

This study was conducted in accordance with the European Union’s research standards. All participants volunteered for the study. Consent was obtained from both participating schools, the respective teachers, parents/legal guardians, and the students. Consent forms were issued to all participating students and their parents/legal guardians (see Appendix A). The pre- and post-questionnaires were administered via Microsoft Forms, and the data was stored in the Universitat Rovira i Virgili’s server. Seesaw, the educational platform utilized to exchange content during the telecollaboration, has a robust privacy policy to protect student data.

2.3. Materials

2.3.1. Technology

Students were permitted to utilize their personal laptop computers, tablets, and mobile phones to complete the telecollaborative tasks. All data was processed by the researcher using a laptop computer.

2.3.2. Seesaw Virtual Platform and Other Online Programs

Seesaw was the virtual platform used in this telecollaboration. Former Google product managers Carl Sjogreen and Adrian Graham created the educational platform in 2013 in the United States. It is now utilized in classrooms in over 55 countries across the world (Learning Stuff, 2016). Seesaw enables teachers to create digital classrooms for their students. Within the virtual classroom, students can draw from a plethora of multimodal tools (e.g., drawing functions, a camera, a video recorder, and a note generator) to represent their learning and share it with their teachers, peers, and parents. Students can use the platform to actively produce assignment and project work or as a portfolio to showcase previously created work. Additionally, through written and audio commentary features, students can share their perspectives and feedback on one another's creations or on discussion prompts issued by their teachers. To date, Seesaw has not been used in a telecollaborative study.

For this study, two Seesaw digital classrooms were created—one for each pair of Western Canadian-Catalan classes. Figures 2 and 3 below illustrate example posts from one dyad—namely, Western Canadian class A and Catalan class A.

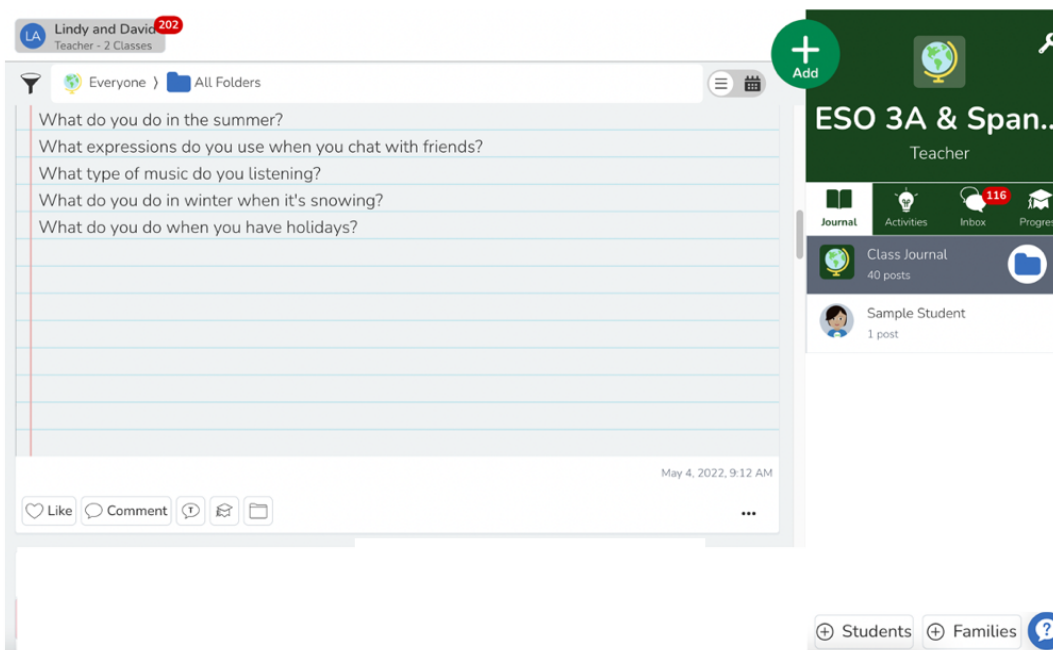
Figure 2

Digital Classroom #1- Western Canadian Student's Post



Figure 3

Digital Classroom #1- Catalan Student's Post



Figures 4 and 5 below are examples of posts from the other dyad—that is, Western Canadian class B and Catalan Class B.

Figure 4

Digital Classroom #2- Western Canadian Student's Post

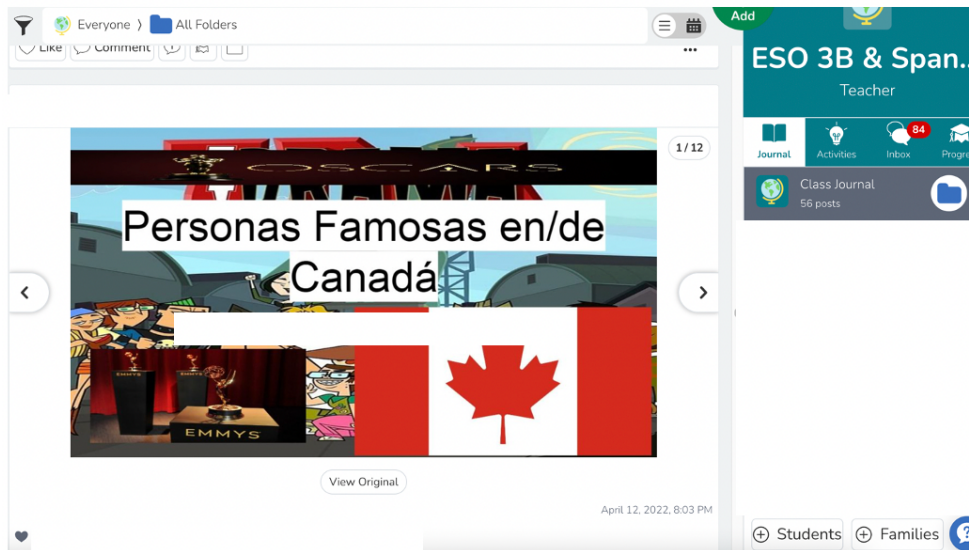
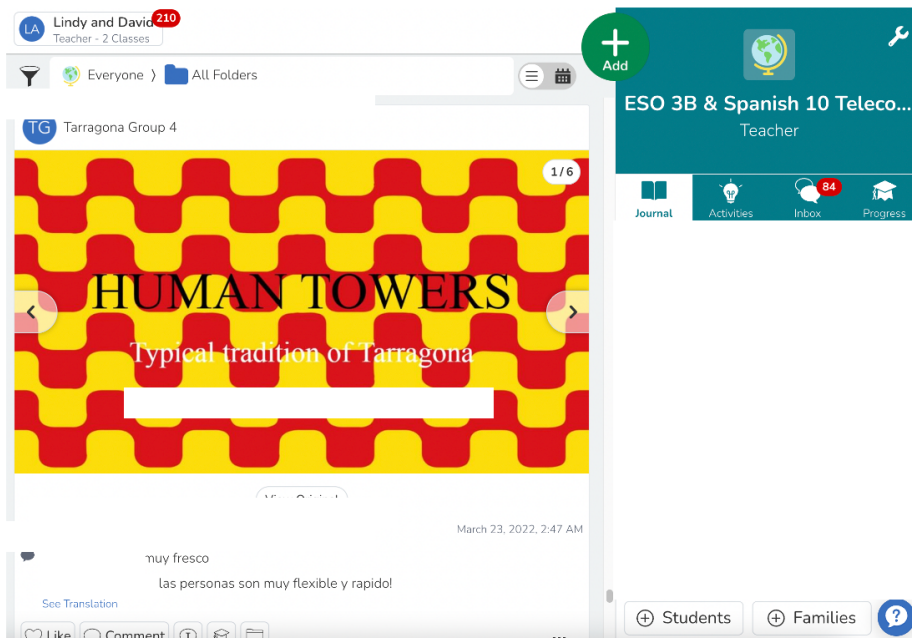


Figure 5

Digital Classroom #2- Catalan Student's Post



Students were given the option to enter their respective Seesaw platform using a generic class code or through a personal Seesaw account. Seesaw could be accessed using any device. For use on a mobile phone, the Seesaw application could be downloaded by students. For use on a computer, students could access it via their web browser. Once on the platform, students could share and discuss their telecollaborative tasks. For added student protection, a setting on Seesaw was activated which required that teachers pre-approve all content that students wished to post. All communication via Seesaw was therefore moderated by the participating teachers.

As some of the telecollaboration tasks required the creation of visual and video presentations, students were permitted to use other software and online programs for these purposes. For example, students could use Microsoft PowerPoint, Google Slides, Canva, and other presentation-generating software. Additionally, students could use the camera functions on their mobile phones or computers to film and edit their video presentations.

2.3.3. Telecollaboration Tasks

There were four tasks that comprised the telecollaboration, all of which were completed by students in small groups within their respective class. The tasks were designed by the researcher around Deardorff's (2006b) IC model. Appendix B contains a detailed explanation of each task and how it relates to her IC model. As a brief example, in their second task, students were asked to create presentations about different aspects of their culture (e.g., cultural celebrations, typical foods, popular music) and post them on Seesaw. Thereafter, students viewed the presentations produced by students in their partner class, commented on them, and asked follow-up questions. This task was designed to encourage the development of the IC attitudes, knowledge, skills, and internal outcomes from Deardorff's model which are outlined in Table 2 below.

Table 2

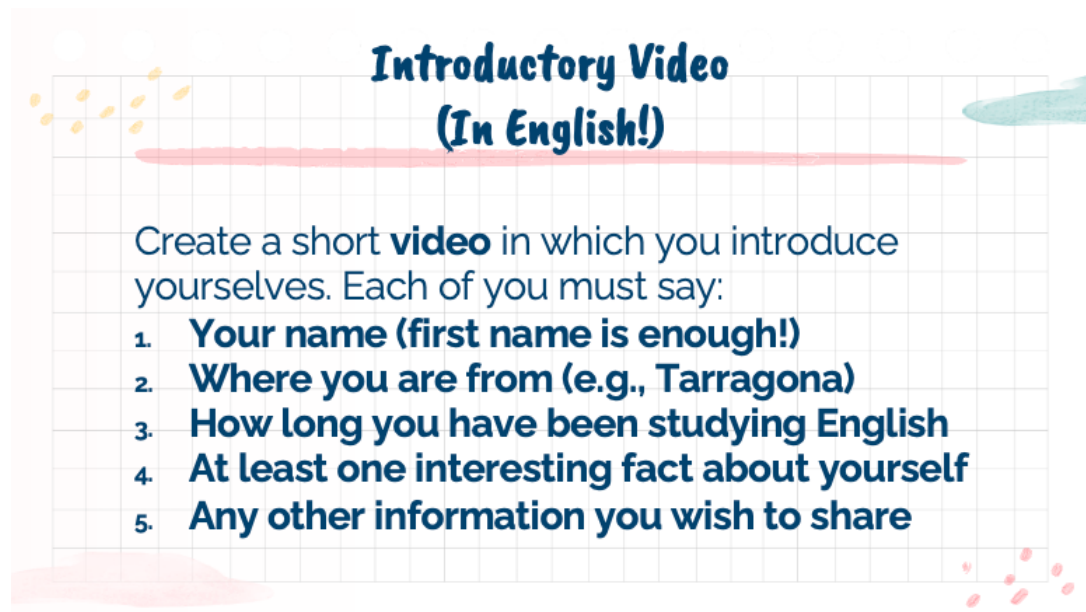
Objectives of Task #2- Modelled After Deardorff's (2006a) IC Model

Attitudes	• Students will be encouraged to show respect, openness, and curiosity when learning about the other culture.
Skills	• Students will be encouraged to demonstrate listening, interpretation, analytical, and evaluation skills when viewing partner students' presentations.
Knowledge	• Students will learn culture-specific information about the other culture. • Students will develop greater cultural self-awareness through the production of their own presentations.
Internal Outcomes	• Students will be encouraged to exercise flexibility and adaptability in the communication styles they use with students in their partner class.

To explain the telecollaboration tasks to the participating teachers and students, the researcher created PowerPoint presentations that contained detailed instructions on how to complete them. Samples are shown in Figures 6 and 7 below.

Figure 6

Sample of Task 1 PowerPoint



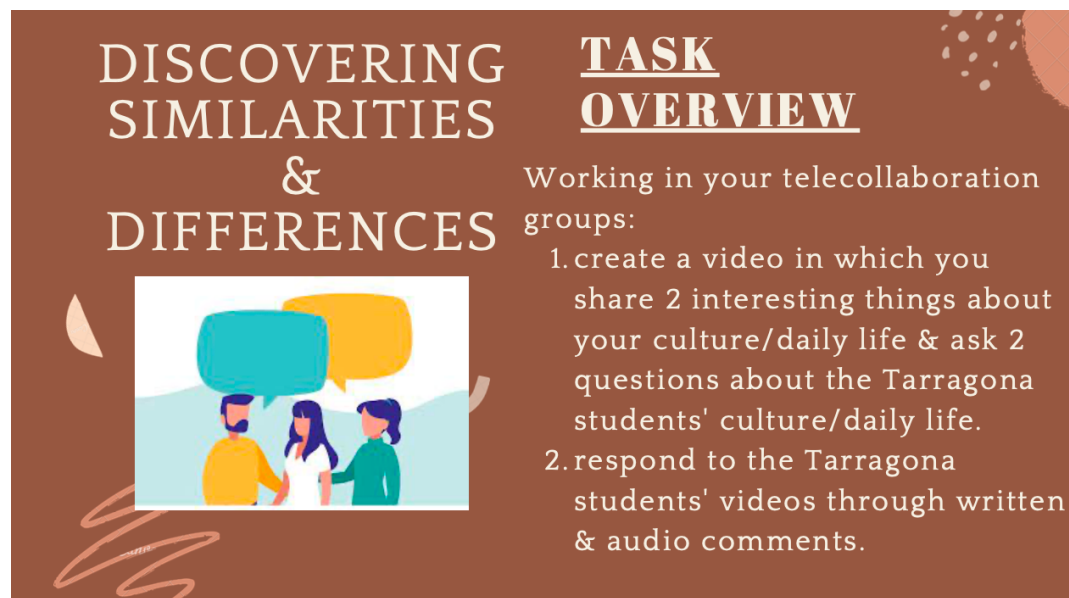
**Introductory Video
(In English!)**

Create a short **video** in which you introduce yourselves. Each of you must say:

1. **Your name (first name is enough!)**
2. **Where you are from (e.g., Tarragona)**
3. **How long you have been studying English**
4. **At least one interesting fact about yourself**
5. **Any other information you wish to share**

Figure 7

Sample of Task 4 PowerPoint



**DISCOVERING
SIMILARITIES
&
DIFFERENCES**

**TASK
OVERVIEW**

Working in your telecollaboration groups:

1. create a video in which you share 2 interesting things about your culture/daily life & ask 2 questions about the Tarragona students' culture/daily life.
2. respond to the Tarragona students' videos through written & audio comments.

2.3.4. Data Collection Instruments

The data collection instruments used in this study included both a pre- and a post-telecollaboration questionnaire (see Appendices C and D, respectively), both of which were issued to all participants via a Microsoft Forms link. The questionnaires consisted of various sets of Likert scale statements, checklist questions, multiple choice questions, and, on the post-questionnaire, one open-ended question. Collectively, they were engineered to (1) measure changes in students' IC development and (2) gather students' perceptions on the extent to which the project was beneficial to their learning, engaging, and recommendable. The specific sections within both the pre- and post- questionnaires are specified and further explained in Tables 3 and 4 below.

Table 3

Sections of the Pre-Questionnaire

Section	Overview	Contents	Purpose
Section A	IC Assessment	Four sets of Likert scale statements.	Used to evaluate students' overall IC and four specific dimensions of students' IC: attitudes, knowledge, skills, and internal outcomes.
Section B	Supplementary IC Questions	Three checklist questions and two multiple-choice questions.	Designed to provide additional data on students' IC, particularly with respect to their anticipated interactions with students from their partner class.

Table 4*Sections of the Post-Questionnaire*

Section	Overview	Contents	Purpose
Section A	IC Assessment (Identical to Section A in the pre-questionnaire)	Four sets of Likert scale statements.	Used post-telecollaboration to evaluate changes in students' overall IC and the four dimensions of students' IC (attitudes, knowledge, skills, and internal outcomes).
Section B	Supplementary IC Questions (Highly similar to Section B in the pre-questionnaire)	Three checklist questions and two multiple-choice questions.	Designed to identify changes to students' IC, particularly with respect to their interactions with students from their partner class.
Section C	Students' Perceptions on the Telecollaboration	Three sets of Likert scale statements, one multiple-choice question, and one open-ended question.	Created to evaluate students' perceptions on (1) the extent to which the telecollaboration was beneficial to their learning, engaging, and recommendable; (2) the duration of the telecollaboration; and (3) how the project could be improved in the future.

Data obtained from the questionnaires was coded and subsequently input into Microsoft Excel. Thereafter, statistical tests and descriptive statistical analyses were performed on the data utilizing JASP statistical software. Due to the limited scope of this study, the students' contributions on the Seesaw platform (i.e., the videos and PowerPoints they produced, conjoined with the comments they exchanged with one another) were not analyzed.

2.4. Procedure

The telecollaboration took place within a classroom environment and during normal class periods for all participating students. It spanned from late March 2022 to the beginning of May 2022. The researcher was present in the Catalan students' classes for the entire duration of the project. Prior to commencing the project, consent was obtained from the administrators and teachers from the participating schools and all participating students and their guardians. A consent form (see Appendix A) was issued through a Microsoft Forms link. The form was written in English for the Canadian students and in Catalan for the Catalan students.³ The pre-questionnaire was then administered to both the Canadian and Catalan students in their respective first languages via a Microsoft Forms link (see Appendix C).

Thereafter, students completed four telecollaborative tasks over the course of six weeks (see Appendix B). The tasks involved students working in small groups in their classes to produce written and oral-based presentations in their respective target languages. The presentations were centered on the exchange of cultural information, such as cultural celebrations, food, entertainment, sports, important cultural sites, and daily life, *inter alia*.

Task content was produced by students using the multimodal tools provided by Seesaw along with various types of presentation-generating software (e.g., PowerPoint, Google Slides, Canva) and the camera functions on students' phones. Content was then shared via Seesaw. Teachers served as moderators and reviewed all student content before it was made visible to other students on Seesaw. Once shared, students engaged in dialogue about their partner class's work on the Seesaw platform through written or audio messages. Students were encouraged to

³ All English-to-Catalan translations were reviewed and corrected by a native Catalan speaker with a native-like English proficiency level.

write in their target language. At the end of the six-week telecollaboration, the post-questionnaire (see Appendix D) was administered to all participants.

2.5. Data Analysis

2.5.1. Section A of the Pre- and Post-Questionnaires (IC Assessment)

Section A of the pre- and post-questionnaires encompassed an IC Assessment designed to quantitatively measure changes in students' IC before and after the telecollaboration. It consisted of 20 five-point Likert scale statements with the following answer options: *strongly agree* (5), *agree* (4), *neutral* (3), *disagree* (2), and *strongly disagree* (1). These statements were evenly divided into four subsections. Each subsection evaluated a specific aspect of IC—namely, *attitudes*, *knowledge*, *skills*, and *internal outcomes* (as derived from Deardorff's [2006a] IC model). Some of the statements utilized in the questionnaire were borrowed from or inspired by the TILA Intercultural Competence Assessment.⁴ The Likert scale statements in this assessment are inherently subjective in nature as they require students to identify their *perceptions* of different aspects of their own IC.

A pre- and post-telecollaboration comprehensive IC score was generated for each student using their aggregate scores on Section A (i.e., through adding their responses to all the Likert statement sets within this section). Students' scores were totalled out of 100. A score of 100 (obtained if the student answered “strongly agree” [5] to all statements) indicated a very high level of IC, whereas a score of 20 (yielded if the student answered “strongly disagree” [1] to all the statements) suggested a comparatively low level of IC. Students could receive scores anywhere within the range of 20 to 100. The overall scores of students that answered “does not

⁴ TILA. (n.d.). Assessing Intercultural Communicative Competence (ICC). Retrieved from https://anglotic.blogs.uv.es/files/2017/11/ICC_Assessment_Questionnaire_EN.pdf

apply” to any statements were adjusted to account for the omission of the Likert statements that did not apply to them.

In addition to receiving a comprehensive score out of 100, students received a score out of 25 on each dimension of their IC. A score of 25 (obtained if students marked strongly agree [5] for all statements) indicated a very high level of IC in the specific dimension, whereas a score of 5 (obtained if students selected strongly disagree [1] for all statements) suggested a very low level of IC. If students answered “does not apply” to *all* questions within a particular IC dimension subsection, their responses were omitted from subsection-specific calculations.

Students’ Section A comprehensive scores and their specific IC dimension scores were recorded in Microsoft Excel spreadsheets for later statistical analysis in JASP. Student names were coded as numbers (e.g., “Student 1,” “Student 2,” etc.) and colored according to their class assignment.

2.5.2. Section B of the Pre- and Post-Questionnaires (Supplementary IC Questions)

Section B of the pre- and post-questionnaires consisted of three checklist questions with weighted response options and two multiple-choice questions. These were designed to provide supplementary quantitative data on changes in students’ IC pre- and post-telecollaboration, with a focus on students’ abilities to competently interact with students from their partner region/country (i.e., Western Canada or Catalonia, Spain). For the checklist questions, students were encouraged to check *all answers* that applied to them. Each checklist response was weighted (values of 0, 0.5, or 1) depending on how indicative the response option was of IC. Higher scores on students’ responses suggested greater levels of IC. Appendix C shows the questionnaires with their respective answer weightings; the weightings were, however, omitted on the questionnaires issued to students.

Students' responses were totalled up for each question and recorded in Microsoft Excel for later statistical analysis. The same student name and class coding method used in Section A was also employed for the Section B data.

2.5.3. Section C of the Post-Questionnaire (Perceptions of the Telecollaboration)

Section C focused on students' retrospective perceptions of the telecollaboration; it was therefore included only in the *post*-questionnaire. This section consisted of three sets of five-point Likert scale statements, one multiple-choice question, and one open-ended question. The Likert scale statements were developed to gather data on students' perceptions on the extent to which the telecollaboration was beneficial to their learning, engaging, and recommendable. Answer options included *strongly agree* (5), *agree* (4), *neutral* (3), *disagree* (2), and *strongly disagree* (1). Students' responses to each Likert scale statement were recorded on an Excel spreadsheet in preparation for later descriptive statistical analysis.

Students' overall scores for each *set* of Likert statements were also computed and recorded. The "Benefits to Learning" and "Engagement" Likert sets both consisted of six five-point Likert statements; therefore, students could obtain a maximum score of 30 on this category. The "Recommendations" Likert set contained three five-point Likert statements; students could therefore obtain a maximum score of 15 on this category. The higher the score on each section, the more likely students were to agree that the project benefitted their learning, was engaging, and was recommendable.

The multiple-choice question gauged students' views on the duration of the telecollaboration: it asked students to identify whether the duration of the telecollaboration was *too short*, *perfect*, or *too long*. Students' responses were recorded in Microsoft Excel for subsequent descriptive analysis.

Lastly, the open-ended question elicited recommendations from students on how to improve the project in the future. Students' short-answer responses were recorded in a Microsoft Excel file and then manually coded for different emergent themes. The number of student responses associated with each theme was then tallied.

2.6. Statistical Analyses

To analyze the aforementioned data, a combination of paired samples t-tests, descriptive statistical analyses, a repeated measures ANOVA, and chi-square tests were all conducted using JASP statistical software. The following subsections identify and explain the specific statistical tests used in Sections A, B, and C of the pre- and post-questionnaires, respectively.

In total, data from 73 participants ($n=73$) was included in the Section A and B statistical analyses; this was the total number of students that completed *both* the pre- and post-telecollaboration questionnaires. As five students completed *only* the post-questionnaire (and not the pre-questionnaire), their data was excluded from these sections, as comparing their pre- to post-scores was essential. In Section C, however, the five students' data *was* included, as Section C was only part of the post-questionnaire. As a result, the total sample size for the Section C analyses was 78 ($N=78$).

2.6.1. Section A (IC Assessment)

Concerning Section A of the questionnaire, a paired samples t-test was conducted to determine whether there were statistically significant changes in students' overall pre- and post-telecollaboration IC assessment scores. Both the Western Canadian and Catalan students' data was initially combined ($n=73$). Descriptive statistics were also performed to generate students' precise pre- and post-mean IC scores. Together, these help to address research question #1,

which sought to examine the extent to which students' IC increased as a result of the telecollaboration intervention.

Next, paired samples t-tests were performed on students' scores on each IC dimension. These further tests were undertaken to determine whether there was evidence of differential growth pre- to post-telecollaboration in these specific IC dimensions. The Western Canadian and Catalan students' data on these subsections was examined in combination. These additional tests provide more nuanced data to support the answering of research question #1.

Thereafter, the Western Canadian and Catalan students' data was separated, and an additional paired samples t-test and descriptive statistical analysis were performed on each data set separately. There were 20 students in the Canadian sample (n=20) and 53 students in the Catalan sample (n=53). Separate tests were run to illuminate whether there was statistically significant growth in *both* groups' IC and how their overall IC development differed. This addresses research question #2, which sought to investigate the degree to which overall IC development was comparable in students from the two different regions. A repeated measures ANOVA was also conducted to assess the relationship between students' nationality, their pre- and post-mean overall IC scores, and their IC dimensions.

2.6.2. Section B (Supplementary IC Questions)

With respect to Section B, paired samples t-tests and descriptive statistical analyses were run on students' pre- and post-questionnaire responses to both the checklist and multiple-choice questions. These were conducted to provide supplementary data on changes in students' IC dimensions after the telecollaboration, specifically with respect to interacting with students from their partner region. This provides further support for research question #1. Due to the small

number of questions associated with each IC dimension, responses to each question were analyzed individually, and aggregate IC dimension category scores were not calculated.

2.6.3. Section C (Perceptions of the Telecollaboration)

Concerning Section C of the post-telecollaboration questionnaire, descriptive statistical analysis was performed on students' comprehensive scores for each Likert scale set—namely, “Benefits to Learning,” “Engagement,” and “Recommendations.” The mean, standard deviation, and range were generated. Thereafter, descriptive statistical analysis was also conducted to analyze students' responses on each five-point Likert scale statement. The mean, standard deviation, and mode were calculated. Chi-square tests were then run to determine whether students' responses to each Likert statement are representative of the general population—that is, of all secondary-level language students. Collectively, these tests and analyses support the answering of research questions 3 and 4, which ask whether students found the telecollaboration beneficial to their learning, engaging, and recommendable.

Lastly, descriptive statistical analysis was also performed on the multiple-choice question in Section C which probed students' perceptions of the duration of the telecollaboration. The frequency and percentage of students that answered each answer option were calculated.

Chapter 3: Results

This chapter presents the results of the statistical tests, descriptive analyses, and coded qualitative data. The findings of the tests and analyses associated with data from Section A of the questionnaires are presented first, followed by the findings of the tests and analyses corresponding to Sections B and C, respectively.

3.1. Section A: Tests and Analyses Utilizing Combined Data

The tests in this section were performed on data from *both* the Western Canadian and the Catalan students (n=73).

3.1.1. Overall IC Scores- Paired Samples T-Test and Descriptive Statistics

The results of the paired samples t-test and descriptive statistical analysis for the pre- and post-IC assessments are summarized in Table 5. The results reveal a significant increase in students' scores from the pre-telecollaboration assessment (M=78.12, SD=8.91) to the post-telecollaboration assessment (M=82.06, SD= 9.46); $t(72) = -3.81$, $p < .001$.

Table 5

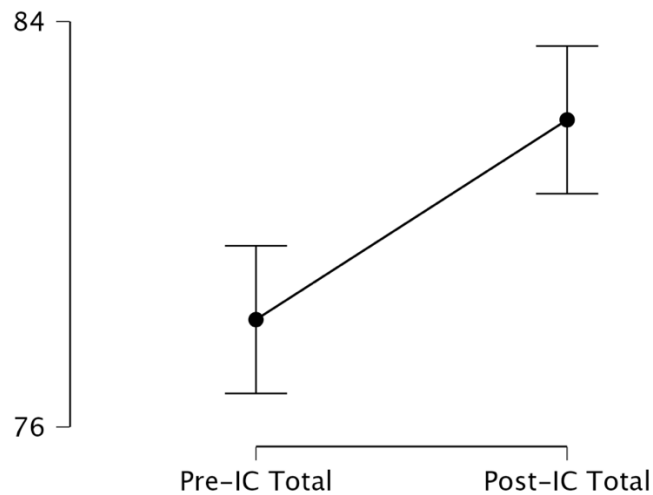
Paired Samples T-Test and Descriptives- Pre- and Post-IC Assessment (Both Schools)

Measure 1	Measure 2	t	df	p
Pre-IC Total	Post-IC Total	-3.814	72	<.001
	N	Mean	SD	SE
Pre-IC Total	73	78.118	8.908	1.043
Post-IC Total	73	82.059	9.457	1.107

Figure 8 below shows a visual depiction of the increase in students' IC pre- to post-telecollaboration.

Figure 8

Increase in Participants' IC Assessment Scores Pre- to Post-Telecollaboration



3.1.2. IC Dimensions- Paired Samples T-Tests and Descriptive Statistics

The data from the paired samples t-tests for the specific dimensions of IC (i.e., attitudes, knowledge, skills, and internal outcomes) is summarized below. With respect to the *attitudes* dimension, which assessed the extent to which students perceived themselves as open towards, curious about, and respectful of people of other cultures, students collectively demonstrated significant growth in their scores from the pre-questionnaire (M=19.56 SD=3.33) to the post-questionnaire (M=20.74; SD=2.81); $t(72)=-3.563$, $p<.001$ (see Table 6 and Figure 9 below).

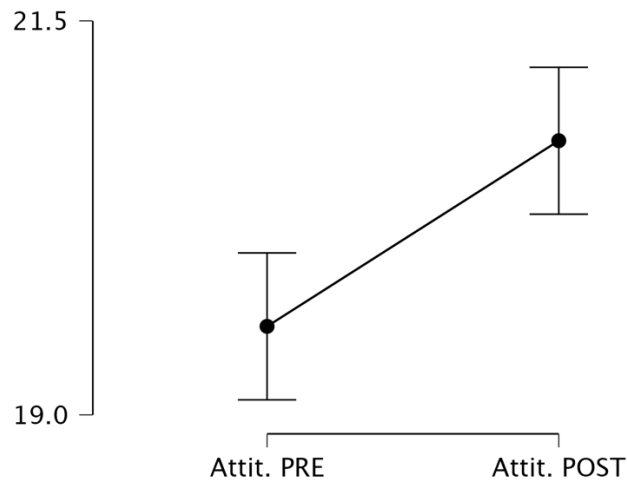
Table 6

Paired Samples T-Test and Descriptives- IC Assessment- Attitudes Section (Both Schools)

Measure 1	Measure 2	t	df	p
Pre-IC Attit.	Post-IC Attit.	-3.563	72	<0.001
	N	Mean	SD	SE
Pre-IC Attit.	73	19.562	3.329	0.390
Post-IC Attit.	73	20.740	2.809	0.329

Figure 9

Changes in Participants' Attitude Dimension of IC



Concerning *knowledge*, which assessed students' perceptions of their cultural self-awareness and culture-specific knowledge, students also exhibited a significant increase in their scores from the pre-questionnaire (M=17.89; SD= 2.54) to their scores on the post-questionnaire (M=19.06; SD=3.00); $t(72)=-3.181$, $p=.002$ (see Table 7 and Figure 10 below).

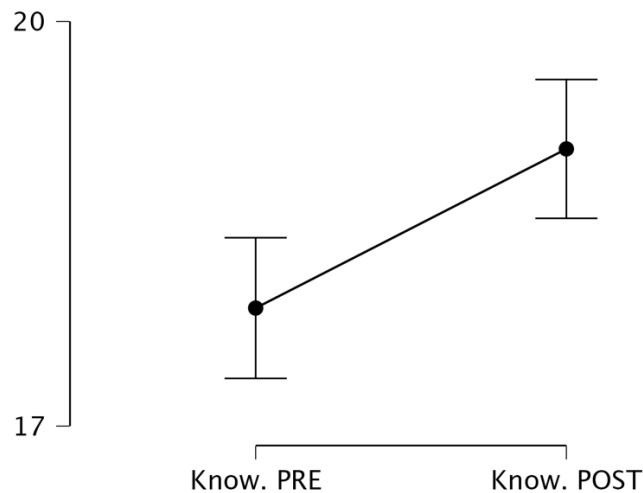
Table 7

Paired Samples T-Test and Descriptives- IC Assessment- Knowledge Section (Both Schools)

Measure 1	Measure 2	t	df	p
Pre-IC Know.	Post-IC Know.	-3.181	72	0.002
	N	Mean	SD	SE
Pre-IC Know.	73	17.890	2.537	0.298
Post-IC Know.	73	19.055	3.004	0.352

Figure 10

Changes in Participants' Knowledge Dimension of IC



The skill IC dimension concerns students' ability to listen to, observe, interpret, analyze, evaluate, and relate to people from other cultures. In this IC element, students displayed marginal, albeit not statistically significant, growth from their pre-questionnaire mean scores ($M=20.40$, $SD=2.63$) to their post-questionnaire mean scores ($M= 20.86$, $SD= 2.89$); $t(71)=-1.400$, $p=0.166$ (see Table 8 and Figure 11 below). One student's post-IC knowledge data was omitted as the student answered "non-applicable" to all Likert statements in this subsection.

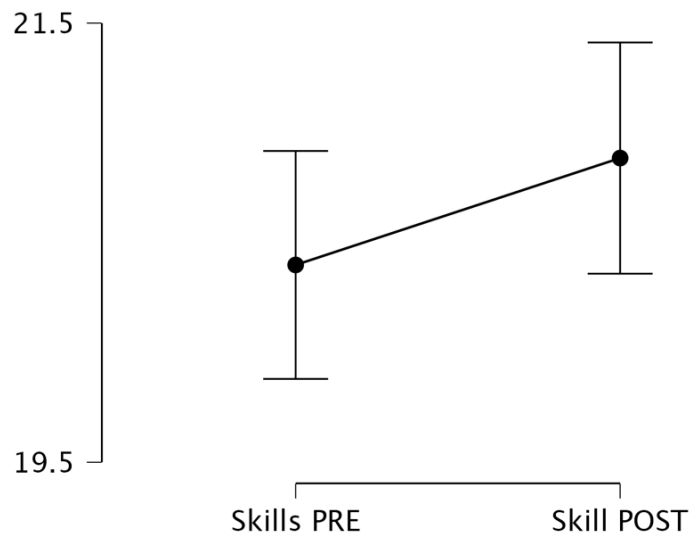
Table 8

Paired Samples T-Test and Descriptives- IC Assessment- Skills Section (Both Schools)

Measure 1	Measure 2	t	df	p
Pre-IC Skills	Post-IC Skills	-1.400	71	0.166
	N	Mean	SD	SE
Pre-IC Skills	73	20.399	2.628	0.308
Post-IC Skills	72	20.885	2.888	0.340

Figure 11

Changes in Participants' Skill Dimension of IC



The last subsection-- internal outcomes-- concerns students' perceptions of their flexibility, adaptability, and empathy in interactions with people of other cultures. In this subsection, students exhibited modest, yet statistically significant, growth in their scores from the pre-questionnaire (M=20.58, SD=3.06) to their scores on the post-questionnaire (M=21.29; SD=2.66); $t(69)=-2.089$, $p=0.040$ (see Table 9 and Figure 12 below). Three students' post-questionnaire scores were not factored into the calculation as they answered "non applicable" to *all* Likert scale statements in the internal outcome subsection.

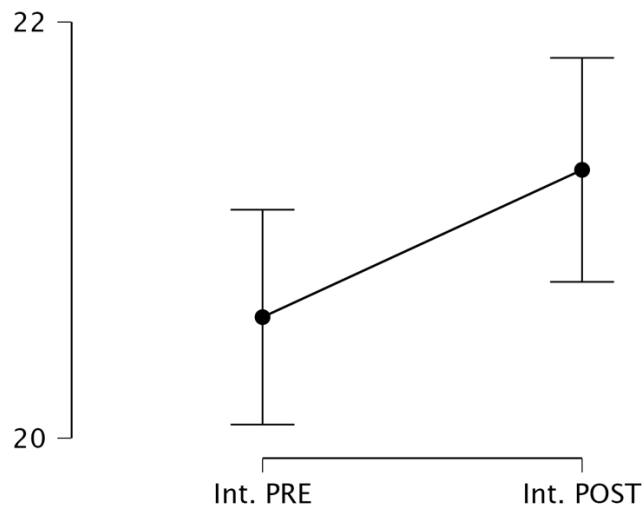
Table 9

Paired Samples T-Test and Descriptives- IC Assessment- Internal Outcomes Section (Both Schools)

Measure 1	Measure 2	t	df	p
Pre-IC Int.	Post-IC Int.	-2.089	69	0.040
	N	Mean	SD	SE
Pre-IC Int.	73	20.582	3.064	0.359
Post-IC Int.	70	21.289	2.661	0.318

Figure 12

Changes in Participants' Internal Outcomes Dimension of IC



The IC dimension in which all participants showed the greatest growth in their mean scores from the pre-telecollaboration to the post-telecollaboration was in attitudes (a mean difference of 1.18 points), followed by knowledge (a mean difference of 1.17 points).

3.2. Section A: Tests and Analyses of Separate Data (By Region)

This section similarly presents the results of the tests and analyses performed on data from Section A of the questionnaire. The tests in this section, however, were conducted separately on the data from the Western Canadian students (n=20) and Catalan/Spanish students (n=53).

3.2.1. IC Assessment Scores- Paired Samples T-Test and Descriptive Statistics

Paired samples t-tests were conducted on the separate IC assessment scores of the Western Canadian students and Catalan/Spanish students (see Tables 10 and 11, respectively). The scores of the Western Canadian students significantly increased from the pre-assessment (M=78.73, SD=7.64) to the post-assessment (M=82.05, SD=7.49); $t(19) = -2.19$, $p = .041$. Similarly, the Catalan/Spanish students' scores showed a significant increase from the pre-

assessment (M=77.89, SD= 9.40) to the post-assessment (M=82.06, SD=10.17); $t(52) = -3.19$, $p = .002$. The increase in the mean scores of students' pre- versus post-telecollaboration IC assessments was comparable for the Western Canadian and Catalan students (an increase of 3.32 points versus 4.17 points, respectively).

Table 10

Paired Samples T-Test and Descriptives- Pre- and Post- IC Assessment (Western CDN School)

Measure 1	Measure 2	t	df	p
Pre-IC Total	Post-IC Total	-2.189	19	0.041
	N	Mean	SD	SE
Pre-IC Total	20	78.725	7.639	1.708
Post-IC Total	20	82.052	7.493	1.676

Table 11

Paired Samples T-Test and Descriptives- Pre- and Post- IC Assessment (Catalan School)

Measure 1	Measure 2	t	df	p
Pre-IC Total	Post-IC Total	-3.188	52	0.002
	N	Mean	SD	SE
Pre-IC Total	53	77.889	9.399	1.291
Post-IC Total	53	82.061	10.165	1.396

3.2.2. Repeated Measures ANOVA

A repeated measures ANOVA was performed to provide supplementary information on students' IC development pre- and post-telecollaboration (see Table 12 below). There were three key findings from the ANOVA. First, the ANOVA confirmed that the changes in students' mean pre- and post-IC assessment scores were statistically significant: $F(1,16) = 16.372$, $p < .001$. Second, the findings suggested that nationality was *not* an influential factor in affecting students' *overall* pre- and post-IC assessment scores: $F(1,16) = 0.838$, $p = .374$. The minor differences in the Catalan/Spanish and Canadian students' overall growth in IC are therefore inconsequential.

Third, nationality *did* affect students' pre- and post-IC *dimension* scores: $F(3, 48)=18.133$ $p=.004$. Thus, while nationality did not impact students' overall IC development, it did play a statistically significant role in affecting students' *dimensions* of IC prior to and following the telecollaboration.

Table 12

ANOVA: Students' Nationality, Overall IC Assessment Scores, and IC Dimension Scores

Within Subjects Effects

Cases	Sum of Squares	df	Mean Square	F	p
Nationality	28.633	1	28.633	1.116	0.306
Residuals	410.528	16	25.658		
Assessments	73.872	1	73.872	16.372	< .001
Residuals	72.195	16	4.512		
IC Dimensions	234.304	3	78.101	15.827	< .001
Residuals	236.864	48	4.935		
Nationality * Assessments	6.256	1	6.256	0.838	0.374
Residuals	119.498	16	7.469		
Nationality * IC Dimensions	54.398	3	18.133	5.003	0.004
Residuals	173.958	48	3.624		
Testing * IC Dimensions	11.298	3	3.766	1.396	0.256
Residuals	129.526	48	2.698		
Nationality * Assessments * IC Dimensions	10.966	3	3.655	1.151	0.338
Residuals	152.421	48	3.175		

Note. Type III Sum of Squares

Further descriptive analysis provides a more nuanced examination of the ways in which the Catalan/Spanish and Western Canadian students differed in their dimensions of IC pre- and post-telecollaboration (see Table 13 below).

Table 13*Descriptives Comparing Catalan/Spanish and Canadian Students' Dimensions of IC*

Nationality	Testing	IC Dimensions	Mean	SD	N
Catalan/Spanish	Pre-ques.	Attitudes	20.118	3.371	17
		Knowledge	16.882	2.690	17
		Skills	20.941	2.561	17
		Internal Outcomes	21.176	2.481	17
	Post-ques.	Attitudes	21.765	2.905	17
		Knowledge	19.412	2.425	17
		Skills	21.441	2.561	17
		Internal Outcomes	21.882	2.667	17
	Pre-ques.	Attitudes	19.353	2.691	17
		Knowledge	18.647	2.029	17
		Skills	19.529	2.934	17
		Internal Outcomes	20.206	2.722	17
Canadian	Post-ques.	Attitudes	20.059	2.135	17
		Knowledge	19.412	2.599	17
		Skills	20.250	2.201	17
		Internal Outcomes	20.971	1.940	17

Although there was a statistically significant relationship found between students' nationality and their pre- and post-IC dimension scores, the descriptive analysis shown above reveals the mean differences in scores were minimal. Therefore, no further investigation on the differences between the students' pre- and post-IC scores from each region was warranted.

3.3. Section B: Paired Samples T-Test- Multiple Choice and Checklist Questions

This section summarizes the data from the paired samples t-tests and descriptive statistics for each multiple choice and checklist question in Section B of the pre- and post-questionnaires. Students' data from both schools was combined (n=73). The first question, focused on student *attitudes*, asked students how they *felt* about the idea of interacting with students from their

partner region/country. Students could obtain a maximum of 4 points for this section, with 4 points indicating the highest level of IC. As shown in Table 14, students' scores increased slightly from the pre-telecollaboration (M=2.43, SD= 1.05) to the post-telecollaboration (M=2.66, SD= 1.07); $t(72)=-1.81$, $p=.075$. Nevertheless, this growth was not statistically significant.

Table 14

Paired Samples T-Test and Descriptives- Part B- Question 1

Measure 1	Measure 2	t	df	p
Pre-Part B-Q1	Post-Part B-Q1	-1.810	72	0.075
	N	Mean	SD	SE
Pre-Part B-Q1	73	2.425	1.053	0.123
Post-Part B-Q1	73	2.658	1.070	0.125

The second question, also centered on *attitudes*, asked students what they would like to learn about their partner region/country's culture. Students could obtain a maximum score of 15 points. This question presumes that the more aspects of the partner country students indicate they are interested in learning about, the more open and curious they are about the other culture. As shown in Table 15 below, students' mean scores declined from the pre-questionnaire (M= 5.93, SD= 2.90) to the post-questionnaire (M=4.62, SD= 2.65); $t(72)= 4.31$, $p<.001$. This decline was statistically significant.

Table 15

Paired Samples T-Test and Descriptives- Part B- Question 2

Measure 1	Measure 2	t	df	p
Pre-Part B-Q2	Post-Part B-Q2	4.308	72	<.001
	N	Mean	SD	SE
Pre-Part B-Q2	73	5.932	2.903	0.340
Post-Part B-Q2	73	4.616	2.654	0.311

The third question, focused on *knowledge*, asked students to select a multiple-choice response which best describes their knowledge of the culture of students in their partner school (Canadian versus Catalan/Spanish). The maximum score students could receive is 2 points, suggesting they know a lot about the partner students' culture. Conversely, a score of 1 indicates they know *some things* about the culture; a score of 0.5 indicates they *don't know much*; and a score of 0 reveals they *do not know anything*. As indicated in Table 16, students' mean scores increased from the pre-questionnaire (M= 0.49, SD= 0.36) to the post-questionnaire (M=0.97, SD= 0.30); $t(72)=-8.34$, $p<.001$. This growth was statistically significant.

Table 16

Paired Samples T-Test and Descriptives- Part B- Question 3

Measure 1	Measure 2	t	df	p
Pre-Part B-Q3	Post-Part B-Q3	-8.377	72	<.001
	N	Mean	SD	SE
Pre-Part B-Q3	73	0.486	0.363	0.042
Post-Part B-Q3	73	0.966	0.304	00.036

The fourth question, also focused on *knowledge*, asked students to select a multiple-choice response which best described their knowledge of the similarities and differences between the culture of their partner students and their own. The maximum number of points students could receive is 2 points. A score of 2 indicated students could identify *several* similarities and differences between the two cultures; a score of 1 suggested that students could identify *some* similarities and differences; and a score of 0 indicated they *could not identify any* similarities or differences. As shown in Table 17, students' mean scores rose from the pre-questionnaire (M= 0.82, SD= 0.54) to the post-questionnaire (M=1.15, SD= 0.40); $t(72)=-4.34$, $p<.001$. This rise was statistically significant.

Table 17*Paired Samples T-Test and Descriptives- Part B- Question 4*

Measure 1	Measure 2	t	df	p
Pre-Part B-Q4	Post-Part B-Q4	-4.344	72	<.001
	N	Mean	SD	SE
Pre-Part B-Q4	73	0.822	0.536	0.063
Post-Part B-Q4	73	1.151	0.397	0.046

The fifth question, focused on IC *skills*, asked students to identify which skills from a list they think are important to use when interacting with the students from their partner school. Students could obtain a maximum of 9 points. The higher the students' score, the more indicative it was of IC competence in the skill dimension. As shown in Table 18 below, there was a statistically significant decline from students' pre-questionnaire scores (M= 5.00, SD= 2.22) to their post-questionnaire scores (M= 3.88, SD= 1.92); $t(72)= 5.23$, $p<.001$.

Table 18*Paired Samples T-Test and Descriptives- Part B- Question 5*

Measure 1	Measure 2	t	df	p
Pre-Part B-Q5	Post-Part B-Q5	5.325	72	<.001
	N	Mean	SD	SE
Pre-Part B-Q5	73	5.000	2.224	0.260
Post-Part B-Q5	73	3.877	1.922	0.225

3.4. Section C: Students' Perceptions of the Project

In this section, the results of the descriptive statistical analyses on students' category scores (i.e., benefits to learning, engagement, and recommendations) are reviewed. After presenting each category score, the findings from the descriptive analyses and chi-square tests performed on students' responses to each individual Likert statement *within* the section are presented. Students' data from both schools was combined in this section (N=78).

3.4.1. Benefits to Learning- Descriptives and Chi-Square Tests

Six Likert Scale statements, each weighted out of five, comprised the “Benefits to Learning” subsection. As shown in Table 19 below, students’ mean aggregate “Benefits to Learning” category score was 24.21. This suggests the students on average *agreed* that the telecollaboration was beneficial to their learning (30 represents *strongly agree*, 24 represents *agree*, 18 represents *neutral*, 12 represents *disagree*, and 6 represents *strongly disagree*).

Table 19

Descriptive Statistics- Benefits to Learning Aggregate Score

Benefits to Learning	
Valid	78
Missing	0
Mean	24.205
Std. Deviation	3.719
Minimum	15.000
Maximum	30.000

The mean, standard deviation, and mode of students’ responses to each question within the “Benefits to Learning” section are stated in Table 20 below. The findings reveal that students, on average, *agreed* that the project (1) was useful to learn about another culture (M=4.32, SD=0.69), (2) beneficial in helping them know how to interact with people of another culture (M=4.26, SD=0.65), (3) helpful in opening their mind to learning from people of another culture (M=4.24, SD= 0.71), (4) useful in improving their target language skills (M=4.03, SD= 0.81), and (5) beneficial overall to their learning (M=4.00, SD= 0.85). Students were on average slightly less likely to agree that the project was helpful in making them more aware of their own culture (M= 3.94, SD= 0.727).

Table 20*Descriptive Statistics- Perceived Benefits of the Telecollaboration to Students' Learning*

Statement	Mean	SD	Mode
1. I found this project useful in learning about another culture.	4.321	0.693	5.000
2. This project was beneficial in helping me know how to interact with people of another culture.	4.256	0.653	4.000
3. This project was helpful in opening my mind to learning from people of another culture.	4.244	0.706	4.000
4. This project was helpful in improving my English/Spanish language skills.	4.026	0.805	4.000
5. This project was helpful in making me more aware of my own culture.	3.936	0.727	4.000
6. Overall, I felt I learned a lot through this project.	4.000	0.853	4.000

Chi-square tests were conducted to determine whether participants' responses to each question would be expected in the general population of secondary-level language learners (see Table 21 below). The results show that student responses to all questions are significant: the p-value of each chi-square test is less than .001. Therefore, similar responses can be expected if the study were repeated using a similar population.

Table 21*Chi-Square Results for Students' Perceived Benefits to Learning*

Statement	X²	df	p
1. I found this project useful in learning about another culture.	76.744	4	<.001
2. This project was beneficial in helping me know how to interact with people of another culture.	83.667	4	<.001

3. This project was helpful in opening my mind to learning from people of another culture.	71.359	4	<.001
4. This project was helpful in improving my English/Spanish language skills.	58.667	4	<.001
5. This project was helpful in making me more aware of my own culture.	68.795	4	<.001
6. Overall, I felt I learned a lot through this project.	55.718	4	<.001

3.4.2. Level of Engagement- Descriptives and Chi-Square Tests

The “Level of Engagement” section was similarly comprised of six questions, each weighted out of five. As shown in Table 22 below, students’ mean score was 24.97. This reveals that students, on average, *agreed* that the telecollaboration was engaging.

Table 22

Descriptive Statistics- Level of Engagement Aggregate Score

	Engaging
Valid	78
Missing	0
Mean	24.974
Std. Deviation	3.505
Minimum	16.000
Maximum	30.000

The mean, standard deviation, and mode of students’ responses to each question within the “Level of Engagement” section are stated in Table 23 below. As the findings reveal, students, on average, *agreed* that they (1) were eager to participate in the project when they learned about it (M= 4.06, SD= 0.78), (2) found the project activities interesting and enjoyable (M=4.21, SD= 0.75), (3) appraised the project as more interesting than their usual class projects and assignments (M= 4.35, SD= 0.68), (4) participated a lot in the project (M=4.17, SD= 0.67), (5)

always put their best effort into the project ($M= 4.22$, $SD= 0.66$), and (6) overall greatly enjoyed the project ($M= 4.32$, $SD= 0.69$).

Table 23

Descriptive Statistics- Level of Engagement Individual Questions

Statement	Mean	SD	Mode
1. I was eager to participate in this project when I learned about it.	4.064	0.779	4.000
2. I found the activities in the project interesting and enjoyed doing them.	4.205	0.745	4.000
3. I found this project more interesting than my usual class projects and assignments.	4.346	0.680	5.000
4. I participated a lot in the project.	4.167	0.673	4.000
5. I always put my best effort into the project.	4.218	0.658	4.000
6. Overall, I really enjoyed this project.	4.321	0.693	5.000

The results of chi-square tests carried out on each question in the “Level of Engagement” section reveal that students’ responses can be generalized to a similar population of secondary-level language learners. As shown in Table 24 below, the p-value of each chi-square test is less than .001.

Table 24

Chi-Square Test Results for Level of Engagement

Statement	X ²	df	p
1. I was eager to participate in this project when I learned about it.	57.000	4	<.001
2. I found the activities in the project interesting and enjoyed doing them.	73.923	4	<.001

3. I found this project more interesting than my usual class projects and assignments.	80.077	4	<.001
4. I participated a lot in the project.	79.051	4	<.001
5. I always put my best effort into the project.	82.897	4	<.001
6. Overall, I really enjoyed this project.	76.744	4	<.001

3.4.3. Willingness to Recommend the Project- Descriptives and Chi-Square Tests

The “Recommendations” section was comprised of three questions, each weighted out of five. A score of 15 indicated students would highly recommend the project, whereas a score of 3 suggested they would not recommend it at all. As evidenced by their mean score of 13 (see Table 25), on average, students would strongly recommend the project to other students and to their teacher to repeat again.

Table 25

Descriptive Statistics- Recommendations Aggregate Score (Both Schools)

Recommendations	
Valid	78
Missing	0
Mean	13.141
Std. Deviation	1.711
Minimum	8.000
Maximum	15.000

The mean, standard deviation, and mode of students’ responses to each question within the “Recommendations” section are stated in Table 26 below. As the findings reveal, students all *agreed* that (1) they would recommend the project to other students studying their target language (M= 4.41, SD= 0.63), (2) projects like this are valuable for all students studying a foreign language (M=4.30, SD= 0.58), and (3) they would recommend that their teacher do a project like this again in their class sometime (M= 4.39, SD= 0.74).

Table 26*Descriptive Statistics- Recommendations Individual Questions*

Statement	Mean	SD	Mode
1. I would recommend this project to other students studying English/Spanish.	4.410	0.633	5.000
2. I think projects like this are valuable for all students studying a foreign language.	4.295	0.584	4.000
3. I would recommend that my teacher do a project like this again in my class sometime.	4.385	0.743	5.000

The results of chi-square tests carried out on each question in the “Recommendations” section reveal that students’ responses can be generalized to a similar population of secondary language learners. As specified in Table 27 below, the p-value for each test was less than .001.

Table 27*Chi-Square Test Results for Recommendations*

Statement	X²	df	p
1. I would recommend this project to other students studying English/Spanish.	90.974	4	<.001
2. I think projects like this are valuable for all students studying a foreign language.	103.667	4	<.001
3. I would recommend that my teacher do a project like this again in my class sometime.	81.744	4	<.001

In addition to the Likert scale statements, students were asked a multiple-choice question to gauge how they felt about the duration of the telecollaboration. Students were provided with three answer options: *perfect*, *too long*, and *too short*. The frequency of students’ responses is reported in Table 28 and depicted in Figure 13 below. Of the 78 respondents, 61.54% of students

stated they felt the telecollaboration was too short, while 37.18% identified it was the perfect length. Only 1% (1 student) indicated they felt it was too long.

Table 28

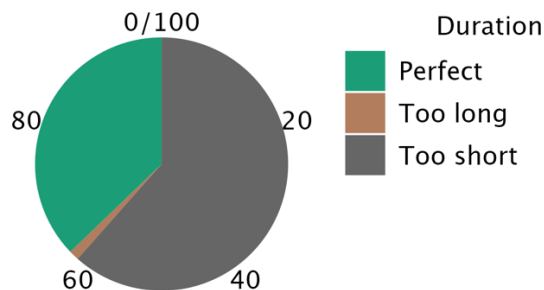
Students' Views on the Duration of the Telecollaboration

Frequencies for Duration

Duration	Frequency	Percent	Valid Percent	Cumulative Percent
Perfect	29	37.179	37.179	37.179
Too long	1	1.282	1.282	38.462
Too short	48	61.538	61.538	100.000
Missing	0	0.000		
Total	78	100.000		

Figure 13

Students' Perceptions of the Duration of the Telecollaboration



The last question on the post-questionnaire asked students if they had any suggestions to improve the project. Numerous students from both schools provided positive feedback on the telecollaboration, suggesting it was an enjoyable experience for them and stating they did not have recommendations to improve it. Examples of such student responses can be found in Table 29 below. English translations are provided for the responses written in Catalan.

Table 29*Responses to the Short-Answer Recommendations for Improvement Question*

Catalan/Spanish Student's Response	<i>"La veritat es que no, tot ha estat perfecte." ("Not really, everything has been perfect.")</i>
Catalan/Spanish Student's Response	<i>"Tot súper bé i molt bona organització, res a dir." ("Everything went super good and very well organized, nothing else to say.")</i>
Catalan/Spanish Student's Response	<i>"Ningún, tot m'ha semblat bé." ("None, everything went well for me.")</i>
Canadian Student's Response	<i>"It was overall fun and well formatted."</i>
Canadian Student's Response	<i>"Overall I thought it was productive and helpful to learn about different cultures in other countries."</i>
Canadian Student's Response	<i>"Overall, it was pleasant to learn and actually interact with the people of the culture we are learning about. It makes sense to communicate with the people you learn about up to 3 times a week, but surprisingly this was the first time I have ever done something like this in the 5 school years I've done Spanish class. This was engaging and fun and I particularly like the fact that it was with students our age. It made this experience real the enthusiasm brought by both groups will definitely help telecollaborations like this in the future."</i>

Some students also identified specific suggestions to improve the telecollaboration in the future. Their responses were categorically coded. In total, 10 students recommended adding video calls to the project, some of whom, however, acknowledged the difficulty with time differences. Two students suggested coordinating an in-person meeting with the students in their partner class. Two students recommended making some of the tasks more challenging or based on more complex topics. Two students stated the project should be longer. One student suggested incorporating peer correction of the language into the project to help students further develop their language skills. Lastly, one student recommended integrating social media into the project so the participants could get to know their partner students even better.

Chapter 4: Discussion

4.1. Potential Significance of the Findings

4.1.1. *Secondary Language Learners' IC Development*

4.1.1.1. Changes in Overall IC

The first hypothesis predicted that a short-term asynchronous telecollaboration would yield substantial growth in secondary-level students' IC. This was informed by previous research which showed that language learners, both at the tertiary- and secondary-levels, progressed in their IC through various types of telecollaborations. The results of the paired samples t-test conducted on all participants' overall pre- and post-IC assessment scores showed a significant increase in students' IC scores following the six-week asynchronous telecollaboration. Indeed, participants' mean scores rose from 78.12 to 82.06; $t(72) = -3.81$, $p < .001$. Based on these results, the hypothesis has been accepted, and the null hypothesis has been rejected.

The second hypothesis anticipated that students from both regions (Western Canada and Catalonia) would exhibit highly similar levels of growth in their overall IC. Two paired samples t-tests and descriptive analyses, conducted separately on students from both regions, revealed that the levels of growth in overall IC among the two groups of students were comparable. The Western Canadian students displayed a significant increase of 3.32 points from their pre-IC assessment scores ($M=78.73$, $SD= 7.64$) to their post-IC assessment scores ($M=82.05$, $SD= 7.49$); $t(19) = -2.19$, $p=.041$. Similarly, the Catalan students showed a significant increase of 4.17 points from their pre-IC assessment scores ($M=77.89$, $SD= 9.40$) to their post-IC assessment scores ($M=82.06$, $SD= 10.17$); $t(52) = -3.19$, $p=.002$. The repeated measures ANOVA also revealed that the relationship between the nationality of the students and overall IC assessment results was not statistically significant: $F(1, 16) = 6.256$ $p=0.374$. Nationality, therefore, was not

found to influence students' overall IC assessment scores. This confirms the second hypothesis that the students from the two different regions exhibited highly similar levels of comprehensive IC growth; the corresponding null hypothesis can therefore be rejected.

The increase in overall IC displayed by both the Western Canadian and Catalan/Spanish students suggests short-term asynchronous telecollaborations are effective in secondary-level language classrooms. It is promising that *all* students, regardless of the region/country they were from, showed similar levels of overall IC growth from the telecollaboration. The findings from the analyses conducted on all students' pre- and post-*dimensions* of IC, however, allow for a richer and more nuanced portrait of students' IC development. To follow is an examination of the changes students exhibited in each of their IC dimensions pre- to post-telecollaboration.

4.1.1.2. Changes in Attitudes

Collectively, participants (n=73) showed the greatest growth in the attitudes dimension of their Section A IC assessment. Students' scores in this dimension increased by 1.18 points from the pre-assessment (M=19.56 SD=3.33) to the post-assessment (M=20.74; SD=2.81); $t(72)=-3.563$, $p<.001$. This suggested that post-telecollaboration, participants identified themselves as being more open towards, curious about, and respectful of people of other cultures than they were pre-telecollaboration.

The two supplementary attitudes-centered questions in Section B of the questionnaire, however, did not reveal significant growth. The first question asked participants how they felt about interacting with students from their partner region/country. Students' mean scores on this question rose pre-telecollaboration (M=2.43, SD= 1.05) to post- telecollaboration (M= 2.66, SD= 1.07); $t(72)= 01.81$, $p=.075$; however, this growth was not statistically significant. This lack of significant growth could be attributed to many students feeling similar about interacting with

their partner class before and after the telecollaboration. A question asking how interested, curious, and excited participants would be to interact with students of a different culture in a future telecollaboration could have produced different results. The second question asked students which aspects of their partner class's regional/national culture they would like to learn about. Students identified more aspects in the pre-questionnaire ($M= 5.93$, $SD= 2.90$) than the post-questionnaire ($M=4.62$, $SD= 2.65$); $t(72)= 4.31$, $p<.001$. This could be attributed to students having already learned about certain elements of their partner class's culture during the telecollaboration and therefore feeling it would be unnecessary to learn about them again.

The t-test and descriptive analysis results described above do not fully capture the extent of the positive changes in the students' attitudes the researcher witnessed firsthand from her presence in the Catalan classes. While the Catalan/Spanish students expressed interest in the project at the onset of it, it was fascinating for her to see how passionate they became in interacting with their respective partner class. Students took a genuine interest in learning from the Western Canadian students and were equally devoted to teaching them about their own culture. When the researcher announced the end of the project to the Catalan/Spanish students, almost all students articulated their disappointment that it was over.

Based on the discussion comments and questions posted on the Seesaw platform by the Western Canadian students, it appeared they were likewise highly open to learning from the Catalan/Spanish students and intrigued about their culture. These anecdotal observations, in conjunction with some of the key statistical findings described above, suggest that telecollaborations of this nature can contribute to growth in students' attitudes with respect to interacting with people of other cultures.

4.1.1.3. Changes in Knowledge

The IC dimension in which all students showed the second greatest amount of growth pre- to post-telecollaboration was *knowledge*. Students' scores increased by 1.17 from the pre-questionnaire (M=17.89; SD=2.54) to the post-questionnaire (M= 19.06; SD=3.00); $t(72)=3.181$, $p=.002$. This indicated that students viewed themselves as more culturally self-aware and knowledgeable about other cultures following the telecollaboration. The results of the two knowledge-related questions in Part B of the questionnaire provided supplementary data to substantiate this finding. Indeed, students' multiple-choice responses indicated that their knowledge of the culture of students in their partner school significantly increased pre-telecollaboration (M= 0.49, SD= 0.36) to post-telecollaboration (M= 0.97, SD= 0.30) $t(72)=-8.34$, $p<.001$. Additionally, their knowledge of the similarities and differences between the culture of their partner students and their own significantly increased pre-telecollaboration (M= 0.82, SD= 0.54) to post-telecollaboration (M=1.15, SD= 0.40); $t(72)= -4.34$, $p<.001$. These results were unsurprising as the telecollaboration emphasized the exchange of culture-based knowledge.

In addition to developing students' attitude dimension of IC, this study has shown that telecollaborations of this nature also have the potential to augment students' knowledge dimension of IC. While the growth shown is notable, it is predicted that a longer telecollaboration would yield more substantial development in this IC dimension.

4.1.1.4. Changes in Skills

IC skills include listening to, observing, altering communication with, and relating to people of other cultures. Students did not show statistically significant growth in the skills dimension of their IC assessment pre-telecollaboration (M=20.40, SD=2.63) to post-

telecollaboration ($M=20.885$, $SD=2.89$); $t(71)=-1.400$, $p=0.166$. Additionally, in the one question in Section B associated with skill development, students identified using fewer IC skills in the telecollaboration than they initially indicated would be important to use in the pre-questionnaire.

Asynchronous telecollaborations are likely less conducive to IC skill development than their synchronous counterparts, thus explaining this lack of growth. In asynchronous communication, for example, students can use online translation tools to aid them in formulating their spoken and written sentences. Additionally, they can rehearse for and re-record videos of themselves speaking or revise their written work several times. They are also not confronted with the challenges of maintaining a conversation in real-time which entails patience, the ability to adapt one's communication style, and the skills to overcome misunderstandings. Some of the skills identified in the skill section of their IC assessment, such as patience, did not, therefore, fully apply to them. In synchronous communication, by contrast, students must necessarily generate speech instantaneously, actively listen to what their interlocutor is saying, adapt their communication as the conversation progresses, and navigate any misunderstandings that arise. Synchronous communication by nature presents students with more diverse communication challenges that warrant the use of additional IC skills.

Despite the lack of measurable growth in the skill dimension of students' IC, in her observations of the Catalan/Spanish students engaging in the telecollaboration, the researcher viewed many instances of the students actively employing skills associated with IC. For example, the students listened attentively to the Western Canadian students' video projects, they interpreted and analyzed differences in their cultures, and they demonstrated that they could relate to the students by identifying and commenting on commonalities between them.

Nevertheless, incorporating a synchronous component to the telecollaboration could lead to more impactful IC skill development.

4.1.1.5. Changes in Internal Outcomes

With respect to the internal outcome dimension of IC, the participating students exhibited modest development in their perceived ability to be flexible, adaptable, and empathetic in their interactions with people of other cultures. There was found to be a statistically significant increase of 0.71 points from students' pre-telecollaboration scores ($M=20.58$, $SD=3.06$) to their post-questionnaire scores ($M=21.29$; $SD=2.66$); $t(69)=-2.089$, $p=.040$.

The addition of a synchronous component to the telecollaboration could cultivate greater growth in participating students' internal outcomes. For example, through talking with one another in real time, students would likely need to show greater flexibility, adaptability, and empathy than in asynchronous forms of communication. Nevertheless, it is encouraging that students were still able to show growth in this IC dimension via a purely asynchronous telecollaboration.

The above analysis of changes in participants' pre- and post-IC dimension scores shows that telecollaborations tend to be more conducive to fostering the development of the *attitudes* and *knowledge* dimensions of IC. Modest, albeit significant, growth was also seen in participants' *internal outcomes* dimension. Nevertheless, the researcher's anecdotal observations suggest there were benefits apparent in all dimensions. This finding, conjoined with the overall commensurate growth in IC found among students from the two regions, lends support for the inclusion of telecollaborations of this nature in secondary-level foreign language classes.

4.1.2. Students' Perceptions on Benefits to Learning and Engagement

A vital consideration when implementing telecollaborative projects is whether they are well-received by students. The third hypothesis predicted that students would appraise their experience with the short-term asynchronous telecollaboration as beneficial to their learning and engaging. The results of the descriptive analysis of students' responses to various Likert scale statements in Section C of the questionnaire showed that students, on average, *agreed* that the telecollaboration was both beneficial to their learning and engaging. Indeed, students' mean category scores were 24.21 (out of a maximum score of 30) for the "Benefits to Learning" section and 24.97 for the "Level of Engagement" section. Thus, the hypothesis can be accepted.

Further analysis of students' responses to each specific statement within the "Benefits to Learning" section reveal that students on average marked *agree* (4) on five of the six Likert statements. Based on their answers to these statements, it can be concluded that students found the project useful in (1) learning about another culture, (2) knowing how to interact with people of another culture, (3) opening their minds to learning from people of another culture, and (4) improving their target language skills. On only one statement, which asked students if their awareness of their own culture grew through the project, was their mean score modestly less than 4.00 (3.90).

In future telecollaborations, to help students further develop awareness of their own culture, it could be helpful to integrate opportunities for students to reflect on their culture and the ways in which it is fundamentally similar to and different from the culture of their virtual exchange partners. This could be accomplished through a combination of journal reflections on predetermined prompts and class discussions. In the present telecollaboration, one task asked students to work with their partner students via the exchange of video presentations to identify

and discover similarities and differences between their cultures. Supplementing this task with more critical and personal reflection could be beneficial.

All in all, however, students' responses to the "Benefits to Learning" section of the post-telecollaboration questionnaire reveal that students found the project useful to their learning. From a pedagogical point of view, student investment in assignment or project work is often closely related to students' perceptions of how valuable the task is to their learning. The more meaningful a task is to student learning, the more effort and energy students tend to devote to it.

Further analysis of the individual statements in the "Levels of Engagement" section reveals that students *agreed*, on average, with each statement. Indeed, students' mean score for each Likert statement ranged from 4.06 to 4.32. Through closer examination of the *mode* of students' responses, it was found that *most* students stated they *strongly agreed* with two of the statements—namely, that the project was more interesting than their usual class projects and assignments and that they greatly enjoyed the project overall.

Student engagement or "buy in" is an important ingredient to a successful telecollaboration. Newmann et al. (1992) characterize engagement as "active involvement, commitment, and concentrated attention" and contrast it with "superficial participation, apathy, or lack of interest" (p. 11). With respect to *academic* engagement, Newmann et al. describe it as the psychological investment students have in and direct towards their learning (p. 12). The extent to which students are invested in and committed to a given academic task is often predictive of student success on the task and the learning that students extract from the task. Students' Likert scale responses to the "Level of Engagement" section, conjoined with the researcher's observations of student engagement (manifested in students' excitement about the project, sustained focus on the tasks, and commitment to producing high quality work) suggest

short-term asynchronous telecollaborations appeal to secondary-level learners. This is congruent with other language-based telecollaborative studies in which researchers similarly found high levels of student engagement in adult participants (Andujar & Medina-López, 2019; Andujar & Rodriguez, 2019; Korkealehto & Leier, 2021).

4.1.3. Students' Willingness to Recommend the Project

Students' willingness to recommend the project is another important indicator of the value that secondary-level language students attribute to short-term asynchronous telecollaborations. The fourth hypothesis predicted that students would be highly likely to recommend the project to other foreign language learners. In the first of three Likert statements in this section, students on average *agreed* they would recommend the project to other foreign language learners (M=4.41), but *most* students *strongly agreed* they would recommend it, as indicated by the mode (Mo=5.00). In the second statement, as reflected in students' mean score, they *agreed* that projects of this nature are valuable for all students studying a foreign language. In the final question, students similarly on average *agreed* that they would recommend that their teacher do a telecollaborative project like this again in their class, but *most* stated they *strongly agreed* with this statement (Mo=5.00). Collectively, students' mean score on the "Recommendations" section was 13, with the maximum score of 15 indicating the highest level of agreement with the Likert statements. Based on these results, the hypothesis can be accepted, and the corresponding null hypothesis can be rejected. The propensity of students to recommend this project is another valuable and pedagogically relevant finding.

Within the "Recommendations" section, students were also asked their perspective on the duration of the project—that is, whether it was *too short*, *perfect*, or *too long*. The majority of students (61.54%) stated that the project was too short. This is an important consideration for

teachers interested in initiating a project of this nature in their language classrooms. It would be advised that they consider telecollaborative projects that span longer durations, such as three months, an entire semester, or even a full school year. Doing so could foster deeper connections between the participating students and cultivate more profound learning.

Students' specific suggestions on how to improve the telecollaboration should also be accounted for in future telecollaborative projects and studies. A notable number of students suggested, for example, including a synchronous component to the telecollaboration. Although students enjoyed connecting with one another asynchronously, this student feedback suggests student engagement and learning could be further augmented through the addition of synchronous components. Two students also suggested making some of the tasks more challenging. Creating tasks which are more complex in nature and go beyond surface-level cultural elements could, therefore, also contribute to a more meaningful telecollaborative project. For example, instead of merely discussing cultural traditions, food, sports, entertainment, and daily life, students could analyze and discuss more intangible elements of culture, such as their beliefs, values, and worldviews. Lastly, one student suggested weaving social media use into the telecollaboration. While the present study mimicked social media in many ways—it used a shared virtual platform; allowed students to post text, photos, and videos; and included a feature to “like” and comment on others' posts—some students expressed their desire to also connect with students via authentic social media sites. A few Catalan/Spanish students mentioned this to the researcher during the project. In future telecollaborative projects, therefore, it could be beneficial to connect students with one another on a shared Facebook page or via Instagram. Some of this communication, however, would inevitably be unregulated by the participating teachers which might need to be handled cautiously.

To recapitulate, the consideration of whether to implement short-term asynchronous telecollaborations in secondary-level foreign language classrooms to nurture learners' IC development must necessarily take into account (1) the extent to which they are effective in developing students' IC, and (2) the degree to which they are well-received by students. This study has produced evidence suggesting that asynchronous telecollaborations can be effective in fostering comprehensive IC development in participants. The appeal of this pedagogical tool to language learners at the secondary level was also evident. The findings of the study have additionally illuminated specific ways in which the telecollaboration model used in the study could be improved upon for future use.

4.2. Limitations of the Study

There were four key limitations to the study, the most significant of which was time. Although the project was carried out for the full six-week period, not all telecollaborative tasks initially planned were completed. This was due to factors such as school spring breaks, statutory holidays, and student examinations. Together these reduced the class time available for students to complete the weekly tasks. The researcher was also cognizant of the participating teachers' need to cover their curriculum and fulfill their year plans; thus, the researcher made an effort to limit the class time needed for the project.

A second limitation was the restricted grade levels of students in the sample which influences the generalizability of the results. The researcher was only able to conduct the study with *two* classes in Catalonia, both at the Grade 9 (3° ESO) level, and *two* classes in Western Canada, one at the Grade 9 level and one at the Grade 10 level. A more representative sample would include additional classes comprised of students in lower grade levels (7 and 8) and higher

grade levels (11 and 12). This would allow the results to be more accurately generalized to all levels of secondary students.

A third limitation was the asymmetrical number of students from Western Canada and Catalonia. This asymmetry precluded the use of dyadic formations or one-on-one language tandems. Moreover, the comparatively small number of students from Western Canada may have influenced the generalizability of results obtained solely from this group (i.e., in the statistical tests which compared students from the two regions).

A final limitation relates to the potential that the self-report style of Likert questionnaires used were susceptible to response bias. The participants' responses might have been skewed by the way the statements were phrased or the potential desire of participants to respond in a way they believe the researcher expects.

4.3. Implications for Further Research

Additional research is recommended to further study the efficacy of different telecollaboration models in promoting IC in secondary-level language learners and to evaluate students' perceptions of such models. Building on participants' suggestions to include real-time communication elements in the present study's telecollaborative project, future studies could examine telecollaboration models with *both* asynchronous and synchronous components. It would be useful to deliberately investigate whether telecollaborations of this mixed nature have the potential to foster greater IC in participants than those which rely solely on either asynchronous or synchronous communication methods. Additionally, it would be interesting to learn whether such telecollaborations with mixed synchronicity are perceived by students as more beneficial to their learning and engaging. Findings from research studies of this nature

could be utilized to create a robust and effective telecollaboration model that could be widely applied in secondary-level language classrooms.

A second area requiring further research is the value of incorporating social media in telecollaborations geared towards secondary-level language learners. This was inspired by participants' feedback. A social media platform, such as Facebook, could be used as the principal platform for communication in a telecollaborative project, or it could be used as in a supplementary manner. It would be interesting to investigate whether the integration of social media fosters greater connections and more frequent interactions between participating students and, by extension, deeper IC development. In addition, it could be beneficial to evaluate student engagement with such telecollaborative models. This would further contribute to existing studies which have produced evidence of students' IC development and engagement in tertiary-level telecollaborations using social media (e.g., Jin, 2015; Korkealehto & Leier, 2021; Madden & Foucher, 2020). Such studies, however, would need to appropriately address privacy concerns associated with social media use with this age group.

A third recommendation for future research is to investigate which telecollaborative communication configurations help foster more profound intercultural learning in students and produce greater student enjoyment. Researchers could compare telecollaborations in which students work in dyadic formations (language tandems), in small groups, as a full class, or a combination of configurations. In Müller-Harmann's (2000) study, participants completed different telecollaborative tasks either individually or in small groups. These were occasionally complemented with full-class (plenary) discussions sessions. While students articulated their enjoyment working with peers on their telecollaborative tasks (p. 131), the "critical incidents" or "misunderstandings" Müller-Harmann describes in her study (p. 127-128) appear to have

occurred in these small group formations. It is possible group dynamics played a role in both catalyzing and exacerbating these incidents. In the TILA project, dyadic and small groups formations were also used, but there was no discussion as to which was preferred by students or more effective. In the present study, students seemed to greatly enjoy the social and creative aspect of working with their peers on the project but were unable to forge strong connections with students from their partner class. It could be valuable to examine which types of communication allow for more meaningful intercultural learning and sustain student interest in the project.

A fourth suggestion is that researchers measure participants' IC in a more holistic and objective manner. This could be accomplished through a mixed-methods data collection approach. While the questionnaires used in the present study were useful, supplementing them with student interviews could be helpful in eliciting more detailed information from students about their telecollaborative experience. Observational methods and the reviewing of students' telecollaborative contributions (i.e., discussion posts, chat logs, etc.) could also be helpful in tracking changes in students' communication with and behaviour towards their telecollaborative partners over an extended period. This, in effect, would allow for an examination of what Deardorff (2006a) terms *external outcomes*-- that is, the manifestations of students' IC. This method could also be beneficial in minimizing the potential for response bias associated with exclusive use of questionnaire data. Application of data triangulation would, however, be a larger undertaking and would likely require multiple collaborating researchers. In particular, as Müller-Harmann (2000) points out in her study, the use of classroom observation methods in telecollaborations requires the presence of researchers in *all* participating classrooms (p. 131).

Inter-rater reliability would therefore need to be addressed to ensure consistency in researchers' rating of external indicators of IC.

A final recommendation is to undertake a qualitative study focused on secondary-level *teachers'* perceptions of and experiences with telecollaborations. As teachers are ultimately the individuals who are responsible for spearheading the telecollaborations, their views on the strengths and weaknesses of different telecollaborative models is invaluable. Additionally, their input on the ideal duration of telecollaborations and the nature of the telecollaboration tasks is vital.

Chapter 5: Conclusion

This study was built on previous research examining the utility of telecollaborations in fostering IC development in foreign language learners. While most studies involved tertiary-level participants, this project focused on students at the secondary level. Utilizing Deardorff's (2006a) IC model as a springboard, it examined a short-term asynchronous method of telecollaboration centered on the completion of culture-based tasks. Using the virtual platform Seesaw, students exchanged presentations and videos and written and voice-recording commentaries. This platform uniquely capitalized on students' abilities to produce and disseminate original content.

The results of this study provide preliminary evidence that short-term asynchronous telecollaborations offer a promising means of aiding secondary-level language learners in developing their overall IC. This supports the existing body of research on telecollaborations and IC development in language learners. Additionally, the present study shows that such telecollaborations are perceived by language learners in the secondary-level age group as beneficial to their learning, engaging, and recommendable. This is encouraging for secondary-level language teachers who may wish to add short-term asynchronous telecollaborations to their pedagogical toolboxes.

While there was evident growth in most IC dimensions assessed, the addition of synchronous components to this study's asynchronous telecollaboration model could further augment students' IC development. These could be added if time zone differences permit and if the synchronous elements are appropriate for students' language levels. It may also be advantageous to lengthen the duration of future telecollaborations of this nature, as most participants indicated in the post-questionnaire that the six-week duration was too short. It is

hoped that the conclusions and recommendations of this study prove valuable to educators and help shape the trajectory of future telecollaboration research.

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Appendix A

Consent Form

The following form was administered via Microsoft Forms to all participants and their parents/legal guardians. The form was translated into Catalan for the Catalan-speaking participants.

PARTICIPANT CONSENT FORM

TITLE OF STUDY

The Use of Asynchronous Telecollaborations to Foster Intercultural Competence in Secondary-Level Foreign Language Learners

(Master's Thesis)

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UNIVERSITY

Department of English and German Studies

– Universitat Rovira i Virgili (URV)

INTRODUCTION

We are contacting you to inform you of the research study in which you are invited to participate. This study has been approved by the Ethics Committee for Research in People, Society and the Environment at Rovira i Virgili University.

It is our intention that you receive the correct and sufficient information so that you can evaluate and decide whether or not you want to participate in this study. For this reason, please read this fact sheet carefully and we will clarify any doubts you may have. In addition, we inform you that you are free to consult with the people you deem appropriate before deciding on your participation in the study.

VOLUNTARY PARTICIPATION

You should be aware that your participation in this study is voluntary and that you may decide not to participate or change your decision and withdraw your consent at any time.

GENERAL DESCRIPTION OF THE STUDY

Summary:

This is a telecollaborative exchange project in which students in two ESO 3 (Grade 9) classes at Col·legi Sant Pau Apòstol in Tarragona, Spain will be partnered with a Grade 9 and a Grade 10 class at Strathcona-Tweedsmuir School in Calgary, Canada. The students will be creating videos (in which they film themselves speaking) and culture-based presentations (e.g., Google Slides/PowerPoint) which they will exchange with each other via the educational application Seesaw. Their videos and presentations will be completed in the second language in which they are learning (i.e., English for the students in Tarragona and Spanish for the students in Calgary). Students will also be asked to comment on one another's work in written format or through audio recordings on Seesaw. Students will be working *asynchronously* (not in real-time) with one another due to the time difference between Western Canada and Spain.

Purpose:

This telecollaboration aims to increase secondary-level language students' intercultural competence through encouraging them to interact with people of other cultures and exchange culture-based information. I will assess students' intercultural competence development via a pre- and post-telecollaboration questionnaire issued to students. Additionally, through the use of the questionnaires, I will also assess whether students found the telecollaboration engaging and beneficial to their learning and whether they would recommend it to other foreign language students.

Data Exchanged and Gathered:

This telecollaboration will involve the exchange of written presentations, videos (of students speaking), and audio recordings of students' voices. These will be posted on Seesaw which will be accessible to the participating students and teachers. The only data collected from students for the purpose of the study are two questionnaires—a questionnaire issued before the start of the project and one issued after the project is over. The questionnaires involve a series of Likert-scale questions, multiple choice questions, and one short answer question. Students will be asked to write their first name on the questionnaires, but in processing the questionnaires, students' names will be converted to numbers (e.g., Student 1).

BENEFITS AND RISKS

Through this project, students will have the unique opportunity to communicate with students of another culture and practice the foreign language they are learning in class. The application that is being used for the telecollaborative exchange is designed for educational purposes and the content can only be accessed by the students and the teachers. Students will be exchanging written work (written presentations), videos of themselves speaking, and audio recordings of their voices. The researcher (me) and teachers (an English teacher in Tarragona and two Spanish teachers in Calgary) will be moderating students' posts and communication with one another. Although only students participating in the study will have access to the content on Seesaw, a risk of this study involves students sharing/showing the contents of the exchange to non-participants.

CONFIDENTIALITY AND DATA PROTECTION

All information collected about the participants in this study will be kept strictly confidential and with the application of the corresponding security measures that guarantee, in addition to their confidentiality, their integrity, availability, authenticity and traceability.

The personal data collected for the study will be identified by a code and only the principal investigator or his / her collaborators will be able to relate this data to the participants. Participants will never be identified in any report, presentation or publication that arises from this study. Therefore, their identity will not be disclosed to anyone except when required by the Ethics Committee to which the study is subject in order to verify the data and procedures of the study.

The Rovira i Virgili University's own information systems installed on its computer network will be used to process the data, applying the information security measures established by Royal Decree 3/2010 which regulates the National Security Scheme. The data will be collected using Microsoft Forms and entered into an excel private file. JASP Statistical software and Atlas.ti will then be used to analyze the data.

The research staff of the study undertakes to comply with Organic Law 3/2018, of 5 December, on the protection of personal data and the guarantee of digital rights, in addition to Regulation (EU) no. 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of individuals with regard to the processing of personal data and will sign a commitment to participation and confidentiality.

The purpose of the data processing is to participate in the study in accordance with the consent of the participant and his / her legal guardian. The participant may interrupt their participation in the study by withdrawing their consent at any time, without the need for justification. Their data will be eliminated from the study and destroyed.

INFORMATION ON THE PROTECTION OF PERSONAL DATA PERSONAL DATA PROTECTION INFORMATION

Person responsible	The person responsible for processing your personal data is the Universitat Rovira with CIF Q9350003A and with its tax address at Carrer de l'Escorxador, s/n, 43003, Tarragona.
Purpose	To participate in master's thesis under the terms described in the participant's information form.
Rights	You can exercise your rights of access, rectification, deletion, portability, limitation or opposition to the processing of your data by writing to the URV's General Registry at the same address as the tax address or by submitting your objection to the General Registry of the University, in person or telematically, as indicated at https://seuelectronica.urv.cat/registre.html .

Additional information

You can consult additional information on this processing of personal data in the document entitled “Bachelor’s and master’s thesis at the URV and your rights” in the URV's Register of Processing Activities published at <https://seuelectronica.urv.cat/rgpd> where also you can consult the URV's Privacy Policy. You can also find this information on the participant’s study form. Additionally, you can send any queries about personal data protection to our data protection delegates at the email address of dpd@urv.cat.

EXTENDED INFORMATION ON THE PROCESSING OF PERSONAL DATA

In accordance with the provisions of current legislation on data protection applicable to the Universitat Rovira i Virgili (URV) and published in the section "Applicable legislation" of the space "Protection of personal data" of the University Electronics (<https://seuelectronica.urv.cat/rgpd/>), the following information is made known to interested parties:

a) Who is responsible for the processing of your data?

• Identification	Universitat Rovira i Virgili CIF: Q9350003A
• Address	Carrer de l'Escorxador, s/n 43003 Tarragona
• Contact Details of the Data Protection Officers	URV data protection officers email: dpd@urv.cat

b) What personal data do we process and for what purpose?

Personal data is processed to enable participation in bachelor’s or master’s under the terms described in the participant’s information form. In the event that the study provides for the publication and dissemination of the results obtained including personal data, personal data will be used for this purpose only if the interested party has given their express consent.

c) To which recipients will your data be communicated?

In the framework of this study, your data will not be transferred to third parties unless there is a legal obligation or it is expressly indicated in the participant’s information form.

d) What is the legal basis for processing your data?

The legal basis for processing the data is the express consent of the person concerned.

e) What security measures do we apply to the processing of your data?

The Universitat Rovira i Virgili's information systems installed on its computer network will be used to process your personal data. The information security measures established by Royal Decree 3/2010, which regulates the National Security Scheme, will be applied.

In this regard, the Universitat Rovira i Virgili has adopted a Security Policy that can be consulted in the section on "Legislation and regulations" on the University's website under "URV regulations" and "Other regulations", <http://www.urv.cat/ca/universitat/normatives/altres-normes/>

In addition, the participant information form outlines some specific safety measures that will be taken into account during the study.

f) What are the rights of the interested parties?

You have the right to access your personal data, to request the rectification of inaccurate data, to request the cancellation and deletion of your data, to object to the processing, including profiling, of your data, and to limit to at a certain date the processing and portability of your data in electronic format.

You may interrupt your participation in the study by withdrawing your consent at any time and without explanation. In this case, your data may be retained in order to guarantee the validity of the results and comply with the legal obligations applicable to the study, but it will not be possible to link them to your person.

You may exercise the rights of access, rectification, cancellation, opposition, limitation and portability by written communication addressed to the General Registry (C / Escorxador, s / n, 43003 de Tarragona) or by submitting your request to the General Registry of the University in person or online, as indicated at <https://seuelectronica.urv.cat/registre.html>.

We also inform you that you have the right to file a complaint with the Catalan Data Protection Authority through the established mechanism. You can find more information at <https://apdcat.gencat.cat/ca/inici>

Finally, we inform you that you may request information related to the protection of personal data by sending an email to our data protection delegates at the address of dpd@urv.cat.

g) How long will we keep your data?

The data retention period is five years after the end of the study. In all cases, the data will be kept until the consent of the interested party is revoked.

CONSENT

Please complete the section below. **Consent is required from both the participating student and his or her legal guardian.**

1.Today's date.

2.First and Last Name of Participating Student

3.Participating Student's Email Address *

4. I, the participating student, have received this Participant Consent Form and consent to participating in this study and the processing of my personal data.

☐

I consent

☐

I do not consent

5. First and Last Name of Participating Student's Legal Guardian

6. Legal Guardian's Email Address

7. I, the legal guardian, have received this Participant Consent Form and consent to my child participating in this study and the processing of my child's personal data.

☐

I consent

☐

I do not consent

Appendix B

Telecollaboration Tasks

Seesaw: The virtual collaborative platform students utilized was Seesaw. On Seesaw, students shared and discussed their weekly telecollaboration tasks in an asynchronous manner.

Task Outcomes: The outcomes for each weekly task were based on Deardorff's (2006a) intercultural competence model.

Groups: Students worked with the same small group of students from their class for all the tasks. The groups from the Western Canadian school were comprised of 2-3 students. By contrast, the groups from the Catalan school contained approximately 4-5 students due to the larger class sizes.

Task #1: Introductions
General Outcomes: Students will get to know one another. Intercultural Competence Outcomes: Students will be encouraged to (1) be open to intercultural learning and curious about their telecollaboration partner students (<i>attitudes</i>), (2) demonstrate listening and interpretation skills when watching other's videos (<i>skills</i>), and (3) display adaptability and flexibility in determining how to respond to the introduction posts appropriately (<i>internal outcomes</i>).
Task: In small groups (within their classes), students create a short video using Seesaw screen recorder or their phones to introduce themselves. They state their names, where they are from (they may not originally be from the region where they currently live), at least one interesting fact about themselves, and, if they wish, the duration of time they have been studying their target language. In their videos, students speak in their target languages (i.e., in English for the students in Catalonia and in Spanish for the Western Canadian students). Students then upload their videos to Seesaw. Thereafter, students watch their partner class's videos. Then, in their groups, students write a comment in their target language on at least one group's video introduction from the partner class. Their comment can be written or in the form of a voice recording.

Task #2: My Culture

General Outcomes: Students will learn about one another's cultures.

Intercultural Competence Outcomes: Students will be encouraged to (1) demonstrate respect, openness, and curiosity towards learning about the other country/culture (*attitudes*), (2) exhibit listening, interpretation, analytical, and evaluation skills when viewing students' presentations (*skills*), (3) learn culture-specific information about the other country/culture and develop greater cultural self-awareness in producing their own presentations (*knowledge*), and (4) exercise flexibility and adaptability in the communication styles they use with students in their partner class (*internal outcomes*).

Task: In groups of four to five (within their classes), students create short presentations on different aspects of their culture. Prior to commencing the task, as a class, students come up with specific topics they want to address, and then groups sign up for the topics (to avoid redundancy). Example topics include basic information about the country, key information about the region (Alberta or Catalonia), food, sports, special celebrations, music, art, and history. Students create the presentations in their target language and do so using a presentation software of their choice (e.g., PowerPoint, Google Slides, Canva, etc.). The presentations need not include an audio component; they can simply be presentations to read. Students then upload their presentations on Seesaw and watch their partner class's videos. In their groups, students comment on at least one presentation from the partner class in their target language (the comment could be written or in the form of a voice recording). In their comments, students may identify elements of the presentation they found particularly interesting or surprising and/or ask a follow-up question.

Task #3: Important Places

General Outcomes: Culture is often influenced by geographical locations and reflected in important sites (e.g., historical, traditional, touristic, etc.). Students, therefore, will learn about significant places in one another's countries.

Intercultural Competence Outcomes: Students will be encouraged to (1) demonstrate respect (valuing one another's cultures), openness (to learning and withholding judgment), and curiosity and discovery (learning about new places) (*attitudes*); (2) demonstrate listening skills, observation skills (observing what the others show in their presentation), and relating skills (identifying similarities in the places shown with places in the home country) (*skills*); (3) develop greater cultural self-awareness (reflecting on places that are important to one's own country/culture) and understanding and knowing about places important to the partner class's country/culture (*knowledge*); and (4) select and use appropriate written communication for their target audience (*internal outcomes*).

Task: In their usual groups (within their respective classes), students choose one significant place in their region or country. Students must "sign up" for places so each presentation is unique. Students will then prepare a short presentation about their chosen place in their target language and identify why it is important to their country/culture (e.g., it could be a historical site, a capital city, a popular tourist destination, etc.). Students then upload their presentations to Seesaw and watch the presentations from the other class. Each group must then comment on another group's project from the partner class in their target language. In their comments, students may identify elements of the presentation they found particularly interesting or surprising and/or ask a follow-up question.

Task #4: Discovering Cultural Similarities and Differences

General Outcomes: Students will understand similarities and differences between one another's cultures. Students will find common ground and learn from cultural differences.

Intercultural Competence Outcomes: Students will be encouraged to (1) demonstrate respect (valuing one another's cultures), openness (to learning and withholding judgment), and curiosity about learning about the other country/culture (*attitudes*), (2) display listening skills (listening to one another's ideas when working together), interpreting skills (strive to understand what one another is saying), evaluation skills (evaluating similarities & differences), and relational skills (finding common ground in one another's cultures) (*skills*), (3) learn culture-specific information about the other country/culture and develop greater cultural self-awareness (*knowledge*), and (4) demonstrate empathy and an ethnorelative view (*internal outcomes*).

Task: Students are encouraged to imagine that students from their partner school are moving to their city and that they are tasked with sharing important information about what life is like in their city (e.g., school routines, mealtimes, typical leisure activities, popular sayings, milestones (when they can obtain their driver's license, move out from home), popular fashion, typical ways of greeting people and saying goodbye, etc.). Students must select at least two pieces of information to share with them via a video. Additionally, students must also think of at least two questions they have for their partner class about their culture/daily life and ask these in their video. After recording their video on Seesaw video recorder or their phones, they must upload them to Seesaw. Thereafter, they must watch the videos of the partner class and answer their questions via written or audio comments.

Appendix C

Pre-Questionnaire

The weightings of the pre-questionnaire are included below but were not visible on the student-issued copies. The pre-questionnaire was translated to Catalan for the students from Catalonia.

Questionnaires were administered via Microsoft Forms.

Pre-Telecollaboration Questionnaire⁵ (Administered to Students from Western Canada)

Part A: Intercultural Competence Assessment- /100

***Attitudes-* /25**

Instructions: *Read each statement carefully and select a corresponding response depending on if you strongly agree, agree, feel neutral about it, disagree, or strongly disagree.*

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I am curious about other cultures.	1	2	3	4	5
I greatly value cultural diversity (the existence of multiple cultural groups in a society).	1	2	3	4	5
I enjoy communicating with people from other cultures.	1	2	3	4	5
I am open-minded to the different views, customs, and traditions of other cultures.	1	2	3	4	5
I often try to learn more about other cultures through researching them online or going to different cultural events.	1	2	3	4	5

⁵ Some Likert scale statements in this questionnaire are adapted from the TILA (n.d.) questionnaire titled, "Assessing Intercultural Communicative Competence (ICC)." https://anglotic.blogs.uv.es/files/2017/11/ICC_Assessment_Questionnaire_EN.pdf

Knowledge- /25

Instructions: Read each statement carefully and select a corresponding response depending on if you strongly agree, agree, feel neutral about it, disagree, or strongly disagree.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I consider myself culturally self-aware—that is, I know a lot about my own culture.	1	2	3	4	5
My culture helps me understand the world around me.	1	2	3	4	5
I am sensitive to the similarities and differences between other people’s cultures and my own culture.	1	2	3	4	5
I know a lot of information about other cultures.	1	2	3	4	5
I am aware of differences in the way people speak languages in different cultures. For example, some cultures are more direct than others.	1	2	3	4	5

Skills- /25

Instructions: Read each statement carefully and select a corresponding response depending on if you strongly agree, agree, feel neutral about it, disagree, or strongly disagree. There are some questions that may not apply to you if you have not, for example, travelled outside of your country. If this is the case, you may select, “does not apply.”

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Does Not Apply
When interacting with people from other cultures, I carefully <i>listen</i> to what they say.	1	2	3	4	5	
When travelling in another country or around people of other cultures, I <i>observe</i> a lot to try to understand their culture.	1	2	3	4	5	
I sometimes change the way I communicate when talking with speakers of other languages (e.g., speaking slower, describing things in greater detail, simplifying vocabulary).	1	2	3	4	5	
If I have a misunderstanding with a person of another culture, I try to <i>carefully think about</i> and <i>reflect on</i> why this may have happened instead of just getting frustrated.	1	2	3	4	5	
When interacting with people from other cultures, I try to <i>relate</i> to them (e.g., find things in common between us).	1	2	3	4	5	

Internal Outcomes- /25

Instructions: Read each statement carefully and select a corresponding response depending on if you strongly agree, agree, feel neutral about it, disagree, or strongly disagree. There are some questions that may not apply to you if you have not, for example, travelled outside of your country. If this is the case, you may select, “does not apply.”

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Does Not Apply
When interacting with people of other cultures, I try to see things from their perspective. That is, I try to put myself in their shoes.	1	2	3	4	5	
When interacting with people of other cultures, I treat them respectfully.	1	2	3	4	5	
When talking with people that speak another language, I always try to communicate in a clear way and ask questions to make sure I understand everything well.	1	2	3	4	5	
I feel comfortable when I am surrounded by another culture (e.g., when traveling in another country).	1	2	3	4	5	
It feels normal to me to communicate with people of different cultures.	1	2	3	4	5	

Part B: Intercultural Competence- Communicating with Spanish Students**Attitudes:**

1. How do you feel about the idea of interacting with Spanish students in this project?

Check all that apply.

- | | |
|---|--|
| ☐ Interested (1 point) | ☐ Nervous (0 points) |
| ☐ Curious (1 point) | ☐ Stressed (0 points) |
| ☐ Excited (1 point) | ☐ Uninterested (0 points) |
| ☐ Open to learning from them (1 point) | ☐ Closed off to learning from them (0 points) |

2. What would you like to learn about with respect to Spanish culture? Check all that apply.

- | | |
|--|--|
| ☐ Spanish holidays and celebrations (1 point) | ☐ Ways to greet people (1 point) |
| ☐ Traditional foods (1 point) | ☐ Leisure/free time activities (1 point) |
| ☐ Popular music (1 point) | ☐ Family customs (1 point) |
| ☐ Popular movies (1 point) | ☐ Laws and norms (1 point) |
| ☐ Common sports played (1 point) | ☐ Economic system (1 point) |
| ☐ Clothing styles/fashion (1 point) | ☐ History (1 point) |
| ☐ Languages spoken (1 point) | ☐ Catalan culture (1 point) |
| ☐ Common beliefs and values (1 point) | ☐ I am not interested in learning anything about Spanish culture (0 points) |

Knowledge:

3. How would you describe your knowledge about Spanish culture?

- ☐ I know **a lot** about Spanish culture (2 points)
- ☐ I know **some** things about Spanish culture (1 point)
- ☐ I **don't know much** about Spanish culture (0.5 points)
- ☐ I **don't know anything** about Spanish culture (0 points)

4. How would you describe your knowledge about similarities and differences between your culture and Spanish culture?

- ☐ I can identify **many** things that are similar and **many** things that are different between our two cultures. (2 points)
- ☐ I can identify **some** things that are similar and **some** things that are different between our two cultures. (1 point)
- ☐ I **cannot** identify things that are similar and things that are different between our two cultures. (0 points)

Skills:

5. What are some skills you think are important to use when interacting with the students from Spain?

- ☐ Listening (listening to presentations/videos) (1 point)
- ☐ Observing (watching presentations carefully) (1 point)
- ☐ Analyzing (thinking about what they say) (1 point)
- ☐ Evaluating (forming ideas about their culture) (1 point)
- ☐ Relating (finding things in common) (1 point)
- ☐ Being patient (not getting easily frustrated) (1 point)
- ☐ Trying to see things from their perspective (1 point)
- ☐ Communicating clearly in their language (1 point)
- ☐ Using strategies to help with clear communication (1 point)
- ☐ I am not sure (0 points)
- ☐ No special skills are needed (0 points)

Pre-Telecollaboration Questionnaire⁶
(Administered to Students from Catalonia)

Part A: Intercultural Competence Assessment- /100

Actituds- /25

Instruccions: *llegiu atentament cada afirmació i seleccioneu la resposta corresponent en funció de si hi esteu molt d'acord, d'acord, us sentiu neutral, en desacord o molt en desacord.*

	Molt en desacord	En desacord	Neutre	D'acord	Totalment d'acord
Tinc curiositat per altres cultures.	1	2	3	4	5
Valoro molt la diversitat cultural (l'existència de múltiples grups culturals en una societat).	1	2	3	4	5
M'agrada comunicar-me amb gent d'altres cultures.	1	2	3	4	5
Tinc una ment oberta a les diferents visions, costums i tradicions d'altres cultures.	1	2	3	4	5
Sovint intento aprendre més sobre altres cultures investigant-les en línia o assistint a diferents esdeveniments culturals.	1	2	3	4	5

Coneixement- /25

Instruccions: *llegiu atentament cada afirmació i seleccioneu la resposta corresponent en funció de si hi esteu molt d'acord, d'acord, us sentiu neutral, en desacord o molt en desacord.*

	Molt en desacord	En desacord	Neutre	D'acord	Totalmen t d'acord
Em considero culturalment conscient de mi mateix, és a dir, sé molt sobre la meua pròpia cultura.	1	2	3	4	5
La meua cultura m'ajuda a entendre el món que m'envolta.	1	2	3	4	5
Sóc sensible a les semblances i diferències entre les cultures d'altres persones i la meua pròpia.	1	2	3	4	5
Conec molta informació sobre altres cultures.	1	2	3	4	5

⁶ Some Likert scale statements in this questionnaire are adapted from the TILA questionnaire titled, "Assessing Intercultural Communicative Competence (ICC)."

https://anglotic.blogs.uv.es/files/2017/11/ICC_Assessment_Questionnaire_EN.pdf

Sóc conscient de les diferències en la manera que la gent parla llengües en diferents cultures. Per exemple, algunes cultures són més directes que altres.	1	2	3	4	5
--	---	---	---	---	---

Habilitats- /25

Instruccions: llegiu atentament cada afirmació i seleccioneu la resposta corresponent en funció de si hi esteu molt d'acord, d'acord, us sentiu neutral, en desacord o molt en desacord. Hi ha algunes preguntes que potser no podeu respondre, per exemple, si no heu viatjat fora del vostre país. Si aquest és el cas, seleccioneu "no aplicable".

	Molt en desacord	En desacord	Neutre	D'acord	Totalmen t d'acord	No aplicable
Quan interactuo amb persones d'altres cultures, escolto atentament el que diuen.	1	2	3	4	5	
Quan viatjo a un altre país o em trobo al voltant de persones d'altres cultures, les observo molt per intentar entendre la seva cultura.	1	2	3	4	5	
De vegades, canvio la manera de comunicar-me quan parlo amb parlants d'altres llengües (p. ex., parlar més lentament, descriure coses amb més detall o simplificar el vocabulari).	1	2	3	4	5	
Si tinc un malentès amb una persona d'una altra cultura, intento pensar amb cura i reflexionar sobre que pot haver passat en lloc de frustrar-me.	1	2	3	4	5	
Quan interactuo amb persones d'altres cultures, intento relacionar-me amb ells (p. ex., trobar coses en comú entre nosaltres).	1	2	3	4	5	

Resultats interns- /25

Instruccions: llegiu atentament cada afirmació i seleccioneu la resposta corresponent en funció de si hi esteu molt d'acord, d'acord, us sentiu neutral, en desacord o molt en desacord. Hi ha algunes preguntes que potser no podeu respondre si, per exemple, no heu viatjat fora del vostre país. Si aquest és el cas, podeu seleccionar "no aplicable".

	Molt en desacord	En desacord	Neutre	D'acord	Totalmen t d'acord	No aplicable
Quan interactuo amb persones d'altres cultures, intento veure les coses des de la seva perspectiva. És a dir, intento posar-me a la seva pell.	1	2	3	4	5	
Quan interactuo amb gent d'altres cultures, els tracto amb respecte.	1	2	3	4	5	

Quan em comunico amb gent que parla un altre idioma, sempre intento comunicar-me de manera clara i fer preguntes per assegurar-me que ho entenc tot bé.	1	2	3	4	5	
Em sento còmode quan estic envoltat d'una altra cultura (p. ex., quan viatjo a un altre país).	1	2	3	4	5	
Em sembla normal comunicar-me amb persones de diferents cultures.	1	2	3	4	5	

Part B: Intercultural Competence- Communicating with Canadian Students

Actituds:

1. Què et sembla la idea d'interactuar amb estudiants canadencs en aquest projecte? Podeu marcar més d'una opció.

- | | |
|--|---|
| ☐ Interessat/da (1 point) | ☐ Nerviós/a (0 points) |
| ☐ Curiós/a (1 point) | ☐ Estressat (0 points) |
| ☐ Emocionat/da (1 point) | ☐ Desinteressat/da (0 points) |
| ☐ Obert/a a aprendre d'ells (1 point) | ☐ Tancat/da a aprendre d'ells (0 points) |

2. Què t'agradaria aprendre respecte a la cultura canadenca? Podeu marcar més d'una opció.

- | | |
|--|---|
| ☐ Festes i celebracions canadenques (1 point) | ☐ Activitats de lleure/temps lliure (1 point) |
| ☐ Aliments tradicionals (1 point) | ☐ Costums familiars (1 point) |
| ☐ Música popular (1 point) | ☐ Lleis i norms (1 point) |
| ☐ Pel·lícules populars (1 point) | ☐ Sistema econòmic (1 point) |
| ☐ Esports habituals practicats (1 point) | ☐ Història (1 point) |
| ☐ Estils de roba/moda (1 point) | ☐ Multiculturalitat (1 point) |
| ☐ Llengües parlades (1 point) | ☐ No m'interessa aprendre res (0 points) |
| ☐ Valors i creences comunes (1 point) | ☐ No estic segur sobre què m'agradaria aprendre (0 points) |
| ☐ Maneres de saludar a la gent (1 point) | |

Coneixement:

3. Com descriuries els teus coneixements sobre la cultura canadenca? Trieu l'opció que creieu més adient.
- ☐ Conec **molt** sobre la cultura canadenca (2 points)
 - ☐ Sé **algunes** coses sobre la cultura canadenca(1 point)
 - ☐ **No sé gaire** de la cultura canadenca (0.5 points)
 - ☐ **No sé res** de la cultura canadenca (0 points)
4. Com descriuries els teus coneixements sobre semblances i diferències entre la teva cultura i la canadenca?
- ☐ Puc identificar **moltes** coses que són semblants i **moltes** coses que són diferents entre les nostres dues cultures. (2 points)
 - ☐ Puc identificar **algunes** coses que són semblants i **algunes** coses que són diferents entre les nostres dues cultures. (1 point)
 - ☐ **No puc** identificar coses que són semblants i coses que són diferents entre les nostres dues cultures. (0 points)

Habilitats

5. Quines són algunes de les habilitats que creus que són importants quan interactues amb els estudiants del Canadà? Marqueu les opcions que considereu adients.
- ☐ Escoltar (escoltar presentacions/vídeos) (1 point)
 - ☐ Observar (veient les presentacions amb atenció) (1 point)
 - ☐ Analitzar (pensant en el què diuen) (1 point)
 - ☐ Avaluar (formar idees sobre la seva cultura)(1 point)
 - ☐ Relacionar-se (per trobar coses en comú)(1 point)
 - ☐ Ser pacient (no frustrar-se fàcilment) (1 point)
 - ☐ Intentar veure les coses des de la seva perspectiva (1 point)
 - ☐ Comunicar-se clarament en la seva llengua (1 point)
 - ☐ Utilitzar estratègies que ajuden a la comunicació (1 point)
 - ☐ No estic segur (0 points)
 - ☐ No es necessiten habilitats especials (0 points)

Appendix D

Post-Questionnaires

The weightings of the post-questionnaire are included below but were not visible on the student-issued copies. The post-questionnaire was translated to Catalan for the students from Catalonia.

Questionnaires were administered via Microsoft Forms.

Post-Telecollaboration Questionnaire (Administered to Students from Western Canada)

Part A: Intercultural Competence Assessment- /100

Attitudes- /25

Instructions: *Read each statement carefully and select a corresponding response depending on if you strongly agree, agree, feel neutral about it, disagree, or strongly disagree.*

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I am curious about other cultures.	1	2	3	4	5
I greatly value cultural diversity (the existence of multiple cultural groups in a society).	1	2	3	4	5
I enjoy communicating with people from other cultures.	1	2	3	4	5
I am open-minded to the different views, customs, and traditions of other cultures.	1	2	3	4	5
I often try to learn more about other cultures through researching them online or going to different cultural events.	1	2	3	4	5

Knowledge- /25

Instructions: *Read each statement carefully and select a corresponding response depending on if you strongly agree, agree, feel neutral about it, disagree, or strongly disagree.*

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I consider myself culturally self-aware—that is, I know a lot about my own culture.	1	2	3	4	5
My culture helps me understand the world around me.	1	2	3	4	5

I am sensitive to the similarities and differences between other people's cultures and my own culture.	1	2	3	4	5
I know a lot of information about other cultures.	1	2	3	4	5
I am aware of differences in the way people speak languages in different cultures. For example, some cultures are more direct than others.	1	2	3	4	5

Skills- /25

Instructions: *Read each statement carefully and select a corresponding response depending on if you strongly agree, agree, feel neutral about it, disagree, or strongly disagree. There are some questions that may not apply to you if you have not, for example, travelled outside of your country. If this is the case, you may select, "does not apply."*

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Does Not Apply
When interacting with people from other cultures, I carefully <i>listen</i> to what they say.	1	2	3	4	5	
When travelling in another country or around people of other cultures, I <i>observe</i> a lot to try to understand their culture.	1	2	3	4	5	
I sometimes change the way I communicate when talking with speakers of other languages (e.g., speaking slower, describing things in greater detail, simplifying vocabulary).	1	2	3	4	5	
If I have a misunderstanding with a person of another culture, I try to <i>carefully think about</i> and <i>reflect on</i> why this may have happened instead of just getting frustrated.	1	2	3	4	5	
When interacting with people from other cultures, I try to <i>relate</i> to them (e.g., find things in common between us).	1	2	3	4	5	

Internal Outcomes- /25

Instructions: *Read each statement carefully and select a corresponding response depending on if you strongly agree, agree, feel neutral about it, disagree, or strongly disagree. There are some questions that may not apply to you if you have not, for example, travelled outside of your country. If this is the case, you may select, "does not apply."*

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Does Not Apply
When interacting with people of other cultures, I try to see things from their perspective. That is, I try to put myself in their shoes.	1	2	3	4	5	
When interacting with people of other cultures, I treat them respectfully.	1	2	3	4	5	

When talking with people that speak another language, I always try to communicate in a clear way and ask questions to make sure I understand everything well.	1	2	3	4	5	
I feel comfortable when I am surrounded by another culture (e.g., when traveling in another country).	1	2	3	4	5	
It feels normal to me to communicate with people of different cultures.	1	2	3	4	5	

Part B: Intercultural Competence- Communicating with Spanish/Catalan Students

Attitudes:

1. Which of the following best describes how you felt communicating with the Tarragona students? Check all that apply.

- | | |
|---|--|
| ☐ Interested (1 point) | ☐ Nervous (0 points) |
| ☐ Curious (1 point) | ☐ Stressed (0 points) |
| ☐ Excited (1 point) | ☐ Uninterested (0 points) |
| ☐ Open to learning from them (1 point) | ☐ Closed off to learning from them (0 points) |

2. After completing the telecollaboration, what aspects of Spanish/Catalan culture would you like to still learn more about? Check all that apply.

- | | |
|--|--|
| ☐ Spanish/Catalan holidays and celebrations (1 point) | ☐ Leisure/Free Time Activities (1 point) |
| ☐ Traditional foods (1 point) | ☐ Family customs (1 point) |
| ☐ Popular music (1 point) | ☐ Laws and norms (1 point) |
| ☐ Popular movies (1 point) | ☐ Economic system (1 point) |
| ☐ Common sports played (1 point) | ☐ History (1 point) |
| ☐ Clothing styles/fashion (1 point) | ☐ Catalan culture (1 point) |
| ☐ Languages spoken (1 point) | ☐ I am not interested in learning anything about Spanish culture (0 points) |
| ☐ Common beliefs and values (1 point) | ☐ I am not sure what I would like to learn (0 points) |
| ☐ Ways to greet people (1 point) | |

Knowledge:

3. After having completed the telecollaboration, how would you describe your knowledge about Spanish/Catalan culture?

- ☐ I know **a lot** about Spanish/Catalan culture (2 points)
☐ I know **some** things about Spanish/Catalan culture (1 point)
☐ I **don't know much** about Spanish/Catalan culture (0.5 points)
☐ I **don't know anything** about Spanish/Catalan culture (0 points)

4. After having completed the telecollaboration, how would you describe your knowledge about similarities and differences between your culture and Spanish/Catalan culture?
- ☐ I can identify **many** things that are similar and **many** things that are different between our two cultures. (2 points)
 - ☐ I can identify **some** things that are similar and **some** things that are different between our two cultures. (1 point)
 - ☐ I **cannot** identify things that are similar and things that are different between our two cultures. (0 points)

Skills

5. What are some skills you used when interacting with the students from Tarragona? Check all that apply.
- ☐ Listening (listening to presentations/videos) (1 point)
 - ☐ Observing (watching presentations carefully) (1 point)
 - ☐ Analyzing (thinking about what they say) (1 point)
 - ☐ Evaluating (forming ideas about their culture) (1 point)
 - ☐ Relating (finding things in common) (1 point)
 - ☐ Being patient (not getting easily frustrated) (1 point)
 - ☐ Trying to see things from their perspective (1 point)
 - ☐ Communicating clearly in their language (1 point)
 - ☐ Using strategies to help with clear communication (1 point)
 - ☐ I am not sure (0 points)
 - ☐ No special skills are needed (0 points)

Part C: Reflection on the Telecollaboration

Instructions: Read each statement carefully and select a response. 5 represents strongly agree and 1 represents strongly disagree.

Benefits to Learning:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. This project was useful in learning about another culture (Spanish/Catalan culture).	1	2	3	4	5
2. This project was beneficial in helping me know how to interact with people of another culture.	1	2	3	4	5
3. This project was helpful in opening my mind to learning from people of another culture.	1	2	3	4	5
4. This project was helpful in improving my English language skills.	1	2	3	4	5
5. This project was helpful in making me more aware of my own culture.	1	2	3	4	5
6. Overall, I felt I learned a lot through this project.	1	2	3	4	5

Engagement:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I was eager to participate in this project when I learned about it.	1	2	3	4	5
2. I found the activities in the project interesting and enjoyed doing them.	1	2	3	4	5
3. I found this project more interesting than my usual class projects and assignments.	1	2	3	4	5
4. I participated a lot in the project.	1	2	3	4	5
5. I always put my best effort into the project.	1	2	3	4	5
6. Overall, I really enjoyed this project.	1	2	3	4	5

Recommendations:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I would recommend this project to other students studying Spanish.	1	2	3	4	5
2. I think projects like this are valuable for all students studying a foreign language.	1	2	3	4	5
3. I would recommend that my teacher do a project like this again in my class sometime.	1	2	3	4	5

1. How did you find the length of the telecollaboration?
 - a. It was the perfect length.
 - b. It was too short.
 - c. It was too long.
2. Do you have any suggestions on how to improve the telecollaboration for the future?

Post-Telecollaboration Questionnaire
(Administered to Students from Catalonia)

Part A: Intercultural Competence Assessment- /100

Actituds- /25

Instruccions: *llegiu atentament cada afirmació i seleccioneu la resposta corresponent en funció de si hi esteu molt d'acord, d'acord, us sentiu neutral, en desacord o molt en desacord.*

	Molt en desacord	En desacord	Neutre	D'acord	Totalment d'acord
Tinc curiositat per altres cultures.	1	2	3	4	5
Valoro molt la diversitat cultural (l'existència de múltiples grups culturals en una societat).	1	2	3	4	5
M'agrada comunicar-me amb gent d'altres cultures.	1	2	3	4	5
Tinc una ment oberta a les diferents visions, costums i tradicions d'altres cultures.	1	2	3	4	5
Sovint intento aprendre més sobre altres cultures investigant-les en línia o assistint a diferents esdeveniments culturals.	1	2	3	4	5

Coneixement- /25

Instruccions: *llegiu atentament cada afirmació i seleccioneu la resposta corresponent en funció de si hi esteu molt d'acord, d'acord, us sentiu neutral, en desacord o molt en desacord.*

	Molt en desacord	En desacord	Neutre	D'acord	Totalmen t d'acord
Em considero culturalment conscient de mi mateix, és a dir, sé molt sobre la meua pròpia cultura.	1	2	3	4	5
La meua cultura m'ajuda a entendre el món que m'envolta.	1	2	3	4	5
Sóc sensible a les semblances i diferències entre les cultures d'altres persones i la meua pròpia.	1	2	3	4	5
Conec molta informació sobre altres cultures.	1	2	3	4	5
Sóc conscient de les diferències en la manera que la gent parla llengües en diferents	1	2	3	4	5

cultures. Per exemple, algunes cultures són més directes que altres.					
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Habilitats- /25

Instruccions: llegiu atentament cada afirmació i seleccioneu la resposta corresponent en funció de si hi esteu molt d'acord, d'acord, us sentiu neutral, en desacord o molt en desacord. Hi ha algunes preguntes que potser no podeu respondre, per exemple, si no heu viatjat fora del vostre país. Si aquest és el cas, seleccioneu "no aplicable".

	Molt en desacord	En desacord	Neutre	D'acord	Totalmen t d'acord	No aplicable
Quan interactuo amb persones d'altres cultures, escolto atentament el que diuen.	1	2	3	4	5	
Quan viatjo a un altre país o em trobo al voltant de persones d'altres cultures, les observo molt per intentar entendre la seva cultura.	1	2	3	4	5	
De vegades, canvio la manera de comunicar-me quan parlo amb parlants d'altres llengües (p. ex., parlar més lentament, descriure coses amb més detall o simplificar el vocabulari).	1	2	3	4	5	
Si tinc un malentès amb una persona d'una altra cultura, intento pensar amb cura i reflexionar sobre que pot haver passat en lloc de frustrar-me.	1	2	3	4	5	
Quan interactuo amb persones d'altres cultures, intento relacionar-me amb ells (p. ex., trobar coses en comú entre nosaltres).	1	2	3	4	5	

Resultats interns- /25

Instruccions: llegiu atentament cada afirmació i seleccioneu la resposta corresponent en funció de si hi esteu molt d'acord, d'acord, us sentiu neutral, en desacord o molt en desacord. Hi ha algunes preguntes que potser no podeu respondre si, per exemple, no heu viatjat fora del vostre país. Si aquest és el cas, podeu seleccionar "no aplicable".

	Molt en desacord	En desacord	Neutre	D'acord	Totalmen t d'acord	No aplicable
Quan interactuo amb persones d'altres cultures, intento veure les coses des de la seva perspectiva. És a dir, intento posar-me a la seva pell.	1	2	3	4	5	
Quan interactuo amb gent d'altres cultures, els tracto amb respecte.	1	2	3	4	5	
Quan em comunico amb gent que parla un altre idioma, sempre intento comunicar-me de	1	2	3	4	5	

manera clara i fer preguntes per assegurar-me que ho entenc tot bé.						
Em sento còmode quan estic envoltat d'una altra cultura (p. ex., quan viatjo a un altre país).	1	2	3	4	5	
Em sembla normal comunicar-me amb persones de diferents cultures.	1	2	3	4	5	

Part B: Intercultural Competence- Communicating with Canadian Students

Actituds:

1. Quina va ser la teva actitud davant la comunicació amb els estudiants canadencs? Podeu marcar més d'una opció

- | | |
|--|---|
| ☐ Interessat/da (1 point) | ☐ Nerviós/a (0 points) |
| ☐ Curiós/a (1 point) | ☐ Estressat (0 points) |
| ☐ Emocionat/da (1 point) | ☐ Desinteressat/da (0 points) |
| ☐ Obert/a a aprendre d'ells (1 point) | ☐ Tancat/da a aprendre d'ells (0 points) |

2. Després de completar la telecol·laboració, quins aspectes de la cultura canadenca t'agradaria conèixer amb més profunditat? Marqueu totes les opcions que creieu.

- | | |
|--|---|
| ☐ Festes i celebracions canadenques (1 point) | ☐ Activitats de lleure/temps lliure (1 point) |
| ☐ Aliments tradicionals (1 point) | ☐ Costums familiars (1 point) |
| ☐ Música popular (1 point) | ☐ Lleis i norms (1 point) |
| ☐ Pel·lícules populars (1 point) | ☐ Sistema econòmic (1 point) |
| ☐ Esports habituals practicats (1 point) | ☐ Història (1 point) |
| ☐ Estils de roba/moda (1 point) | ☐ Multiculturalitat (1 point) |
| ☐ Llengües parlades (1 point) | ☐ No m'interessa aprendre res (0 points) |
| ☐ Valors i creences comunes (1 point) | ☐ No estic segur sobre què m'agradaria aprendre (0 points) |
| ☐ Maneres de saludar a la gent (1 point) | |

Coneixement:

3. Després d'haver completat la telecol·laboració, com descriuries els teus coneixements sobre Canadà?

- ☐ Conec **molt** sobre la cultura canadenca (2 points)
- ☐ Sé **algunes** coses sobre la cultura canadenca(1 point)
- ☐ **No sé gaire** de la cultura canadenca (0.5 points)
- ☐ **No sé res** de la cultura canadenca (0 points)

4. Després d'haver completat la telecol·laboració, com descriuries els teus coneixements sobre semblances i diferències entre la teva cultura i la canadenca?

- ☐ Puc identificar **moltes** coses que són semblants i **moltes** coses que són diferents entre les nostres dues cultures. (2 points)
- ☐ Puc identificar **algunes** coses que són semblants i **algunes** coses que són diferents entre les nostres dues cultures. (1 point)
- ☐ **No puc** identificar coses que són semblants i coses que són diferents entre les nostres dues cultures. (0 points)

Habilitats

5. Quines són algunes de les habilitats que heu utilitzat en interactuar amb els estudiants del Canadà? Podeu marcar més d'una opció.

- ☐ Escoltar (escoltar presentacions/vídeos) (1 point)
- ☐ Observar (veient les presentacions amb atenció) (1 point)
- ☐ Analitzar (pensant en el què diuen) (1 point)
- ☐ Avaluar (formar idees sobre la seva cultura)(1 point)
- ☐ Relacionar-se (per trobar coses en comú)(1 point)
- ☐ Ser pacient (no frustrar-se fàcilment) (1 point)
- ☐ Intentar veure les coses des de la seva perspectiva (1 point)
- ☐ Comunicar-se clarament en la seva llengua (1 point)
- ☐ Utilitzar estratègies que ajuden a la comunicació (1 point)
- ☐ No estic segur (0 points)
- ☐ No es necessiten habilitats especials (0 points)

Part C: Reflection on the Telecollaboration

Beneficis de l'aprenentatge:

Instruccions: llegiu atentament cada afirmació i seleccioneu l'opció corresponent en funció de si hi esteu molt d'acord, d'acord, us sentiu neutral, en desacord o molt en desacord.

	Molt en desacord	En desacord	Neutre	D'acord	Totalment d'acord
1. Aquest projecte ha sigut útil per conèixer una altra cultura (cultura canadenca).	1	2	3	4	5
2. Aquest projecte ha sigut beneficiós per ajudar-me a saber com interactuar amb persones d'una altra cultura.	1	2	3	4	5
3. Aquest projecte ha sigut útil per obrir la meva ment a l'aprenentatge i coneixença de persones d'una altra cultura.	1	2	3	4	5
4. Aquest projecte ha sigut útil per millorar les meves habilitats en Anglès.	1	2	3	4	5
5. Aquest projecte m'ha ajudat a ser més conscient de la meva cultura.	1	2	3	4	5
6. En general, sento que he après molt amb aquest projecte.	1	2	3	4	5

Compromís:

Instruccions: llegiu atentament cada afirmació i seleccioneu l'opció corresponent en funció de si hi esteu molt d'acord, d'acord, us sentiu neutral, en desacord o molt en desacord.

	Molt en desacord	En desacord	Neutre	D'acord	Totalment d'acord
1. Tenia moltes ganes de participar en aquest projecte quan el vaig conèixer.	1	2	3	4	5
2. He trobat interessants les activitats del projecte i he gaudit fent-les.	1	2	3	4	5
3. He trobat aquest projecte més interessant que els treballs de classe habituals.	1	2	3	4	5
4. He participat molt en el projecte.	1	2	3	4	5
5. He participat en el projecte amb moltes ganes i esforç.	1	2	3	4	5
6. En general, m'ha agradat molt aquest projecte.	1	2	3	4	5

Recomanacions:

Instruccions: llegiu atentament cada afirmació i seleccioneu l'opció corresponent en funció de si hi esteu molt d'acord, d'acord, us sentiu neutral, en desacord o molt en desacord.

	Molt en desacord	En desacord	Neutre	D'acord	Totalment d'acord
1. Recomanaria aquest projecte a altres estudiants que estudien Anglès.	1	2	3	4	5
2. Crec que projectes com aquest són importants i recomenables per tots els estudiants que estudien una llengua estrangera.	1	2	3	4	5
3. M'agradaria participar en un projecte semblant en un futur.	1	2	3	4	5

1. Com has trobar la durada de la telecol·laboració?
 - a. Ha tingut una duració perfecta.
 - b. Ha sigut massa curta.
 - c. Ha sigut massa llarga.
2. Tens algun suggeriment sobre com millorar la telecol·laboració de cara al futur?