DEVELOPING LANGUAGE, CONTENT, AND DIGITAL COMPETENCE THROUGH INTERNATIONAL TELECOLLABORATIVE PROJECT WORK

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Abstract

Telecollaboration seems to be a present emerging practice in education. In this sense, telecollaboration is wide and covers several areas of work and study, and it can also concern hybrid ones. This research focuses on developing learners' digital competence, English language skills for professional purposes, and knowledge on recycling matters through a telecollaborative project work. The framework for this study is based on Spiers and Bartlett's (2012) model on developing language, content, and digital skills, and it also focuses on the taxonomy of communication acts in professional contexts introduced by Lehman and DuFrene (2013). Students had to work collaboratively in groups of four students, from two different institutions and countries, and create a blog on the topic of recycling matters, analyzing the current problems and offering possible solutions. Students were tested before and after the project in order to measure their progress within the different areas of study. Results showed that this telecollaborative project work was potentially beneficial; the experimental group performed better in all the areas tested after this project. In conclusion, it seems that telecollaboration projects helped develop the target skills in this research following an integrated learning approach.

Keywords: Language; Content; Digital Literacy; Telecollaboration; Project Work

1. Introduction

Virtual exchanges are learning opportunities that have appeared after breakthrough technological advances in the field of communication. This practice consists in promoting educational programs in which technology allows students and instructors, who are geographically distant, have virtual face-to-face encounters and exchanges to work on lessons and activities. This implies that the number of opportunities to work with people from other

countries has also increased considerably. Virtual exchanges also concern present global needs, and they promote professional skills such as digital competence, foreign language competence, or communication skills to work in different cultural contexts (Ferrari, 2012; Helm, 2015; Van Laar et al., 2017). In the field of languages, virtual exchange is a synonym of telecollaboration (Guth, Helm & O'Dowd, 2014), so it makes sense to use this term along this research. Virtual exchange is a broader term, and it is a hypernym of telecollaboration. Thus, telecollaboration is a suitable term in the field of foreign language learning because it focuses on the development of foreign language competence, intercultural communicative competence and digital competence (O'Dowd, 2018).

The benefits of telecollaboration in the field of foreign language learning have been reported in previous research. Bueno-Alastuey and Kleban (2016) compiled some of them in their research. The first advantage is that non-native speakers can speak with native ones, or with speakers whose first language is different, or who have a target language in common (O'Rourke, 2005; Bueno-Alastuey, 2010, 2013). These projects also promote meaning negotiation, a strategy that is conductive to second language acquisition (Ellis, 2003). In addition, telecollaboration can also help enhance acquisition of lexicon, grammar, and pronunciation features (Bueno-Alastuey, 2011; Guth & Marini-Maio, 2010). Similarly, Wylie (2010) found that students improved their writing skills in a telecollaborative project work based on email exchanges. As regards oral skills, it seems that virtual language exchanges help improve pronunciation (Bueno-Alastuey, 2010), speaking fluency (Tian & Wang, 2010), and raise confidence in using L2 (Polisca, 2011). Among other benefits, Jauregi and Bañados (2008) also found that telecollaboration can increase learners' motivation, whereas Cunningham and Vyatkina (2012) suggested that it can also help learners enhance their digital competence. Considering these previous results, it seems that this type of projects can be potentially beneficial for students' L2 acquisition.

This research focuses on the development of digital competence, enhancing English language skills for professional purposes, and gaining knowledge on recycling matters altogether through collaborative project work. The aim of this project was that students collaboratively created a blog on the topic of recycling. The participants in our experiment were engineering students from Universitat Politècnica de València (UPV) and Häme University of Applied Sciences (HAMK). The framework for this study is based on Spiers and Bartlett's (2012) model on developing language, content and digital skills. These researchers suggested that the development of learners' digital literacy does not only concern the users' knowledge and application of technology for specific purposes, but the students should also be able to

express themselves and communicate the actions conducted through the use of these tools. In this project, the target language is English for professional purposes, the content to be developed concerns the topic of recycling issues, and the digital tools are some free access ones provided by Google: Classroom, Blogger, Hangouts, Drive as well as Office tools. Through the use of these digital tools, students were expected to be able to develop some professional skills in a foreign language such as participating in meetings, negotiating, teamwork, or presenting information orally and in writing, among others. In conclusion, it was expected that through this project, students would develop the aforementioned skills collaboratively in a virtual environment, whose final aim is to create a blog on the topic of recycling.

2. Literature Review

2.1. Towards digital literacy

The evolution of technology has been brisking in the present century, and it has had noticeable effects in all areas of life. The way people work, communicate, get information, become entertained, socialize, exercise, or learn, among many others, has indisputably changed. Consequently, it seems conclusive that a great range of new technology resources have been integrated in our daily lives, and people need to know how to use them. The term 'digital literacy' implies that people need to be capable of using Information and Communication Technologies (ICT) such as computers and the Internet (Bowles, 2013; Gruszczynska, Merchant & Pountney, 2013; Summey, 2013).

To this aim, Spiers and Bartlett (2012) suggested a series of items that characterize a digitally-literate individual. Some of these characteristics are the ability to design, develop and apply digital tools for the creation of information, discovery and transfer of new knowledge, experimentation and data analysis and communication. To synthesize all these skills that are expected to be found in digitally-literate people, these authors grouped these skills into three categories: location and consumption of digital content, creation of digital content, and their communication. As can be seen in Figure 1, the triangular model of Spiers and Bartlett (2012) connects these three categories. The development of each of these skills entails working with the rest, and these are developed jointly. Thus, the digitally-literate people should not only be capable of knowing how to use a series of digital tools, but they should also be able to apply them in their field of work to develop their own content, communicate their use, actions and results correctly.

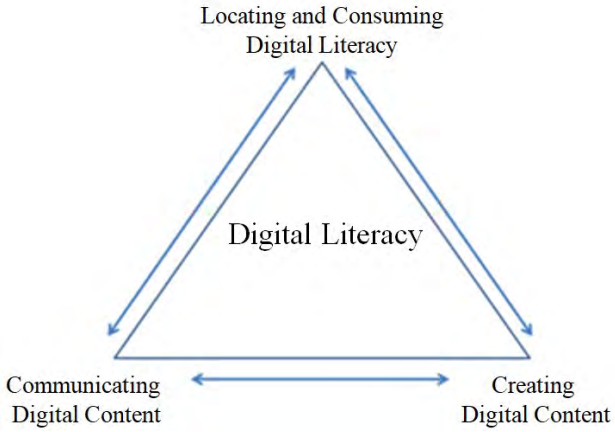

Figure 1. Development of digital literacy (Spires & Bartlett, 2012, p. 10)

2.2. Content and Language Integrated Learning and digital competence

We understand that the proposal of Spiers and Barlett (2012) is a suitable model to define the digitally-literate individual. In the same way, from the pedagogical perspective in language teaching, the same proposal can be outlined without modifying the structure proposed by these authors. The model suggested in Figure 2 focuses on Content and Language Integrated Learning in digital contexts. This proposal does not define the digital literacy, but it focuses on describing the language learning process through content in digital contexts. As a result, students will learn how to use digital tools with the aim of creating content in the digital format and using specific language forms to express themselves in each context. In other words, the aim of this proposal is to integrate different learning areas through telecollaborative work.

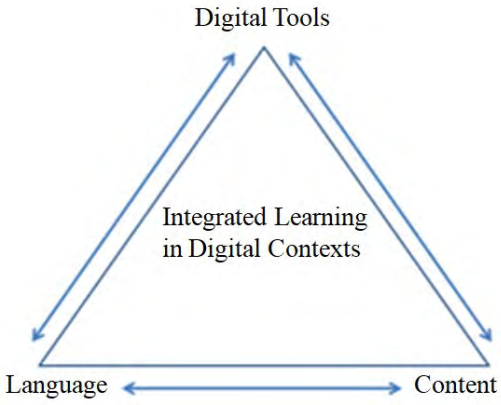

Figure 2. Integrated learning in digital contexts

The integration of content and language or the use of a vehicular language to teach content is a common practice among educators. One of these practices is known as the Content and Language Integrated Learning approach (CLIL), and it has been implemented in the classroom since Marsh (1994) first coined it. CLIL is a dual-focused educational approach which uses an additional language in the learning and teaching of content and language; these are united in the curriculum despite the fact that the emphasis is sometimes given to one or the other (Coyle, Hood & Marsh, 2010).

The roots of CLIL are set in the 1960's in Canada, where English and French were established as official languages. As a response to societal needs, immersion programs were used to help people to become competent in both languages. According to Lasagabaster and Sierra (2010) as well as Coyle (2006), those programs were successful and well-received among the population; years later, that model was adapted to the European context. Supporters of this methodology (Dalton-Puffer, 2010; Lasagabaster, 2008; Marsh, 2013, among others) suggest that learners increase their target language competence in CLIL more than in other methods without suffering significant restrictions to the contents of the non-linguistic subjects (e.g., biology, history, physical education, or maths).

Concerning language acquisition, it is necessary to refer to fluency and accuracy. Most students in CLIL are not masters of the language in their early stages; in fact, they do not achieve high levels of proficiency until the end of primary education or the beginning of the secondary level. Besides, the complexity of certain specific topics is not suitable for children due to a comprehensible lack of maturity (Eliassen, 2007). In this sense, CLIL focuses on the same contents included in the curriculum of monolingual programs, which are adapted to the age of the students. It is true, though, that students may find difficulties in communicating in a language different from their mother tongue, especially due to accuracy problems (de Zarobe, 2015). In these cases, teachers must consider and assess the information relevant to the topic being discussed. When teachers identify some complex difficulties related to the language use, they can give the necessary support like new grammar forms or vocabulary. In some schools, students receive support for content subjects through sessions related to language literacy (Lyster & Ballinger, 2011; Mehisto 2012).

Supporters of CLIL also suggest that language should not be a barrier. However, some students may feel frustrated when they suffer communication restrictions. If language support is not effective, the problem could be rooted in their motivation. Murphey and Dörnyei (2003) suggest some strategies for motivation; but, above all, teachers should motivate students with attractive resources and materials of their interest as well as show them how relevant and useful

the target language is for their daily life and future. Motivation in the 21st century is different from the one in the past; nowadays, students are considered digital natives and they are very familiar with ICT resources (Calvo-Ferrer & Belda-Medina, 2015). Thus, it is common sense that teachers should integrate technology during their classes to increase learners' motivation as this is part of their daily lives.

In this context, it could be understood that it is possible to combine language, content, and digital tools through telecollaborative project work, as it is suggested in our model of integrated learning in digital contexts based on Spires and Bartlett (2012) (see Figure 2). Therefore, content is taught through language; and language is communication (Chomsky, 1980). Lehman and DuFrene (2013) suggest that communication is a process by which information and meaning is exchanged among individuals through symbols, signs, and behaviour. In addition to this, communication includes expressing feelings, conversing, corresponding, writing, listening, and exchanging information. However, language is wide in the sense that it covers all the possible communication acts in several different contexts. From a pedagogical perspective, it is near impossible to cover all the communication acts within the same curriculum. Therefore, this project focuses on some communication acts in professional contexts. To determine the most common communication acts in professional context, this research adopts the taxonomy introduced by Lehman and DuFrene (2013, p. 2). Based on previous studies, these authors suggested that managers spend between 60% and 80% of their time involved in communication, and the most usual communication acts that they are engaged in are as shown in Table 1.

Table 1. Most usual professional communication acts (Lehman & DuFrene, 2013, p.2).

1. Attending meetings
2. Writing reports
3. Presenting information
4. Explaining and clarifying procedures to other colleagues
5. Working in group
6. Evaluating and counselling other people and their work
7. Promoting your product or service / Persuading others

2.3. Telecollaborative project work

As previously pointed out, the integration of ICT in the classroom is highly advisable since students are digital natives who are already used to it. In addition, globalization is leading to new labour environments in which communication is online. Thus, telecollaboration projects could be a useful resource to integrate language, content, and ICT. Belz (2003, p. 68) explained

that telecollaboration projects involve "the use of Internet communication tools by internationally dispersed students of language in institutionalized settings in order to promote the development of a foreign language linguistic competence and intercultural competence". Later, Sadler and Dooly (2016, p. 402) defined telecollaboration in education as "an embedded, dialogic process that supports geographically distanced collaborative work through social interaction, involving a/synchronous communication technology so that participants co-produce mutual objective(s) and share knowledge-building". From a language teaching perspective, Dooly (2017, p. 170) states that telecollaboration studies are more abundant in the fields related to language teaching and learning than in other disciplines since they are easily combined with other non-language disciplines, which connects with the principles of CLIL previously introduced in this section.

The completion of this triangle (language, content, and digital skills) requires a task or a project. In this case, the principles of project work should be considered. As explained by Thomas (2000), project work is an approach in which projects are central to the learning process. In the field of language teaching, the learning process involves a series of communicative tasks directly connected to the curricular objectives and aims (Oura, 2001). Project-based learning concerns interrelated tasks which involve learners in designing processes, problem-solving, decision making, or doing research (Korfhage-Smith, 2010). This implies that project-based learning focuses on constructivism; Dudley-Evans and St. John (1998) underline that tasks and projects promote learning in a constructivist-communicative environment in real-life situations, in which students are engaged in tasks. Besides, it promotes students' autonomy and cooperation that culminates in the creation of real products (Istanto, 2013). In addition, as suggested by O'Dowd and O'Rourke (2019, p. 1), this type of projects require that the role of the teacher in project-based learning is a facilitator "with the aim of developing learners' foreign language skills, digital literacy, and intercultural competence".

At last, some previous research within the field of telecollaboration explored different areas, objectives, and profiles, which can include the effects of technology (Helm & Guth, 2010; Lewis & O'Dowd, 2016; Dooly, 2017; Dooly & Sadler, 2013; Guth, & Thomas, 2012), challenges and difficulties of telecollaboration for language teaching (Pérez-Cañado, 2012; Dooly, 2008; Guth & Helm, 2012; Helm & Guth, 2016; O'Dowd, 2007; Tudini, 2010), the exploitation of the social dimension (Belz, 2002), the development of intercultural competence (Belz, 2003; Çiftçi & Savaş, 2018), or the development of digital literacy (Helm, 2014; Spiers & Bartlett, 2012).

In sum, this literature review illustrates different characteristics of telecollaborative foreign language learning and teaching by following the work of other previous authors. In the present scenario, telecollaborative project work seems to be more necessary than ever, and it is an advantageous approach adapted to the contemporary teaching and learning needs. The framework for this study is mainly based on the model suggested by Spiers and Bartlett (2012), which describes the main characteristics of digital individuals regarding their language, content, and digital skills. In this sense, this model has been adapted to the context of foreign language teaching and has assessed the progress of a group of students on the target skills after the completion of a project work. Thus, the main research gap that this paper attempts to address is the implementation of the model suggested by Spiers and Bartlett (2012) through telecollaborative project work, in which language focuses on the communication acts in professional contexts suggested by Lehman and DuFrene (2013), the content knowledge is recycling, and the digital tools used are some Google apps.

3. Methodology

3.1. Aims and hypothesis

The objective of this collaborative project was to help students develop their communicative competence in English for professional purposes and their thinking on the issues of recycling, recovery, and reprocessing of materials in an international professional context, as well as enhance their digital competence. Our hypothesis is that the implementation of a telecollaborative project with students from different universities and countries, whose mother tongue is different, would help them enhance their foreign language competence (English) and digital skills (Google Apps). Figure 3 shows the practical application of our model of integrated teaching in digital contexts based on the model of Spires and Bartlett (2012).

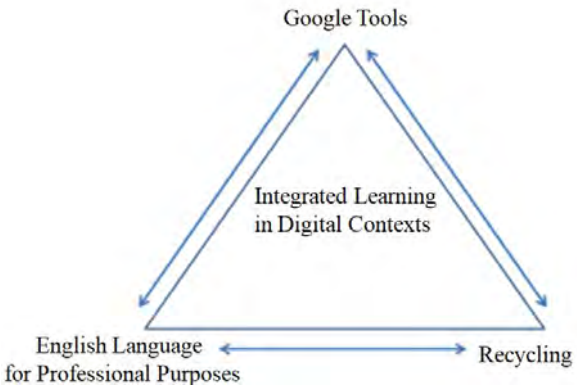

Figure 3. Proposed model for integrated learning in digital contexts

3.2. Participants and instruments

There were 69 participants who completed the project successfully; the experimental group had 35 and the control group 34. These participants were engineering students from UPV and HAMK, aged 19-24, who had been enrolled in a subject of English, B2 level. Initially, there were more participants in both groups but not all of them completed the necessary tests to measure their progress and were not considered in this research.

The instruments used in this project were some Google applications: *Classroom, Hangouts, Blogger, Drive,* and *Docs*. *Classroom* was used by the teacher to communicate with the students, post information, give instructions, and share resources for the development of the project. The students used *Hangouts* for their videoconferences and chat. In order to record their videoconferences, different software was used, although *OBS Studio* had been recommended. Next, *Blogger* was the tool used to jointly create and publish blogs. Finally, *Drive* was used as the shared space for group members and teachers, where students uploaded the material and files, such as videos, pictures, or documents (*Docs*).

3.3. Design and procedure

As previously said, our participants were enrolled in an English language subject (6 ECTS). Both the experimental and control group followed the same work plan in 4.5 ECTS, whereas the remaining 1.5 ECTS were different. While the control group attended all the regular English language practical sessions, the experimental group spent this time working in a telecollaborative project. We estimated that the approximate workload of this project was equivalent to 1.5 ECTS of the English language subject. In any case, the participants of each

group could only follow one of the two itineraries, thus guaranteeing that the studying time was the same for both groups.

The research was conducted from September to December 2019 and was divided into 4 stages. The first stage was the creation of groups, which were formed by 2 students from HAMK and 2 from UPV. In total, there were 12 groups; 10 groups had 4 members and the other 2 were formed by 3 students, 2 UPV students and 1 HAMK student. The second stage was for instruction; both the experimental and the control groups received a 2-hour content training session, which included specific language related to recycling issues. After this session, the course continued with the usual English language lessons concerning both general and specific language.

The third stage marked the beginning of the group work. The students had to collaboratively create a blog which examined the current situation of recycling issues and their potential problems and were supposed to offer solutions to them. To complete this task, our students were to post at least 4 entries in their blogs, including two written ones and two videos. Their group decisions was to be taken in video-conferencing meetings, and they needed to hold at least 3 during this stage, write a report for each, record them in video, and share them with the instructors in a shared folder. Their blogs had to be finished by October 31st.

Finally, the last stage of this project was its evaluation. Firstly, the groups had to discuss and assess the blog of another group in a meeting. After this, they held a new meeting with the members of the group whose blog had been previously assessed. The aim of this meeting was to offer some guidance on how to improve their blog. The items of their assessment were the blog's content, originality, language, and quality. The maximum mark was 2 points out of 10, and the value of each item was 0.5 points. After this meeting with the members of another group, they had one week to enhance their blogs based on the guidance received. Secondly, students were supposed to show their blog in a public online presentation to the professors of both institutions. The value of this presentation was 5 points out of 10, and the items assessed were also the same: content, originality, language, and quality. At last, the remaining 3 points were awarded according to the degree of compliance with the instructions of the project: holding the meetings and uploading their respective videos and reports.

3.4. Data collection and analysis

Regarding the data collection for this research, these were gained through the tests that the students completed during the term, after which the experimental and the control groups were compared. The main purpose of this project was to measure the overall progress of the students'

knowledge and competence on language (English for Professional Purposes), content (Recycling), and digital tools (*Google Apps*). In order to measure the participants' communicative competence in their professional language, the students took a language test based on the content of the book *Communication across Cultures* (Dignen, 2011) at the end of the term. The content of this test was based on the professional communication acts proposed by Lehman and Dufrene (2013). In addition, the students also participated in a survey in which they graded the degree of importance of these professional language skills in their lives and to what extent they thought they had developed them. Regarding content, another self-created test based on the content seen in the training session was designed to check students' knowledge of recycling issues. At last, the progress in their digital competence was based on another survey which focused on their knowledge and skills in the use of *Google* tools. Table 2 shows the target professional language skills, the tasks to enhance them, and the digital tools to complete the task.

Table 2. Development of communicative competence in professional contexts through telecollaboration

Professional Communnicative Acts	**Tasks**	**Digital Tools**
1. Attending meetings	6 online meetings	*Hangouts*
2. Writing reports	4 written reports on the online meetings	*Docs*
3. Presenting information	2 oral and 2 written entries in a blog	*Blogger, Docs, Videos*
4. Explaining and clarifying procedures	Online meetings and previous and post written contact: email and chat	*Hangouts, Gmail*
5. Working in group	Online meetings, previous and post written contact: email and chat, and collaborative shared work.	*Drive, Hangouts, Docs, Gmail*
6. Evaluating and counseling	1 online meeting with another group	*Hangouts*
7. Promoting your product or service / Persuading others	1 online meeting with another professor	*Hangouts*

4. Results and findings

Students took two tests to determine their knowledge of recycling issues and competence in English for professional purposes. In both cases, results show that the experimental group performed better than the control one. Concerning content, the experimental group scored a mean mark of 8.37 out of 10 possible points, whereas the control group scored 7.06. This implies a difference of 1.31 points, or a percentage variation of 18.56%. The case of language was even more significant; the experimental group obtained a mean mark of 7.65 out of 10 and the control group scored 5.12. The difference is 2.53 and in terms of percentage variation is 49.41% (see Table 3).

Table 3. Students' performance on language and content tests

Tests	Experimental	Control	Difference	Variation %
Content: Recycling	8.37	7.06	+1.31	+18.56%
Language: Professional English	7.65	5.12	+2.53	+49.41%

At the end of the project, students were also asked how important they felt the following situations were in their professional lives. Table 4 shows results of these needs analyses. As it can be observed, both groups consider that these professional skills are important in their professional lives. The experimental group viewed them more important than the control one after they had to manage situations that involved a certain degree of competence in the following professional contexts. It shall be noticed that none of these skills was graded below 3.82.

Table 4. Needs analysis: importance of professional skills

Professional Skills	Exp.	Cont.	Diff.	V. %
Attending meetings	4.68	4.15	+0.53	+12.77%
Writing reports	4.59	3.82	+0.77	+20.16%
Presenting information	4.76	4.24	+0.52	+12.26%
Explaining and clarifying procedures to other colleagues	4.57	4.24	+0.33	+7.78%
Working in group	4.65	4.29	+0.36	+8.39%
Evaluating and counseling other people and their work	4.35	3.87	+0.48	+12.40%
Promoting your product or service / Persuading others	4.27	4.13	+0.14	+3.39%
Mean	4.52	4.15	+0.37	+8.84%

The following table shows the degree of confidence of students when participating in the target professional acts. As it can be observed in Table 5, both the experimental and the control groups had similar degrees of confidence when participating in the target professional acts before the experiment. It was after the experiment when the difference between the two groups was more significant. The results shown in the following table suggest that students who participated in the telecollaborative project felt that they had enhanced their confidence to participate in the target professional acts a great deal.

Table 5. Development of professional skills

Degree of confidence	Experimental Group				Control Group	
	Before	After	Diff.	% V.	Survey	% V.
1- Attending to and participating in meetings	3.05	4.24	+1.19	+39.02%	3.19	+32.92%
2- Writing professional reports	3.14	3.86	+0.72	+22.93%	3.11	+24.12%
3- Presenting oral and written information	2.92	3.81	+0.89	+30.48%	3.10	+22.90%
4- Explaining and clarifying procedures	3.38	3.92	+0.54	+15.98%	3.63	+7.99%
5- Team work	3.84	4.16	+0.32	+8.33%	3.98	+4.52%
6- Evaluating and counseling other people	3.35	3.84	+0.49	+14.63%	3.42	+12.28%
7- Promoting your product or service/persuasion	3.03	3.65	+0.62	+20.46%	3.29	+10.94%
Mean	3.30	3.88	+0.57	+17.98%	3.48	+11.73%

A similar situation happened with the use of Google tools; the initial degree of digital competence of the participants in the project was similar to the control group. It was also after the completion of this project when the difference between the experimental and the control groups was more noticeable. The test enquired students how skillful they felt on the use of the *Google* tools. Table 6 shows that the mean progress of the students on their use and application of these tools was 0.91, considering this a progress of 30.22% over the average initial value. In addition, it can be observed that the greatest progress was in the use of *Google Blogger* (74.11%), which, according to the data, was the least known tool at the beginning of the project.

Table 6. Development of digital skills (Google Tools)

Level of Expertise	**Experimental Group**				**Control Group**	
	Before	**After**	**Diff.**	**% V.**	**Survey**	**% V.**
Google Blogger	1.97	3.43	+1.46	+74.11%	2.4	+42.92%
Google Docs	3.62	4.11	+0.49	+13.54%	3.52	+16.76%
Google Drive	3.89	4.3	+0.41	+10.54%	3.85	+11.69%
Google Hangouts/Skype	3.16	4.22	+1.06	+33.54%	3.34	+26.35%
Google Classroom (as a student)	2.35	3.46	+1.11	+47.23%	2.71	+27.68%
Mean	*3.00*	*3.90*	*+0.91*	*+30.22%*	*3.16%*	*+25.08%*

At last, the participants were asked about their perceived learning and satisfaction with this project. Table 7 shows that they strongly feel that digital skills are necessary in their current professional lives. In addition, the students responded to a series of questions on their degree of learning in different areas. The mean of agreement with these 7 statements related to learning different skills was 4.09. Besides, we added questions related to operating in a multicultural environment and problem-solving skills; results showed that they were also satisfied in this sense. At last, it seems that their satisfaction with this project was also high (4.19 out of 5).

Table 7. Project satisfaction

	Exp.	**Cont.**
Digital skills are necessary in the current professional world.	4.78	4.42
Working in this project improved my digital/IT skills.	4.05	*Not applicable*
Working in this project improved my language on professional issues.	3.97	
Working in this project improved my language on recycling issues.	4.22	
Working in this project improved my professional skills in digital contexts (meeting, presenting information, writing reports…).	4.19	
Working in this project improved my knowledge on recycling issues.	3.95	
Working in this project helped me operate in a multicultural environment.	4.22	
Working in this project improved my problem-solving skills.	4	
I feel that the skills acquired in the project will be useful for me in working life.	4.49	
I am very satisfied with this project.	4.19	

4. Discussion

Based on Spiers and Barlett (2012), this research has suggested a model of integrated learning in digital contexts, which focuses on the development of three elements through a telecollaborative project in a cohesive way: language, content, and digital skills. In this case, the first objective was to help learners improve their English language skills for professional purposes, following Lehman and Dufrene's taxonomy (2013) of the most usual managers' professional communication acts. The second was to contribute to improve students' knowledge of recycling matters. The third one aimed at helping learners enhance their competence on the use of some *Google* tools. These three areas were integrated in a telecollaborative project work which primarily consisted in the creation of a blog and its presentation in public.

The results obtained suggest that the students' participation in this telecollaborative project was beneficial for different reasons. Firstly, participants in this project scored higher in the language test than the control group: +49.41%. It seems that our participants had the opportunity, and also the need, to use the target language in a real context in order to fulfill the goal of a specific task. The participants needed to hold meetings, carry out continuous negotiations, work in teams, or present information orally and in writing through a blog. Consequently, the project participants also had a higher degree of confidence when participating in the professional communicative acts suggested by Lehman and Dufrene (2013): +11.73%.

Secondly, the participants gained more knowledge of recycling in comparison to the control group: +18.56%. In this case, both groups attended a 2-hour session which focused on recycling matters. In this case, the experimental group continued using this knowledge during the completion of the project, whereas the control group was not offered new opportunities to apply this knowledge in practice. At last, when comparing the knowledge of both experimental and control group before launching the experiment with the knowledge of the experimental group after the project, the results showed that the experimental group advanced noticeably in this area: +25.08%.

It seems that the integration of content, language, and digital tools in a telecollaborative project had satisfactory results because it engaged students in a real constructivist environment in which communication was based on real facts and the creation of content, as it happens in CLIL or CBI. In addition, the use of digital tools for a specific aim helps the students learn how to use them and communicate their findings. Thus, the triangle introduced by Spiers and Bartlett (2012) seems to help individuals become digitally literate, being capable of creating

digital content while consuming it, and communicating at the same time. As they suggested, the digitally-literate people should be able to apply digital tools in their area of work to develop their own content, and communicate their use, actions, and findings. In this sense, one of the reasons that could explain why the experimental group performed better than the control group was that the participants were involved in a collaborative action in which the target language and its specific forms needed to be used as a working tool for the creation of a blog.

As Dudley-Evans and St. John (1998) suggest, task-based learning promotes constructivist learning in a communicative context. Thus, the creation of a blog implied that our students needed to do research and work together in the development of the blog content, as well as negotiating and problem-solving, and through a real communicative process in English, which was the only common language among the members of each group. These results are also in concordance with the words of Korfhage-Smith (2010), who suggested a series of benefits through tasks and project work if the teaching of content and languages was combined, in our case through digital tools in professional environments.

At last, other competences that seemed to have been enhanced are autonomy, teamwork, decision-making, or problem-solving, among others. These skills are also connected to the teacher's role as a facilitator, as recommended by O'Dowd and O'Rourke (2019). The need to work in teams and collaboratively negotiate the actions to take seems to be fundamental for enhancing learners' language, content, and digital skills.

5. Conclusion

This research has introduced a practical case of telecollaboration experience based on project work which integrates language, content, and digital tools. This experiment could be considered an example and a way of encouragement for future educators who are willing to implement practices likes this one in the foreign language classroom. As it has been stressed above, the results of this experiment are satisfactory since the experimental group scored higher than the controlled group in all the tests (language, content, and digital skills), and our participants also acknowledged their satisfaction with their participation in this project. The students also agreed that digital skills are necessary in the current professional world and their learning through this project had helped them enhance their professional language and digital competences.

In sum, the main limitation in this research is that language and content were not tested before the experiment and these data would have been useful in assessing the students' progress, both of experimental and control groups. In addition, the assessment of content would be more reliable in a subject in which the CLIL approach is applied; in our case, content related

to recycling was introduced to all the students, but only the experimental group had the opportunity to continue using it along the term. In further research, these limitations could be avoided. We suggest that compiling data from a larger group would be desirable, and other aspects could be analyzed such as the development of intercultural competence, other communicative acts, or other digital tools. Extending the length of the project would also be useful as it would help analyze the development of language skills. All in all, we consider that the satisfaction of our students and the results obtained are acceptable and conclusive.

In conclusion, this research is another example of telecollaborative work, as the ones cited in our theoretical framework. Based on our experience, we could conclude that this teaching proposal based on the integration of language, content, and digital skills through telecollaborative project work has been beneficial to the students, and we highly recommend the implementation of this kind of projects in the foreign language classroom.

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