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28

Contents

RESEARCH PAPERS

REFLECTIVE PRACTICE PAPERS

REVIEW PAPER

BOOK REVIEW

Challenges and other feedback: Integrating intercultural learning in the Digital Age

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Abstract

This mixed method case study explored globalization and complex relationships through a virtual exchange project between students from Germany and Colombia in upper intermediate level English classes. We believed by providing a space for online conversation, written collaboration and discussion, students would enhance their plurilingual and pluricultural competence as well as their communicative competences through the medium of English as an international language (EIL). The aim was also to enable students to investigate cultural complexity and to develop cultural curiosity. Taking into account plurilingual and pluricultural competence (PPC) and the efficacy of virtual exchanges for language learning, we used a series of tasks for students to participate in a wide range of activities of varying complexity regarding German and Colombian culture for a six-week exchange. Students self-assessed their written and spoken online interactions as well as their perceived skills in mediating texts and communication based on the recently added descriptors in the Companion Volume to the CEFR. They also rated their plurilingual and pluricultural competences on a PPC scale at both the beginning and end of the project. Results demonstrate that there is value in implementing virtual exchange projects in which students reflect on and increase their awareness of these concepts also suggesting that pairing students with international students rather than L1 speakers of the language has a potentially positive effect on students' anxiety level and communicative competences.

Keywords: Virtual Exchange; Plurilingual and Pluricultural Competence; Intercultural Communication; English as an International Language (EIL); Foreign Language Learning; NNS-NNS interaction.

1. Introduction

Languages cannot be learned in isolation, and language learning helps promote a healthy exchange of ideas across borders (Council of Europe, 2001) to a variety of other language speakers in a multitude of communicative events (Council of Europe, 2018). In today's global and pluricultural world, to benefit thoroughly from such exchanges, learners need to be in contact with others who do not represent their current homogenous language-learning situation. Abrams (2002) stresses that instructors should aim at supporting students of foreign languages by helping them "recognize their own complex cultural microcosms, and […] offer learners ample opportunities to develop skills to investigate cultural complexity (how to ask questions, what questions to ask), and to promote cultural curiosity (the desire to ask questions)" (p. 142).

In such a context, telecollaboration (Warschauer, 1996) can improve students' language skills development and promote intercultural communicative competence (ICC) as well as multiple literacies (Avgousti, 2018). Ke and Suzuki (2011) point out that the advantage of a non-native speaker to non-native speaker (NNS-NNS) constellation, as opposed to a NNS-NS (native-speaker) constellation, is that students are more likely to focus on intelligibility and intercultural comprehension rather than language forms. Some research findings suggest that students seem to be less anxious when communicating with NNS in virtual exchanges and feel that there is mutual support (Guarda, 2013). What is more, most interactions involving English as a Lingua Franca happen between non-native speakers of English (Seidlhofer, 2005). For these reasons, the authors decided to implement a NNS-NNS dyad.

2. Literature Review

2.1. Plurilingual and pluricultural competence (PPC)

Whilst PPC was mistakenly considered to be two different entities in the past (Galante, 2018), it is now perceived as one single construct. The CEFR defines PPC as "the ability to use languages for the purposes of communication and to take part in intercultural interaction, where a person, viewed as a social agent has proficiency, of varying degrees, in several languages and experience of several cultures" (Council of Europe, 2001, p. 168). It also specifies PPC as

> the ability to call flexibly upon an inter-related, uneven, plurilinguistic repertoire to […] express oneself in one language (or dialect, or variety) and understand a person speaking another, bring the whole of one's linguistic equipment into play, experimenting with alternative forms of expression (Council of Europe, 2018, p. 28)

Due to the new descriptors in the CEFR Companion Volume, alternative language pedagogies such as virtual exchanges might improve students' PCC in communicative interactions (Galante, 2018).

2.2. Virtual exchange

In an era of globalization, virtual exchanges are one of the tools computer-assisted language learning (CALL) offers to support students in acquiring the skills necessary to deal with an increasingly more complex world. Virtual exchange is a means of communication by which geographically dispersed students of language communicate with each other with the purpose of developing their foreign language linguistic competence and their intercultural competence (Belz, 2003). Initiatives such as *UNIcollaboration* aim at supporting educators in Higher Education in Europe, and beyond, to establish virtual exchange projects in order to help students "develop 21st century attitudes and skills such as empathy and tolerance, critical thinking, intercultural awareness and foreign language competences and digital literacy" (Unicollaboration, n.d, para. 1).

Much research has analyzed affordances of synchronous computer-mediated communication (SCMC) for language learning. Gläsman (2004) stresses that SCMC prepares learners for communicating in real time with real people. Due to video chatting, for example in *Skype*, the exchange is dynamic (Pellettieri, 2000) and can be interactive (Schenker, 2017). SCMC video-chat can positively affect student motivation (Yamada, 2009) and the literature points at students' perceived gains in linguistic and intercultural competence (Tian & Wang, 2010). Virtual exchange projects have shown that students develop their learner autonomy (e.g. Fuchs, Hauck, & Müller-Hartmann, 2012) and that the attitude of both teachers and students towards this kind of learning is highly positive (Helm, 2015). The present study sought to analyze how the virtual exchange enhanced learners' perceived plurilingual and pluricultural competence as well as their communicative competences through the medium of English as an international language.

The following research questions guided this study:

1. How does virtual exchange enhance students' perceived plurilingual and pluricultural competences?
2. How does an intercultural exchange enrich students' perceived communicative competence?

3. Methodology

This study uses a mixed-method case study design. In the context of this design, thirty-one students (three separate English classes participated in the cultural exchange. Due to the disparity in numbers, two English classes in Germany were teamed up with one class in Colombia. Participants received detailed instructions at the start of the project and were expected to carry

out specific tasks as suggested in the outline (see Appendix A). They were also instructed to work together to achieve the outcomes. There were few asynchronous tasks set, and the students schedule their synchronous meetings. Students used *Zoom* (video conferencing) as their meeting place, and these meetings were consequently scheduled, recorded, and placed into assigned and separately accessed Google folders. Students were expected to participate in the exchange, so the exchange was included in student evaluation and grades. Participation in the study was considered outside their classroom obligations, and each student signed informed consent prior to beginning.

Six questionnaires were administered. Three questionnaires were completed at the beginning of the project and three at the end. The post-qualitative questionnaire was written by hand or on a PC, whereas all other questionnaires were mainly completed on students' mobiles or on PCs. The questionnaires were developed in English because of the relatively high level of English amongst the students.

3.1. Participants

The 31 participants in the present study are learners of upper intermediate English living in either Germany or Colombia. Most have German (and a German dialect) or Spanish as their L1. There were also two South Korean and one French participants. The students were between 16 and 30 years of age with the majority of them being under 20 (*n*= 18). Almost all of them have been studying English since they were children (6 to 10 years old). Their current majors included Automotive System Engineering, Business Administration, International Business, and Mechanical Engineering. Appendix A gives an overview of the tasks and the timeframe for this project.

3.2. Data collection and analysis

Various instruments were used to collect data. The demographic survey included two open-ended discussions regarding current perceptions of students' own plurilingual and pluricultural competence (Galante, 2018). The self-assessment comprised of rankings regarding the descriptors found in the area of the *CEFR Companion Volume: Written and online interaction and mediation (of text and communication)* (Council of Europe, 2018). The plurilingual and pluricultural competence (PPC) scale introduced by Galante (2018), contained 24 statements in which students marked in Likert scale, from 1 strongly disagree to 5 strongly agree, their perceptions of each. A post-survey to obtain students' perceived ideas about the virtual exchange and the use of English as the medium of communication culminated the project. Data analysis consisted of using descriptive statistics as well as qualitative categorizations that helped identify key themes within student commentary regarding PPC and their communicative competence.

4. Results

4.1. Plurilingual open-ended discussion

Student responses to the statements provided to them revealed ideas within languages, variation, and proficiency. Table 1 demonstrates the variety of answers from the participants.

Table 1. Plurilingual discussion responses.

Languages	Variation	Proficiency
• Spanish, English, German, and French.	• I know different accents in English and Spanish.	• My proficiency level is not the same in all

• I speak 5 languages. • I speak my native language (Spanish). • I have a good level of english and I'm learning know more than 2 languages. • No, because I only use German and English.	• Many variations that English has. • Differences between English spoken in different countries. • I know the different variations of Spanish expressions in my country depending the region. • My capacity to identify variations according to regions.	• I speak English more fluent than French. • I can at least speak the basic things in all these languages but I don't have the same fluency. • I can speak perfect Korean, English like a 7-year-old US kid and Japanese at the same level of a kid who is about to start the first step. • I know three languages but I speak one better than the other. • I don't speak them with total fluency.

Note: The statement reads, "A plurilingual person is someone who knows two or more languages, but does not necessarily speak them at the same proficiency level, for example one language can be more fluent than the other. A plurilingual person is also someone who knows variations in the same language, for example, the way a language is used in different regions of the country or in other countries. Do you consider yourself a plurilingual person? Yes or No? Why do/don't you think so?" (Galante, 2018, p. 297).

Some students demonstrated clear knowledge of many languages; others stated they knew one, but were working on other languages. They also demonstrated understanding of variations within languages and their abilities to recognize such varieties. With regard to proficiency, participants were quick to identify the differences with their proficiency of the languages they speak. These results revealed that, accordingly, they understand their role as social agents (Abrams, 2002; Council of Europe, 2018) and are aware of their knowledge toward other languages.*4.1. Pluricultural competence open-ended discussion.* Student responses to the pluricultural statement revealed both positive and negative responses. Some of the students replied, for example:

- *Absolutely! We have a different culture which would be unusual in Germany. I always switch myself between these two cultures to come along with the person I am talking to. Also, you forget your culture from your relatives because you live in Germany and slowly adopt their culture*
- *I am a pluricultural person because I can identify differences and similarities between regions here in my country. I can also say what are some of the similarities and differences between my country and other countries I have visited before, and I can easily adapt to the other cultures.*
- *Yes, I consider I am a pluricultural person because I am interested in learning about other cultures. I also think i know about more than two cultures.*
- *Yes, I do. I was involved in a multicultural experience for one year at my university. It was a program called Global Peer Program. It helped me to develop my multicultural skills and understand the values and beliefs from others cultures.*
- *I've been studying about cultural differences and also analyzing cultures in other countries and in other regions of the same country like Colombia. According to this statement, I am a pluricultural person.*

There were also some less positive comments regarding pluricultural competences. Some examples include:

- *I don't. I've been living in the same country and city since i was born, so I haven't been in deep contact with other cultures. I might know some facts, behaviors and information about multiple cultures around the world (specially the culture of the countries that speak the languages that I am learning and also regions in my country) but i haven't adopt and implement them to my lifestyle at all.*
- *I don't think so that i am a pluricultural Person because i don't know that much about other cultures and regional cultures in Germany*
- *In Colombia we have some culture differences between regions, I know that,but I don't consider myself a pluricultural person because I don't know other cultures differents from the colombian one.*
- *I just know the german culture.*

Again, the participants' affirmative responses demonstrate motivation and experiences with which they learned or obtained their knowledge of other cultures. The responses also show that students are aware and feel competent with the stated skills. The negative ideas demonstrate that though they may feel less competent as they comment about not traveling around, but they do mention an awareness of other cultures. Students recognize their active roles both positively and negatively (Abrams, 2002; Galante, 2018).

4.2. Self-assessment

As stated previously, the self-assessment survey had three parts. To eliminate confusion, the investigators limited the *CEFR Companion Volume: Written and online interaction and mediation (of text and communication)* (Council of Europe, 2018) level descriptors to the participants. Students selected the statement that applied to them the best from B1 level to the C1. The students felt the most comfortable as a B2 learner in each of the categories, and the least comfortable in mediating communication as 43.3 percent of the students ranked in B1 (see Table 2). The post-self-assessment numbers do not denote much change between the students' perceived competences. More students, however, claimed C1 in written and online communication, and there was a notable shift in mediating communication from B1 to B2 competence level. This could result from becoming used to the format and assignment itself. It also demonstrates the participants becoming comfortable with each other (Guarda, 2013).

Table 2. Results of self-assessment survey (Pre- and Post-).

Written and online interaction						
		Pre-Self-Assessment			**Post-Self-Assessment**	
		Frequency	***Percentage***		***Frequency***	***Percent***
CEFR level	B1	9	30,0	B1	10	32,2
	B2	15	50,0	B2	13	41,9
	C1	6	20,0	C1	8	25,8
	Total	30	100,0	Total	31	100,0
Mediating communication						
		Pre-Self-Assessment			**Post-Self-Assessment**	
		Frequency	***Percentage***		***Frequency***	***Percent***

CEFR level	B1	13	43,3	B1	6	19,4
	B2	10	33,3	B2	19	61,3
	C1	7	23,3	C1	6	19,4
	Total	30	100,0	Total	31	100,0

Mediating a text

		Pre-Self-Assessment			**Post-Self-Assessment**	
		Frequency	***Percentage***		***Frequency***	***Percent***
CEFR level	B1	8	26,7	B1	8	25,8
	B2	20	66,7	B2	22	71,0
	C1	2	6,7	C1	1	3,2
	Total	30	100,0	Total	31	100,0

4.3. PPC scale

The application of the PPC scale as introduced by Galante (2018) was given at the beginning and end of the project. The PPC is a scale with 28 items, 14 culture and 14 language, in which students are able to measure their current perceptions to the items in the scale. Galante (2018) points out that the items in the scale represent the pluricultural and plurilingual competences and both knowledge and use of languages and cultures are taken into account. The scale was adapted to fit the context and 24 statements remained. Table 3 exhibits results for both the pre- and post-tests.

Table 3. Descriptive statistics for PPC pre- and post-tests.

	Pre-test		**Post-test**	
Statement Number	**Mean**	**Standard Deviation (*SD*)**	**Mean**	**Standard Deviation (*SD*)**
1	3,78	1,06	3,81	1,16
2	1,78	1,16	1,54	,76
3	3,36	1,06	3,54	,92
4	3,89	,73	3,90	,90
5	1,93	1,01	1,68	,79

6	3,89	,83	4,35	,66
7	4,25	1,10	4,42	,88
8	2,28	,76	2,06	1,06
9	2,39	,91	2,16	1,15
10	1,07	,26	1,39	,98
11	2,07	1,15	1,90	,97
12	4,89	,31	4,45	1,05
13	4,43	,87	4,32	,97
14	3,71	1,01	4,13	,77
15	2,75	1,14	2,48	,85
16	2,32	,81	2,16	,93
17	4,57	,63	4,48	,68
18	1,93	,94	2,32	1,10
19	2,57	1,13	2,64	1,37
20	2,75	,84	2,32	,94
21	4,00	,94	4,38	,71
22	4,71	,46	4,68	,54
23	3,10	,95	2,87	1,33
24	3,96	,79	4,19	,87

Note: Pre-test *n*=28; Post-test *n*=31

Unfortunately, we were unable to distinguish between the two groups prior to the participants taking the pre-test, so the comparisons were not compiled. However, three of the statement items did demonstrate some change that could be discussed and recognized as possibly meaningful.

Item 14, for example, "It is easy for me to talk to people from other cultural backgrounds, and discuss similarities and differences in points of view" reveals *M*=3.71 for the pre-test to a *M*=4.13 for the post-test. In addition, Item 20, "When communicating with people from other cultural backgrounds, it's difficult for me to explain misunderstandings and misinterpretations" shows *M*=2.75 for the pre-test to *M*=2.35 for the post-test. Furthermore, item 21, "I am able to recognize some languages other people speak if they are similar to my first language (e.g., same language family)" demonstrates *M*=4.00 for the pre-test to *M*=4.38 for the post-test. These slight shifts could represent students becoming comfortable with each other and their own language learning experiences (Seidlhofer, 2005). Also, students demonstrate

improvement in language skills and ICC changes (Avgousti (2018); Warschauer 1996) indicating a stronger lean towards cultural curiosity and pluriculturism and plurilingualism (Galante, 2018).

4.4. Post-Qualitative survey

The post-qualitative survey adapted from Müller-Hartmann, O'Dowd and Colleagues from the EVALUATE team (2017) (see Appendix B) consisted of six open-ended questions and seven measurement statements for improvement to be rated on a Likert Scale.

In the questionnaire, students were asked about how working collaboratively with international partners influenced their learning experience. Interestingly, some students commented on the project as being an alternative or better way of learning. One Colombian student, for example, pointed out that "sharing […] with a person from another culture about the cultural dimensions of Hofstede […] is definitely not the same learning process when you memorize this topic in class, and when you share the different experiences with a person from another country." Another Colombian student stated that the project "let me learn in a new and creative way". Another student favored it to their speaking practice in class ("It is a better way for practicing speaking than just a normal class"). One student called it a "didactic experience". Some students stressed its authenticity: "You could learn dealing with different cultures in order to achieve a common goal". Another student stated: […] I had to deal with the differences in the time zone and a really busy person" and one student pointed out "I think this is training for real life".

When students had to decide whether their confidence in using the foreign language had improved because of the project, all students except for one (who felt their confidence got worse) thought that their confidence had "much improved" or "improved a little". Several students stated in the qualitative part that they felt more confident speaking English after the project (e.g. "Once I started to talk with her […] I feel good because I was understanding what she said and the conversations flowed. I think now I'm not afraid of having conversation in English".) Interestingly, some of the students' confidence was possibly enhanced by the fact that they talked to other NNS of English as opposed to NS. For instance, one German student commented that, when talking to NNS "[…] it's easier to talk free and you feel allowed to do mistakes." Similarly, a Colombian student stresses that, when talking to NNS, "I am aware of the mistakes I make and we correct each other with more confidence. In this case, the other person understands what it feels to make a mistake." Another student in Colombia points out that in NNS-NNS interaction, "[…] we are both in the same situation […] [and] nobody is in disadvantage, compared to the other one." These comments suggest that there may be value in choosing NNS speakers to manage students' anxiety level. This is in line with findings in the literature regarding NNS-NNS dyads in virtual exchanges (Guarda, 2013).

5. Conclusion

To answer our original questions whether the virtual and intercultural exchange enhanced and enriched students perceived plurilingual and pluricultural competences as well as their communicative competences, we can see that the arrangement certainly changed the idea and knowledge of how students perceived themselves and how they fit into the role of a social agent. The results demonstrate that there is value in implementing virtual exchange projects in which students reflect on and increase their awareness of these concepts. Participants also felt more confident using the foreign language at the end of the project. Consequently, the project also suggests that pairing students with international students rather than L1 speakers of the language has a potentially positive effect on students' anxiety level and communicative competences. Future studies would include varying the groups throughout more than 2 countries as well as including a problem-based task which the teams could work together to solve.

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Appendix A: Weekly task calendar

Week	Overview	Activity(ies)
Week 1	• Topic: Getting to know your partner • Mode: Synchronous (20-30 minutes)	• Students create a list of 10 questions to ask partner regarding their life and culture. • Students interview *each other via Zoom (Must record the session and upload in assignment folder).* • Pre-survey
Week 2	• Topic: Holidays, festivals, and activities • Mode: Synchronous (20-30 minutes)	• Students discuss holidays, festivals, and activities they enjoy, what they are about, what they do, what is typical in terms of eating etc. • They discuss the similarities and differences between the two countries.
Week 3	• Topic: Cultural orientation • Mode: Asynchronous • and synchronous (20-30 minutes)	• Students will first do the Self-assessment (Mapping your Cultural-Orientation-Sheet) • https://www.uwb.edu/getattachment/globalinitiatives/resources/intercultural-competence-tool-kit/mapping-your-cultural-orientation.pdf • For more information on the different categories, see p.18-27: sites.psu.edu/…/Cultural-Competency-Presentation-2016.pptx • Students then discuss the differences (e.g. low/high-context culture, monochronic/polychronic culture, individualistic/collectivistic, egalitarian/hierarchical etc.)

Week 4	• Topic: Student life • Mode: Synchronous	• Students prepare questions for their partners about student life. • Students then have a discussion on student life, tuition fees, part-time jobs, job perspectives, future plans
Week 5	• Topic: Students prepare a presentation on a topic • Mode: Synchronous (20-30 minutes)	• Students investigate assigned topic (one of 6 from Hofstede's 6-D model) and prepare a presentation. • https://www.hofstede-insights.com/product/compare-countries/
Week 6	• Topic: Cultural Dimension • Mode: Depends on students	• Students present the results of their topic discussed in week 5. • Students review two other assigned presentations and give feedback using provided feedback sheet. • Post-survey

Appendix B: Post-qualitative survey

1. Does it make a difference whether you talk to native speakers or non-native speakers of English when you participate in a project like this? Why/why not?
2. What were your expectations? In what way has this project met and not met your expectations?
3. Please describe how doing this project collaboratively with international partner(s) affected your learning experience.
4. Given your online interactions with students from another country, describe any key changes in how you would approach dealing with someone with another cultural background.
5. How did you feel about the fact that your conversation was video-recorded?
6. How (if at all) has your ability to use a foreign language developed during the exchange? **Ability to understand**:

    - much improved
    - improved a little
    - no improvement
    - has got worse
    - not sure

7. How (if at all) has your ability to use a foreign language developed during the exchange? **Fluency in speaking**:

    - much improved
    - improved a little
    - no improvement
    - has got worse
    - not sure

8. How (if at all) has your ability to use a foreign language developed during the exchange? **Grammatical accuracy**:

    - much improved
    - improved a little
    - no improvement

- has got worse
- not sure

9. How (if at all) has your ability to use a foreign language developed during the exchange? **Accuracy of pronunciation**:

   - much improved
   - improved a little
   - no improvement
   - has got worse
   - not sure

10. How (if at all) has your ability to use a foreign language developed during the exchange? **Range of vocabulary**:

    - much improved
    - improved a little
    - no improvement
    - has got worse
    - not sure

11. How (if at all) has your ability to use a foreign language developed during the exchange? **Confidence in using the foreign language**:

    - much improved
    - improved a little
    - no improvement
    - has got worse
    - not sure

12. How (if at all) has your ability to use a foreign language developed during the exchange? **Ability to interact with foreign language speakers**:

    - much improved
    - improved a little
    - no improvement
    - has got worse
    - not sure

13. If your foreign language use has not improved, can you explain why the exchange did not help you in this way?

Smartphone tapping vs. handwriting: A comparison of writing medium

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Abstract

Mobile-learning (m-learning), or mobile-assisted language learning (MALL), has been the object of a great deal of research over the last twenty years. However, empirical work in this area has largely failed to produce generalizable conclusions due to variation in methodology, target feature, and task-type (Burston, 2014, 2015). As schools in Japan begin to join the growing number of classrooms worldwide using mobile-based assignments, this study examined how Japanese EFL students' writing task production differed depending on writing medium (i.e., handwritten on paper vs. tapped on a smartphone). Writing samples were collected from N = 1,449 participants, divided into smartphone- or paper-based groups, across a spectrum of English proficiencies. Handwritten submissions were found to be significantly longer than those composed on a smartphone (p < .001, d = .54), with differences being more pronounced for learners of higher proficiency than lower ones. Significance and effect sizes steadily dropped from p < .001, d = .66 for advanced learners to p = .168, d = .38 for beginners. These results indicate that care must be taken in designing m-learning activities, and that students must be given adequate training in smartphone-input skills (i.e., tapping) and time to acclimate before using such tasks for high-stakes assessments.

Keywords: m-learning, Mobile-Assisted Language Learning, tapping, handwriting, writing task.

1. Introduction

Technology is such an integral part of writing that it is often forgotten that writing is simply not possible without technology. "Whether it is the stylus of the ancients, the pen and ink of the medieval scribe, a toddler's fat crayons, or a new Powerbook, technology makes writing possible" (Haas, 1996, p. 9). Therefore, it is peculiar how little attention writing research has focused on the technologies used, instead largely choosing to focus on cognitive or semiotic aspects, or the development of writing skills (Mangen & Velay, 2010). As national policies and educational institutions worldwide shift away from teaching skills such as cursive handwriting and calligraphy in favor of word processing (Petrescu, 2014), this study seeks to investigate whether students' compositions on smartphones differ from those on paper.

Physical differences between handwriting and using digital tools for entry are obvious. Writing is unimanual, with writers' focusing their visual attention largely on the tip of the pen as their fingers guide it across the page. Compare this to fluent blind typists, who use both hands on the keyboard (i.e., the motor space) while their eyes focus on the screen (i.e., the visual space). It is therefore said that while handwriting is a unified activity, typewriting is divided into two distinct and spatiotemporally separated spaces. Smartphones most likely land somewhere in between, as not only are the motor and visual spaces much closer together than typing, but also "blind tappers" who can compose a text without looking at their fingers are exceptionally rare. In fact, users are not unified in their tapping techniques, with styles ranging from single thumb, to double thumb, to single finger, with exceptionally proficient smartphone users utilizing "swipe-to-type", a method of text input where the user slides their finger across the touchscreen to the desired letters in succession, without releasing contact.

Graphomotorically, writing is easily more complex than both typing and tapping. Writing involves the manual creation of the individual shapes of each letter, and while each letter has a standard shape, each writer has the freedom to incorporate stylistic qualities that make their written production uniquely their own. Typing/tapping production is the same for all letters (e.g., pressing a button); the difference between letters is only their spatial location on the keyboard. As such, writing has been thought of as being a complex process involving cognition, neurosensory feedback, and fine motor skills while typing/tapping is more of an exercise in simple memory.

The different haptics (tactile perceptions associated with active movements) (Mangen & Velay, 2010) of various writing media are well known, with some authors indicating that the *feeling* of writing elicits a different emotional state than typing does. Despite these purported emotive differences, few instances of previous research have heretofore empirically examined the effects of medium on writing task performance. While there have been some studies which compared computer-based typing to handwriting (e.g., see Longcamp, Boucard, Gilhodes, & Velay, 2006 for effects on character recognition; Mogey, Paterson, Burk, & Purcell, 2010 for composition length; Mueller & Oppenheimer, 2014 for cognitive processing), it has yet to be determined whether smartphone-based tapping will mirror the results of typing or will produce unique findings. In addition to the physical differences of typing and tapping elucidated earlier, the automatic spellcheck and predictive functions of smartphones (which allow for whole words to be entered with a single tap) create for a distinct text-entry style that should be researched independently from typing. Unfortunately, despite hundreds of MALL studies having been published over the last 25 years, there have been almost no studies investigating writing (neither quality nor volume) as the target learning outcome (Burston, 2014).

Previous studies in this field have also overwhelmingly looked at differences in typing and writing in participants' first language (L1). The current study examined Japanese tertiary-level students of EFL, writing in their second language (L2). This is of key concern to the massive EFL industry with over 1.5 billion learners of English worldwide (Beare, 2018), as it is yet unknown if the results found for L1 speakers can be generalized to apply to L2 learners as well. This study will therefore contribute quantitative empirical data to address this current gap in the literature by asking the following:

- Research Question 1 (RQ1): How does the use of a smartphone affect the length of compositions produced by Japanese tertiary EFL students?
- Research Question 2 (RQ2): To what degree does English proficiency affect the outcome of the experiment?

While this study only focuses on the volume of written production (i.e., number of words) as opposed to other measures such as complexity, accuracy, or lexical variation, it is important to remember that the population being investigated is that of L2 learners, not fluent L1 speakers. Traditionally, writing assignments (in both the L1 and L2) have minimum word- or page-count requirements to force students to produce at least a certain amount of prose. Acknowledging that *more* does not necessarily equate to *better*, greater quantity is nevertheless, highly desirable in the second language acquisition context. A greater volume of production means that students must be engaged in the task longer, extending their *private speech* time (i.e., planning time to think, organize, rehearse, or record one's own speech). Lantolf (2000) asserts that, "private speech as language play could be a key factor in the appropriation of the features of a second language" (p. 93), meaning that the longer the student is engaged in the task, the greater the opportunity for the acquisition of features. In addition, usage of lexical items or grammatical structures in a practical, communicative way also enhances (or reinforces) the development of form-function mapping.

Increased production also creates more opportunities for corrective feedback and engages the reader to a greater degree. This is beneficial to language learners, as feedback (both positive and negative) is another form of mediation that has been thought to enhance both oral and written linguistic accuracy (Ellis, 2009). Positive feedback provides the learner with affirmation that their language or response was correct and stimulates motivation to continue learning. Negative feedback draws a learner's attention to an inaccurate or deviant linguistic item, allowing them to notice the gap between their interlanguage and the target language. This step is considered by

many (e.g., Gass & Selinker, 1994; Long, 1996; Ellis, 1997; Schmidt, 1990) as being a necessary condition for language acquisition. For these reasons, it is important to understand how writing medium influences the length of prose produced by language learners.

2. Literature Review

Although the current study is a unique investigation into the differences between two types of writing media, philosophers have debated for centuries over the potential drawbacks of incorporating new technologies into education, even as far back as the Ancient Greeks' suspicion surrounding the invention of the written word. Education and culture in the age of Plato was based in oral transmission, which required exceptional memory and oratory skills. For those ancient philosophers, written language represented a fundamental shift away from the value placed on storytellers and created the fear that writing would not only "create forgetfulness in the learners' souls" but also remove the watchful gaze of the instructor who was ostensibly the possessor of knowledge. Once ideas had been written, they could be "tumbled about anywhere among those who may or may not understand them" (Plato, circa 370 B.C., 274e–275b).

While some cultures still based on oral transmission survive to this day, it is plain to see that most have given in to incorporating, and even prizing, literary skills of reading and writing. What Plato himself could probably not have predicted, was that in modern times there are now several different *methods* of writing, each with their own advantages and drawbacks. Even the distinction between writing in indelible versus erasable ink carries inherent differences in terms of cognitive function, as the ability to quickly erase and correct one's writing has been thought to increase flippancy and reduce planning time before putting pen to paper (Baron, 2009). The same could be said regarding typing on a typewriter versus a computer; although the body mechanics are the same for both actions, the tangible nature of one versus the digital nature of the other results in fundamentally different cognitive effects. How these effects impact learners have not been adequately researched to date, with few studies investigating typing versus handwriting, and with no studies yet investigating tapping versus either.

What little research that has been published on the typing/handwriting dichotomy, largely focused on perceptive or retention differences. Several studies have found that learning a new writing system by typing results in poorer development of letter recognition compared with learning by writing. This result has been replicated in both pre-literate children in their L1 (Longcamp, Zerbato-Poudou, & Velay, 2005; James & Engelhardt, 2012; Kiefer et al., 2015), and adult learners of an L2 (Longcamp et al., 2006). Further evidence of the link between reading and writing has been provided by neural imaging studies which revealed that motor-control regions of the brain are activated while reading handwritten text (James & Gauthier, 2006); essentially the brain recalls and simulates the act of writing by hand when reading. In the case of learning letters via typing/tapping, the only action required to produce a letter is pressing a button, resulting in a dearth of stimulation as there is no variation in graphomotor skills recruited. In the case of learners of L2 English, who already have limited exposure to the target language, the lower stimulation afforded by typing may pose a serious detriment to their language acquisition efforts.

Writing letters in meaningful context (as opposed to drawing them as objects or tracing) was further shown to lead to increased stimulation in both left and right anterior fusiform gyrus regions of the brain, with researchers proposing that the greater variation produced by free-form writing was what led to the greater activation. As everyone has a unique handwriting style, "only free-form printing leads to a non-stereotypical, noisy form of a specific letter" (James & Engelhardt, 2012, p. 41), which allows for a wider range of variable exemplars from which to categorize and therefore identify letters. Unfortunately, especially for learners from non-alphabetic-based languages, the only opportunity for writing the alphabet in a meaningful context is likely the EFL classroom.

As the current study investigates tertiary students who have already mastered the English alphabet (although their L1 uses a logographic writing system), the question becomes whether the above findings, which focused only on *letter* recognition, can be expanded to include *word* recognition as well. The limited research in this area has not yet produced any quantitative data to support this theory, although interviews with EFL students have indicated that

this may be the case. When Japanese EFL students (*N* = 225) were asked if they would prefer to complete writing assignments on their smartphones, 76.44% of respondents expressed little to no interest in doing so, citing reasons such as, "I feel I remember more when I write something out by hand" and "I don't think it's possible to memorize words unless you physically write them out" (Lee, 2019a, p. 221). This could possibly be reflective of the students' long exposure to the traditional Japanese method of teaching kanji (logographic writing) which utilizes finger movements when reading new characters, which has been shown to lighten neural loads (Matsuo et al., 2003). It also illustrates an important distinction between L1 and L2 research in that EFL learners approach writing tasks as not only opportunities for personal expression, but also for learning. EFL writers must go through the additional process of looking up new words and expressions; essentially both *what* to say and *how* to say it, placing further strain on their cognitive resources.

It has yet to be determined how smartphones' enhanced texting features (e.g., spellcheck, next-word prediction) affects the speed/accuracy of writers, though potential benefits to EFL learners certainly exist. As next-word prediction only offers correctly spelled and grammatically correct suggestions, EFL students who are worried about their grammatical accuracy may increase their tapping speed and confidence while using this feature. This advantage is particularly salient as keyboarding fluency has been identified as a major contributing factor which influences the quality of typed prose. Correlations have been found between slower typing speed and lower quality of writing due to the increased demand on higher-order processes such as planning and reviewing (Connelly, Gee, & Walsh, 2007). However, Mogey et al. (2010) found that students writing responses to exam questions generally wrote more words than their handwriting counterparts. These findings should not be conflated with Mueller and Oppenheimer's influential study (2014) which found that while factual recall was comparable between typed and handwritten notetakers, typists performed poorer on conceptual understanding questions. The researchers hypothesized that since typed notes were faster, this allowed for a tendency to take notes largely verbatim. The slower speed of taking notes by hand forced students to paraphrase, i.e., synthesize the content, resulting in a greater degree of comprehension.

3. Study design

3.1. Participants

Participants were undergraduate students at a small private university in rural Japan, which specializes in industrial sciences. All students are required to take compulsory English courses to graduate; there is no English major at present, and all the participants attended this school to study other disciplines. The overall English proficiency of the participants could be classified as 'elementary', reflected by their average TOEIC score of 346, which is well behind the national average of 425 for university students of similar fields (Nyugaku et. al, 2017).

Upon matriculation, each first-year student is given a TOEIC Bridge test, the scores of which are used to determine class groupings within each course major. The number of class divisions per department varies, as the university endeavors to keep class sizes down to generally 25 students or less, and each academic department has a different number of students enrolled. However, in order of descending proficiency, the naming system follows the pattern: A1, A2, B1, B2, and B3. (Note that TOEIC Bridge does not test writing ability; proficiency assessments should therefore be taken to refer to listening and reading abilities only.) In total, *N* = 1,449 participants were recruited for this study consisting of first-year (*n* = 509), second-year (*n* = 465), and third-year students (*n* = 475) from all proficiency levels, across all academic departments. All participants were L1 Japanese speakers.

3.2. Materials and methods

The writing task for this study consisted of a simple prompt, written in the L1 of the participants, asking students to describe in English how they spent their summer holidays (Wolfe and Manalo (2004) employed a similar study design to assess writing performance, though their writing prompt was taken from a TOEFL test and provided in English). No guidance was given to the students

as to how much they were expected to write, nor was there a time limit, as the study hoped to investigate how much prose the participants would produce naturally, in an unstructured context.

The number of words (i.e., tokens) produced was chosen to be the assessment metric, as it is possible to measure objectively. Previous research comparing typed and handwritten text has shown differences in this area (see Mogey et al., 2010), creating a reference point which makes cross-study comparison possible. Further, studies have shown that raters of text 'quality' are unreliable due to bias based on appearance (e.g., poor penmanship) and expectations of higher quality for word-processed text (Gentile, Riazantseva, & Cline, 2001). An analysis of complexity, accuracy, and frequency (CAF) was also not considered appropriate as handwritten text has been found to generally employ shorter sentence length (Collier & Werier, 1995), contain fewer mechanical errors (Gentile et al., 2001), and be written in a different (weaker) voice than typed text (Wolfe, Bolton, Feltovich, & Bangert, 1996), which would potentially bias the results.

Participants were divided into smartphone-based (n = 725) and paper-based (n = 724) groups, with smartphone users directed to a Google Form with the writing prompt. The response field was deliberately expanded to show 15 blank lines (the default is to initially show only a single blank line, which expands as needed). The default setting was shown to be a source of confusion during piloting, as some trial users incorrectly assumed that they could only enter a single line of text. This Google Form was printed out in A4-size for the paper-based respondents in order to visually match the aesthetics of the tasks for both groups in terms of color, font, illustrations, spacing, etc.

The total number of tokens was manually calculated (i.e., automatic word count features were not employed). The following conventions were established to ensure consistency:

- Contractions (e.g., I'm or don't) were counted as two tokens.
- Non-words, alphabetic in nature (e.g., lol or ha ha) were counted as a single token.
- Non-words, graphic in nature (e.g., :-P or (^_^)) were not counted.
- All text was counted, even that which did not directly relate to the question prompt (e.g., greetings, closings, other pleasantries, etc.).
- Text written in Japanese (though rare) was *not* counted.
- Grammar mistakes were counted at face value without correction (e.g., I was go = three tokens).

IBM's Statistical Package for the Social Sciences (SPSS) v.23 was used to determine descriptive statistics and perform t-tests; Cohen's *d* calculations were done using the langtest.jp online tool.

4. Results

Descriptive statistics for the two groups are presented below in Table 1.

Table 1. Descriptive statistics of written production (token count)

Writing medium	*N*	*M*	*SD*	*SE*
Paper	724	22.97	16.59	.62
Smartphone	725	15.01	12.91	.48

As can been seen in Table 1, the participants using paper produced a greater amount of prose (M = 22.97, SD = 16.59) compared to their smartphone-using classmates (M = 15.01, SD = 12.91). An independent-samples t-test was subsequently run, which confirmed that the difference between the means of the two groups was statistically significant; $t(1447) = 10.19$, $p < .001$ (see

Table 2, below). A Cohen's *d* of .54 was obtained, which is considered small-to-medium as per current benchmark standards in L2 research (Plonsky & Oswald, 2014).

Table 2. Output of t-tests (comparing token counts of paper- vs. smartphone-based groups)

	T	*df*	*p*	*d*	95% *CI*
Paper- vs. Smartphone-based	10.19**	1447	< .001	.54	6.42, 9.49

** denotes significance at the $p < .001$ level

The results in Table 2 serve as the basis to answer RQ1. EFL learners using a smartphone for English composition produced significantly less tokens than their classmates writing on paper. A secondary objective of this study was to investigate the relationship between English proficiency and writing task production under the two conditions. As previously described, first- and second-year English courses at the university are divided into classes based on proficiency. However, English classes for third-year students and above are elective classes with free enrollment. As a result, data collected from the third-year participants ($n = 475$) was not able to be considered for proficiency-related calculations and are not included in the following analyses. Table 3 shows the remaining 70 classes worth of data ($n = 974$) tabulated by proficiency level.

Table 3. Descriptive statistics of written production (token count)

Proficiency Level	*N*	*M*	*SD*	*SE*
A1 (paper)	105	33.17	23.60	2.30
A1 (smartphone)	100	19.70	16.32	1.63
A2 (paper)	125	25.02	15.18	1.36
A2 (smartphone)	123	16.89	15.23	1.37
B1 (paper)	127	19.40	15.32	1.36
B1 (smartphone)	125	14.26	11.31	1.01
B2 (paper)	94	16.77	10.15	1.06
B2 (smartphone)	97	11.27	12.45	1.26
B3 (paper)	27	13.41	9.03	1.74
B3 (smartphone)	27	10.41	6.53	1.26

There is a clear trend that the mean production of English prose was higher for paper-based participants over smartphone users throughout the entire spectrum of proficiency levels, even as mean production drops steadily overall. This is a key finding which also lends support to strengthen the conclusions found in the previous analysis of RQ1. However, to specifically

address RQ2, a series of t-tests was again run to determine the t-values, statistical significance, and effect sizes of the differences in mean at each proficiency level (see Table 4).

Table 4. Output of t-tests (comparing token counts of paper- vs. smartphone-based groups)

Proficiency Level	*T*	*df*	*p*	*d*	95% *CI*
A1	4.73**	203	< .001	.66	7.86, 19.08
A2	4.21**	246	< .001	.53	4.33, 11.93
B1	3.03*	250	.003	.38	1.80, 8.49
B2	3.33*	189	.001	.48	2.24, 8.76
B3	1.40	52	.168	.38	-1.30, 7.30

* denotes significance at the $p < .05$ level

** denotes significance at the $p < .001$ level

Significant differences in production between paper and smartphone media were found at proficiency levels A1 through B2. Additionally, the t-values for the A1 and A2 participants were both larger than those for the B1 and B2 groups ($t = 4.73$ and 4.21, respectively, compared with $t = 3.03$ and 3.33) and more statistically significant ($p < .001$ for both A groups, compared with $p = .003$ and .001, respectively). Cohen's *d* effect sizes were also larger for the A groups than the B groups ($d = .66$ and .53, respectively, compared with $d = .38$ and .48). The B3-level proficiency group was the only group in the study which did not see significant differences in English production between the two media, although mean production followed the global trend, favoring paper-based composition. However, it should be noted that this group had the least number of participants by far, at only $n = 27$ for both experimental groups, which limits the ability to draw direct comparisons to the other groups which are more statistically robust. Nonetheless, this result reinforces the conclusion that the differences in production between paper-based and smartphone-based EFL learners becomes more pronounced as English proficiency level increases.

5. Discussion

This study was the first large-scale attempt to investigate EFL learners and the differences in their written English production using smartphones versus paper. The finding that using smartphones for English composition led to reduced production should be examined carefully by teachers and program designers, as this may limit students' abilities to fully express themselves and potentially slow their rate of language acquisition. Furthermore, the finding that learners of higher proficiency are influenced by writing medium to a larger degree agrees with the findings of the pilot study (Lee, 2019b), and raises the stakes for students who are operating at the higher end of the spectrum. Although *technology* usually invokes the concept of *progress*, this study argues that in the case of English written production, using smartphone technology may actually hinder language learners' progress.

However, while the results of this experiment indicate that smartphone users naturally tend to produce less English prose than when writing on paper, this does not mean that smartphones cannot or should not be used in the classroom, only that care must be taken when designing writing tasks. In fact, numerous studies have suggested that students are interested in m-learning

and report more confidence when writing with the aid of multimedia tools (Tsai, Kuo, Horng, & Chen, 2012), especially apps specifically for writing (Chen, Carger, & Smith, 2017). Godwin-Jones reminds us that outright banning the use of phones in the classroom is counterproductive, making the classroom "into an even more unreal environment, where language learning is an artificial enterprise" (2017, p. 10).

The data for this study was collected via an unstructured writing task with no time limit or expressed expectation of composition length. One idea for counteracting the tendency of smartphone users to write less would be for writing tasks to include a minimum required word count. This would guarantee parity in at least the volume of text produced, regardless of medium, especially for assignments which do not have a time limit. Of course, *only* accepting one type of media or the other would be an effective way to put all students on the same playing field. Another consideration is the type of writing assignment in question, as it has been suggested that writing type influences lexical sophistication, syntactic complexity, cohesion, and agency (Elgort, 2017). The results of the current study would tend to indicate that more casual writing situations (e.g., forum/blog posts, student-to-student discourse) may be more suitable for smartphone users as these compositions are usually shorter, less complex, and more conversational in nature.

6. Limitations and directions for further research

For many participants, even though they have used smartphones daily for several years, it was the first time they were using them to complete English writing assignments. In fact, most students have never used their phones for any sort of academic assignment, in either language. As this study only collected a single writing sample, it would be insightful to do a follow-up study which collected and examined changes in writings over a longer period. It is possible that a 'practice effect' may be observed, where smartphone compositions would gradually increase in length over time. If so, it would be vital to determine how much practice is needed for students to achieve parity with paper submissions *before* any high-stakes events like graded homework or tests are implemented.

This study revealed statistically significant differences in composition *length*, depending on writing medium. This is merely one metric by which to assess performance, and is by no means the only, or best, one. Future studies may seek to investigate if any differences in CAF exist; particularly, *frequency* (speed of writing) would be particularly salient if smartphones were to be used for timed tests or classwork. Clearly, much more research in this field is needed in order to make the most effective use of m-learning, in a way that does not unintentionally harm the users.

7. Conclusion

This study provides compelling evidence that changing the medium of a writing task has tangible effects on students' writing production, i.e., that students tend to write significantly less on a mobile device compared to traditional pen-and-paper. While prose *length* does not directly equate to prose *quality*, language learners specifically benefit from greater production for a number of reasons (e.g., increased engagement, longer private-speech time, enhanced form-function mapping, greater potential for corrective feedback/engagement with the reader, among others). This study also found that the disparity in volume shows some correlation with English proficiency, i.e., the higher the proficiency, the greater the observed effect sizes. This is a key finding, as course designers may determine that m-learning is more easily integrable into lower-level classes. Regardless, it is strongly recommended that students are given ample practice and time to acclimate to m-learning assignments before any high-stakes events are conducted.

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Fostering cultural competence awareness and dispositions to reach *thirdness* or *decentering* by engaging in intercultural dialogue

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Abstract

The goals of this research were twofold. First, to measure changes in cultural awareness levels between two groups of students in their third semester of a Spanish class. The trained group formed by university students from the USA collaborated with another group of university students from Colombia using Skype. The second aim was to identify attitudes of *decentering* or *thirdness* in the trained group. This group met seven times during a 13-week semester to discuss a variety of cultural topics such as college life and daily routines. The control group addressed the same issues by examining them among members of the same class and answered a pre-and post-self-awareness questionnaire. Mixed factorial analysis of variance (ANOVA) results showed a significant increase in interculturality scores in the trained group. Furthermore, the qualitative analysis of the video recordings, essays, and video chats from the trained group showed dispositions to *decentering* (*thirdness*) or to engage in an understanding process of the other (Kramsch, 1993). This group exhibited attitudes of curiosity and openness during the Skype sessions. Their essays were elaborate; the topics were varied, indicating the experience of productive social interactions. This group also avoided the use of essentialist or static cultural representations of the other in their narratives.

Keywords: Decentering, cultural competence awareness, intercultural dialogue.

1. Introduction

Telecollaboration partnerships are “collaborative approaches to learning where knowledge and understanding are constructed through interaction and negotiation” (O’Dowd, 2016, p. 292). Over the last two decades, these partnerships not only have become everyday experiences in language classrooms, but teachers have also created a diverse portfolio of these experiences. For instance, some educators have used the well-known e-pal in its purest form by inviting a guest speaker to connect with a group of language learners to explore cultural topics. Over the last 10 years, the field has also experienced growth in the amount of research on the effectiveness of these collaboration partnerships, mainly in the area of language learning. However, these studies mostly narrate experiences and measure language gains in one classroom. Few studies use control groups to measure interculturality levels. The following study seeks to add to this body of research by measuring changes in the cultural awareness levels of two groups of Spanish students in their third semester of a Spanish class.

Furthermore, this study explores the trained group potential for decentering. According to Gil (2016), the examination of decentering has mostly remained at a theoretical level. This empirical study will contribute to the scant body of research in this area. One group collaborated with a group of English learners during one semester, discussing a variety of cultural topics. The control group did not work with any Spanish speakers during that semester, and they addressed the same themes in the classroom.

The literature review cites research in the areas of interculturality, thirdness, and telecollaboration partnerships. In particular, it addresses those studies that have used intercultural dialogue as a tool to promote changes in the field of cultural awareness and cultural knowledge.

2. Conceptual framework

The third place – decentering. One of the main goals of language programs is to offer students the opportunity to develop a cultural understanding of the communities that speak the chosen target language. However, more often than not, this cultural understanding turns into individual pieces of information that promote stereotypical ideas about those communities. Therefore, cultural experiences in a language classroom result in the spread of clichéd ideas different from those formerly intended. Kramsch's (1993) term, *third place*, captures the essence of what language classrooms should foster when addressing cultural lessons. This term conceptualizes cultural classroom experiences as a process in the goal to understand the other, not as pieces of information that need to be remembered and memorized. Kramsch defines third place as an "interpersonal process to understand otherness" (Gil, 2016, p. 338). It is a process that entails the avoidance of simplifying cultural representations based on static ideas of the other. The third place allows for variability, flexibility, and changeability in the process to experience and get to know the other from different perspectives. This study uses the terms *third place* and *decentering* as synonyms that indicate a process.

To conceptualize Kramsch's idea of decenteredness within the context of pedagogy, Gil (2016) divides classroom cultural moments into two categories. On the one hand, a teacher can design lessons that emphasize static representations of a culture or what she calls "essentializing cultural episodes" (p. 341) (ECEs). Generalizations, such as Colombians wake up early and Colombians drink coffee, are common and the result of faulty cultural understanding. On the other hand, one can find lessons that facilitate experiences for students to reflect on their essentialist ideas of different cultures or what Gil calls "intercultural episodes" (p. 342) (IEs). The role of the teacher and their preparation are paramount because it is in their hands to design and initiate moments that ask students to reevaluate these assumptions. For instance, if a student concludes that "Colombians drink coffee," the teacher should ask if that statement is accurate and be ready to present solid arguments about the intake of coffee to build a precise understanding, one that shows versatility rather than a set of limited ideas of the other. Byram's (1997) model offers a guide to design pedagogical experiences that aim at the development of intercultural competence that helps the students to move beyond their position of understanding to that third place. His model has five *savoirs* (López-Rocha, 2016, p. 108): knowledge about cultural expressions of the other and oneself; attitudes of curiosity and openness to reconsider previously held ideas of the other; critical cultural awareness of the differences in values among the different cultures; skills to compare cultures from different perspectives without simplifying differences while emphasizing stereotypes; and abilities to discover new knowledge about the other (Byram et al., 2002). These *savoirs* are considered outcomes of intercultural competence. The current study will use this model to explain students' results in the area of intercultural awareness in the different post-meeting narratives.

Gil (2016) offers two orientations that help explain the cultural experiences in a language classroom. The first one is called an *essentialist cultural orientation*. This orientation is present in classrooms that describe culture as a product of simple and static representations of otherness. The cultural piece presented in textbooks is an example of this orientation. Teachers show this information as it appears in the book, and then the teachers ask students to memorize it for the next quiz. This orientation does not foster third place experiences.

On the contrary, these trivial descriptions help form stereotypical images of the other. The second is the *intercultural orientation*. In classrooms that foster this orientation the teacher, and the student are active participants in the co-construction of understanding the target and their own cultures. They engage in a dialogical process that welcomes opposing narratives of themselves and the other in their goal to create that third place of understanding. This orientation promotes discursive *fault lines*, i.e., to challenge areas of misunderstanding (Kramsch, 1993). Gil claims that it is in this process of addressing and resolving these areas of misunderstanding that one can foster experiences of decentering.

3. Tellecolaboration partnerships

O'Rourke (2007) divides telecollaboration partnerships into two models: e-tandem and intercultural collaboration. The e-tandem model refers to partnerships that are created with the purpose of creating opportunities to further language learners' linguistic and communicative skills in the target language. The learners create these opportunities that take place outside of formal language classes. "The role of the tutor in the e-tandem model is usually minimal," according to O'Dowd (2016, p. 293). The intercultural collaboration model emphasizes the integration of cultural and linguistic exchanges as part of the curriculum. The teachers are fully involved in the design of these experiences and create tasks that require their students to interact with their international partners to complete them. This study used the intercultural collaboration model and designed three distinct stages to get the most out of the exchange. The first one was the preparation stage. Students created a set of possible questions and practiced the vocabulary related to the theme during several classes before the encounter. The second stage was fieldwork. During the meeting, students had to take notes and engage in conversations that would broaden their understanding of Colombian students and the completion of the required post-meeting tasks. The third stage was the completion of the post-meeting tasks. These tasks focused on the development of a deeper understanding of each other's cultures and the challenging of stereotypes through the use of intercultural dialogues. O'Dowd (2003) defines intercultural dialogue as "a process that comprises an open and respectful exchange of views between individuals and groups with different ethnic, cultural, religious and linguistic backgrounds and heritage, on the basis of mutual understanding and respect, an ability to express oneself, as well as the willingness and capacity to listen to the views of others" (p. 363).

Çiftçi and Savaş (2017) did a qualitative meta-synthesis report on papers published from 2010 to 2015 that researched intercultural gains through the use of telecollaboration. They identified emerging issues and classified them into five themes, and one of those themes was intercultural learning. They stated that most of the studies that addressed intercultural learning used Byram's (1997) inter-cultural competence (ICC) model to analyze their data. They found that the majority of the studies reported different levels of ICC gains. However, many of these studies used fact-based and information-seeking tasks that lacked critical interpretation. Some of these studies (Helm et al., 2012) also supported the idea that conflict among the participants help them increase intercultural awareness.

Schenker (2012) explored changes in a group of six American college students in their knowledge of the German culture and their own culture after participating in a six-week telecollaborative project with 16 German high school students. Their results showed that there was not a significant change in the American students' interest in learning about culture since these students exhibited these attitudes at the beginning of the email exchange. Schenker also used Byram's model to assess American students' ICC through the use of email messages. She found that the students exhibited all the ICC learning objectives from Byram's framework. Angelova and Zhao's (2014) study examined the development of cultural awareness through the use of computer-mediated communication (CMC), such as Skype, email, and digital discussion boards, of two groups of 23 American and 26 Chinese college students, respectively. They found that both groups developed cross-cultural awareness of each other's countries and their own country. Dugartsyrenova and Sardegna (2018) researched the uses and opinions of 28 American, Canadian, Korean, Latvian, Taiwanese, and Russian pre-service teachers on the use of a voice-based CMC tool to raise intercultural awareness. Eleven of the 28 students highlighted the positive experience of learning about each other's culture from direct sources. They stressed the importance of having these experiences since they provided the opportunity to correct stereotypical ideas of each other's cultures. For instance, one of the students, Anna, mentioned how surprising it was to find out that her thoughts about people from Canada were utterly different from what she heard from her Canadian partner. Anna thought all Canadians loved the outdoors. However, her partner did not mention that activity as her favorite.

Most of the studies in the area of intercultural awareness growth in classrooms are generally qualitative or the gratuitous result from studies of other areas of focus, such as students' second language (L2) grammar development. This study offers a mixed data analysis approach to the

growth of intercultural awareness through the use of intercultural dialogue in a telecollaboration initiative. The main research questions of this study are the following:

1. Does the integration of an intercultural model of telecollaboration promote intercultural awareness?
2. What cultural orientation, if any, is reflected in the students' behaviors during the telecollaboration and in their responses to the different post-meeting tasks in their construction of a Colombian culture representation? Does the trained group show more dialogical tendencies than essentialist tendencies?

4. Methods

4.1. Participants and context

The 31 participants were college students in their 3rd semester of Spanish language study (see Table 1). Their Spanish class met three times for 60 minutes during the week for 13 weeks. Both groups used the same textbook and covered the same number of units and topics. Both teachers embraced communicative approaches to language teaching and believe that language learning and cultural understanding are at the center of language learning experiences.

Table 1. Population

N = 31	*Trained Group* *n = 15*	*Control Group* *n = 16*
Gender	Female: 53% Male: 40% Nonbinary: 7%	Female: 69% Male: 31%
Age	Under 18: 7% 18–24: 87% 25+: 6%	18–24: 100%
Race	White: 40% Hispanic: 27% Black: 13% Asian: 13% Multiple: 7%	White: 55% Hispanic: 15% Black: 15% Multiple: 15%
College Year	Freshman: 54% Sophomore: 20% Senior: 26%	Freshman: 76% Sophomore: 15% Junior: 9%

4.2. Treatment

The 15 participants from the experimental group met with 18 other college students from Colombia who were learning English. Both groups were at the intermediate or B1 proficiency level of English and Spanish, according to the Common European Framework of Reference for Languages (CEFRL). These groups met six times during their class time. They spoke for 30 minutes in English and 30 minutes in Spanish. After each meeting, they had to complete a task in Spanish (see Appendix 2). Each task described a set of outcomes to be achieved, an example of three questions to address during the meeting, and a description of the post-task. Two assignments were in the form of written reports, and the final task was a video report. The main discussion topics were personal relationships, Halloween celebration, college students' daily routine, digital stress, and tourism. Before each encounter, students had to prepare a series of five questions about the main themes. The researcher provided a start-up question for each topic. For instance, the start-up question for the theme of relationships was: How would you want to spend a day with friends? After the encounter, each student had to submit a written report about

what he or she had learned, make a comparison, share it with the group using discussion boards, and react to three other member's reports by comparing their experiences in the classroom.

4.3. Data collection and data analysis

The researcher collected data at different points in the semester. The table below describes the stages and tools used for data collection.

Table 2. Data collection tools

Time	Tool	Description	Question
At the beginning and end of the semester	Great Vancouver Island Multicultural Society (GVIMS) cultural competence self-assessment checklist	To measure changes in cultural competence awareness	Does the integration of an intercultural model of telecollaboration promote intercultural awareness?
During the semester	Recordings and field notes of students' six chat sessions with their Colombian peers	To gain insights into students' levels of intercultural communicative behaviors	What cultural orientation, if any, is reflected in the trained group's students' behaviors during the telecollaboration and from their answers to the different post-meeting tasks in their construction of a Colombian culture representation?
	Post-meeting written reports. There were three reports in total.	To explore students' levels of intercultural communication	

Before engaging in the telecollaboration project, the 31 participants answered a demographic data-gathering survey and an adapted version of the cultural competence self-assessment checklist developed by GVIMS at the beginning of the semester. "This tool was developed with funding from the Government of Canada and British Columbia and designed to explore individual cultural competence," according to Western (2017, p. 1). The researcher selected this tool since it reflected Byram's outcomes of intercultural competence, a set of multicultural statements based on attitudes and beliefs, knowledge, and skills, and for its practicality and feasibility. The same students answered this cultural competence self-assessment at the end of the semester to measure cultural competence awareness growth. The researcher used a 4-point Likert scale to rate the students' answers to the 10 statements, 1= Never, 2 = Sometimes, 3 = Fairly often, and 4 = Always. The higher the number, the more culturally competent one is or has become. All analyses were performed using IBM SPSS Statistics 26 (IBM, Armonk, NY, USA). For each question, a 2 (control group and experimental group) x 2 (Test: pre-test and post-test) mixed factorial analysis of variance (ANOVA) was performed with a test as a repeated measure. The teacher with the telecollaboration agreement was designated as the trained group.

The researcher performed a qualitative analysis of both the post-meeting written reports and video reports, the field notes taken during the encounters, and the videotaping of the six meetings. This study used inductive and deductive approaches to data analysis and Byram's (1997) model as the framework to analyze their answers and interpret their interactions during the telecollaboration. The researcher followed Powell and Renner's (2003) qualitative data analysis protocol. First, the investigator and a second reader read and reread the different pieces in order to identify different themes. Both readers met several times to compare notes on each of the data sources independently. After comparing notes, the readers identified the most common topics and organized them by emergent categories. The researcher determined that most of those categories aligned with Byram's (1997) multicultural *savoirs*.

5. Results

5.1. Survey

There was no change in scores from pre-test to post-test for the control group, but scores in the trained group increased significantly (see Figure 1). This ANOVA showed that the main effect of group was not significant, $F(1,28) = 1.51$, $p = .229$, $\eta = .22$. However, both the main effect of test, $F(1,28) = 10.74$, $p = .003$, $\eta = .53$, and the interaction were significant, $F(1,28) = 6.66$, $p = .015$, $\eta = .44$.

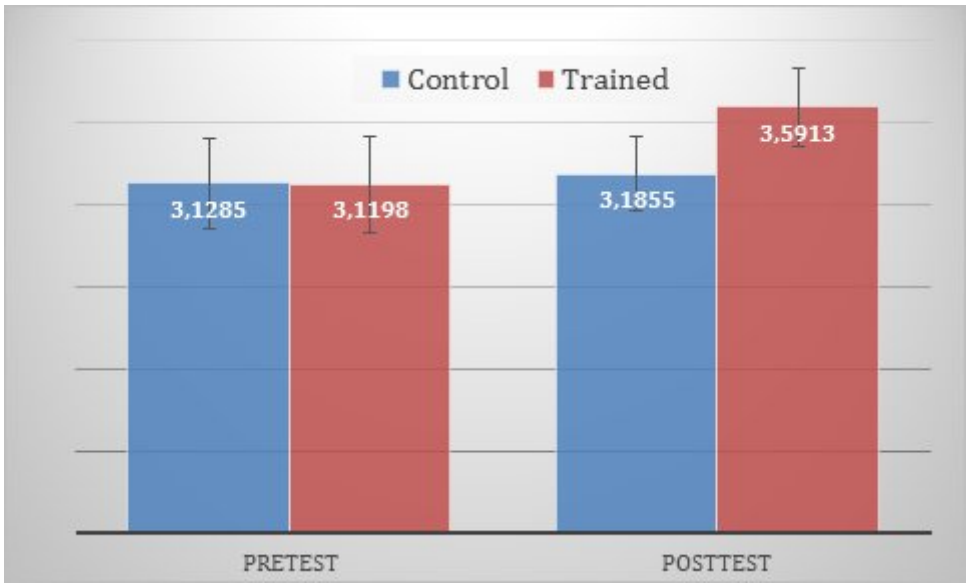

Figure 1. Overall pre-test and post-test results using a 4-point Likert scale. N = 31

Analyses were performed for each question due to missing data—this maximized sample sizes. The table below summarizes the significant findings. As expected, given the low power, few statistically substantial effects emerged, but many practically substantial results were in evidence. Interpretations of effects below are based on practical significance rather than statistical significance due to the sample size.

Table 3. Statistically ($p < .05$) and Practically ($\eta > .25$) Significant Effects for Each Statement

	Groups		**Test**		**Interaction**	
	$p < .05$	$\eta > .25$	$p < .05$	$\eta > .25$	$p < .05$	$\eta > .25$
Question 1: Value diversity	.001	.56	.001	.57	.007	.48
Question 2: Know myself				.32		
Question 3: Share my culture		.32	.001	.28	.037	.40
Question 4: Be aware of areas of discomfort				.28		.28
Question 5: Check my assumptions		.26		.35		

Question 6: Challenge my stereotypes			.007	.48	.016	.43
Question 7: Reflect on how my culture informs my judgments				.33		.26
Question 8: Accept ambiguity						
Question 9: Be curious	.022	.44				
Question 10: Aware of my privilege if I am white						.39

For statement 1, *I value diversity*, there was a significant main effect of the trained versus the control group, $F(1, 28) = 13.11$, $p = .001$, $\eta = .56$, a significant main effect of test, $F(1, 28) = 13.20$, $p = .001$, $\eta = .57$, and a significant interaction, $F(1, 28) = 13.11$, $p = .007$, $\eta = .48$. Scores were higher for the control group and the post-test overall. The interaction was that scores increased significantly for the trained group from pre-test to post-test, but scores did not change for the control group.

For statement 2, *I know myself*, the main effects of the trained versus the control group, $F(1, 28) = 1.62$, $p = .213$, $\eta = .23$, and the test, $F(1, 28) = 3.13$, $p = .088$, $\eta = .32$, were not statistically significant. The interaction also was not significant, $F(1, 28) = 13.11$, $p = .007$, $\eta = .48$. Note that the main effect of the test was practically significant (i.e., large effect size; post-test scores > pre-test scores) even though p was greater than .05.

For statement 3, *I share my culture*, the three effect sizes were moderate to large, but only the interaction was statistically significant: (a) main effect of group, $F(1, 26) = 2.96$, $p = .097$, $\eta = .32$, (b) main effect of test, $F(1, 26) = 2.22$, $p = .001$, $\eta = .28$, and (c) interaction, $F(1, 26) = 4.83$, $p = .037$, $\eta = .40$. Scores were higher for the trained group and the post-test overall. The nature of the interaction was that the control group's scores increased significantly from pre- to post-test, but the trained group's scores did not change.

For statement 4, *I am aware of areas of discomfort*, there were no statistically significant effects, but two effect sizes were of moderate size (i.e., >.25). Results were: (a) main effect of group, $F(1, 28) = 1.08$, $p = .307$, $\eta = .19$, (b) main effect of test, $F(1, 28) = 2.32$, $p = .139$, $\eta = .28$, and (c) interaction, $F(1, 28) = 2.32$, $p = .139$, $\eta = .28$. (*Note: It is very odd that the results for two effects match exactly, but that is correct.)* Scores were higher for the post-test than the pre-test, and the increase for the trained group was significant, but it was not significant for the control group.

Statement 5, *I check my assumptions*, The main effect of group was practically significant but not statistically significant, $F(1, 28) = 2.096$, $p = .159$, $\eta = .26$. The significant main effect of test also was practically significant but not statistically significant, $F(1, 28) = 3.81$, $p = .061$, $\eta = .35$. The interaction was not significant, $F(1, 28) = 0.12$, $p = .733$, $\eta = .06$. Scores were higher for the trained group and for the post-test overall.

For statement 6, *I challenge my stereotypes*, the main effect of group was not significant, $F(1 ,28) = 1.47$, $p = .235$, $\eta = .22$, but the main effect of test, $F(1, 28) = 8.60$, $p = .007$, $\eta = .48$, and the interaction, $F(1, 28) = 6.57$, $p = .016$, $\eta = .43$, were statistically and practically significant. Scores were higher for the post-test than the pre-test. The pre- to post-test increase was significant for the trained group, but not for the control group.

For statement 7, *I reflect on how my culture informs my judgement*, the main effect of group was not significant, $F(1, 26) = 0.12$, $p = .738$, $\eta = .06$, but the main effect of test, $F(1, 26) = 3.15$, $p = .088$, $\eta = .33$, and the interaction, $F(1, 26) = 1.90$, $p = .18$, $\eta = .26$, were practically, but not statistically, significant. Post-test scores were higher than pre-test scores, and this increase was significant only for the trained group.

For statement 8, *I accept ambiguity*, there were no significant effects: (a) main effect of group, $F(1, 25) = 0.78$, $p = .384$, $\eta = .17$, (b) main effect of test, $F(1, 25) = 1.59$, $p = .219$, $\eta = .24$, and (c) interaction, $F(1, 25) = 0.68$, $p = .417$, $\eta = .16$.

For statement 9, *I am curious*, there was a significant main effect of group $F(1, 25) = 5.97$, $p = .022$, $\eta = .44$, but the main effect of test, $F(1, 25) = 1.00$, $p = .326$, $\eta = .20$, and the interaction, $F(1, 25) = 0.17$, $p = .683$, $\eta = .08$, were not significant. Scores were higher for the trained group.

For statement 10, *I am aware of my privilege if I am white*, the main effects of group, $F(1, 19) = 0.41$, $p = .841$, $\eta = .04$, and test, $F(1, 19) = 0.38$, $p = .546$, $\eta = .14$, were not significant, but the interaction was practically, but not statistically, significant, $F(1, 19) = 3.41$, $p = .08$, $\eta = .39$. Scores decreased for the control group, but increased for the trained group.

5.2. Video recordings and post-meeting reports

The students demonstrated two distinct orientations in their narrative and during the encounters: essentializing culture representations and dialogical encounters approaches. This distinction was evident in the language used in their narratives, in the number of details and amount of language used in their reports, and in the behaviors exhibited during the encounter.

Essentialist approaches. There were very few sentences, five in total, that made use of static representations of university students from Colombia and of short and generic descriptions of their international peers. For instance, Student #9 concluded that "the easiest way to make friends in Colombia is by being nice." Student #16 described her peers in a two-sentence paragraph that included the peers' names, where they were from, what they studied, and where they lived: "Carlos is from Cali. He studies at Javeriana University. He likes to run." This information was reflected in all three of her written reports with three different people. Furthermore, these two students remained silent during the conversations. Their engagements were short, and they did the minimum required to complete the assignment.

Dialogic encounters. The majority of the students wrote more elaborate narratives that reflected a tendency to decenter and to engage in richer dialogical encounters. Some of the most common culturally aware behaviors among the 14 students during the telecollaboration sessions were those of curiosity, openness, and a disposition to engage in the various conversations as equals. For instance, American students, mostly, continued to converse in Spanish during the time allocated for this language during the class. Overall, the majority of the students showed high interactivity and engagement.

These students demonstrated the ability to acquire new knowledge of the Colombian culture and cultural practices in real-time communication and interactions (Byram, 1997) by asking questions beyond the ones they prepared in advanced, smiling, acknowledging understanding by saying the word "yes" as a token response or by affirmatively moving their heads to show interest and keep the communication going, and by maintaining eye contact. Alternatively, students were able to explain a significant knowledge of the social processes acquired during the interactions in the post-meeting reports. For instance, in the narrative about personal relationships in Colombia, Student #10 not only provided a general description of his peer, but he also talked about the peer's family, what they usually did on the weekends, and what type of social media his peer used. He also discovered similar likes, such as their passion for tennis: "I told Carlos that I play singles and doubles." Finally, he ended the paragraph by highlighting how much he enjoyed talking to a university student from another country.

Students also demonstrated their capacity for decentering when asked to comment on their classmates' narratives in their classroom management system called Canvas. Student #14 compared his findings and his classmate's findings and discovered that his peer's routine was not that unusual. Furthermore, Student #14 showed the ability to acquire new knowledge without accentuating stereotypical ideas of the other. Notice how Student #14 did not conclude that all Colombians wake up early. On the contrary, he kept this information within the boundaries of

personal experience: “Great video! My partner, Santiago, also wakes up very early to attend classes at his college. It was surprising how early he woke up!”

In sum, one can classify the findings into two categories: behaviors and succinct narratives that exhibited an essentialist approach to the encounters with the other. These types of narratives expressed simplistic views and basic descriptions of Colombian students. The behaviors during the exchanges were those of silence and of not wanting to engage. On the other hand, the narratives of those with an intercultural orientation, that is, with a dialogic encounter orientation, were more elaborate and descriptive. Their descriptions were detailed, lacked generalization, and were personalized. Furthermore, they evidenced attitudes of curiosity, openness, and readiness during the encounters with their international peers.

6. Discussion

Overall, the survey results showed a significant change in the trained (experimental group) compared to the control group. The shift from a 3.1 to a 3.5 score shows a strong correlation between growth in self-awareness and cultural competence and their participation in the cultural exchange sessions. Furthermore, the comparison between the trained and the control groups shows growth in the areas of valuing diversity, awareness of areas of discomfort, influence of culture in their judgment, acceptance of ambiguity, challenging of stereotypes, and knowledge of privileges. The trained group showed attitudes of curiosity and skill in discovery by exploring diverse themes in the conversations with their international peers. This study showed significant changes in the development of intercultural skills, which supports Angelova and Zhao’s (2014) and Dugartsyrenova and Sardegna’s (2018) studies of the impact of intercultural dialogue in the development of cultural self-awareness.

The results per question show that the trained group experienced a meaningful growth in their intercultural skills in comparison with the control group in the areas of valuing diversity, being aware of areas of discomfort when dealing with cultural differences, being aware of assumptions about the other, and in their willingness to challenge stereotypes, being aware of how their cultural perspective influences their judgment about what is normal, and an awareness of their privilege of being white when working with a person of color. These results show that fostering intercultural dialogue has two effects. First, it has a positive impact on the development of cross-cultural attitudes (Byram, 1997). Second, these dialogues foster dispositions that are conducive to improve the students’ capacity to decentering. As Gil noted: “It is necessary to have attitudes of openness and curiosity and, when opening up, the learner can start a movement of ‘decentering’” (2016, p. 338).

Furthermore, these intercultural dialogues support the creation of an intercultural dimension where the others are perceived as individuals with their own identities rather than with static categorizations of these identities (Byram, 1997; Kramsch, 2013). According to Byram et al. (2002):

> *…the “intercultural dimension” in language teaching aims to develop learners as intercultural speakers or mediators who are able to engage with complexity and multiple identities and to avoid the stereotyping which accompanies perceiving someone through a single identity. (p. 9)*

The results show a ceiling effect in some areas. For instance, in Question #1, the control group was already exhibiting a strong disposition toward a favorable perception in the value of diversity at the beginning of the semester. However, the trained group experienced a significant change. Question #2 shows the same ceiling effect for both groups. Question #3 shows a ceiling effect for the treatment group. However, the control group experienced a significant growth, which could explain the positive impact of the teacher on the dispositions of students to share their culture.

The statistical results also support Byram’s (1997) intercultural competence outcomes observed during the exchanges and in the students’ written reports. The students exhibited a positive disposition toward diversity by attending every Skype session, by displaying high levels of

engagement during the encounter, and by expressing how valuable this experience was for them and a desire to visit the country. For instance, Student #3 revealed that she would love to visit Colombia and her newly made friend David.

The absence of essentializing culture representations of Colombian university students was reflected in the lack of stereotypical descriptions. The trained group also showed a significant change in being aware of areas of discomfort and white privilege.

After an inductive analysis of the qualitative data from the video observations and written reports, the researcher concludes that students showed minimal essentialist approaches in their answers to the tasks and during the conversations with their international peers. Even though the instructions for completing the tasks used generalizing language, their descriptions and comparisons were performed at the individual level. For instance, the Halloween report asked students to find out information about how Colombians celebrated Halloween. Their statements had language tailored to the unique experience:

Today I made a new friend, David. David studies at a university in Colombia. He takes classes on science because he wants to work at a hospital. David loves eating empanadas with lettuce and tomato. His favorite movie is Maze Runner, and during the summer, he likes to read books and spend time with friends. He also works. (Student #14)

The majority of the students exhibited an ability for decentering. This was shown by the absence of essentializing cultural representations in their reports and the presence of dialogic encounters or intercultural episodes; the use of elaborate paragraphs with full details about the conversations; the use of comparing by keeping these comparisons distinctive for each individual; mixing comparing sentences about themselves and about their peers; and demonstrating attitudes of curiosity and openness.

First, this group of students did not exhibit essentializing cultural representations in their reports. Most of their descriptions lacked simplistic depictions of their peers' culture. Their written essays described experiences at the individual level rather than generic descriptions of the culture. For instance, Student #1's essay about personal relationships reads:

> *Carlos thinks that the place to make new friends is in high school. There, you meet people that share the same interests. I thought that it would be better to meet people out of the school. Carlos and his friends listen to music together. Carlos has a friend he does not like too much because this friend thinks that listening to music is boring. Carlos and his friends surprised me as well as my friends.*

The use of their peers' names and specific personal pronouns in their reports was widespread, which could indicate readiness to engage with the other "without seeking out the exotic of the profitable" (Schenker, 2012, p. 467) and without overgeneralizing. In this piece of an essay, Student #1 relativizes his perception of the best places to meet new people by acknowledging a position different from his own without trying to negate the validity of the peer's opinion. Of the 18 students, 15 paragraphs reflected this type of elaboration and mostly in the second report about Halloween and their video about their peers' daily routine. Student #6's report about Halloween states:

This Wednesday, I had the opportunity to talk with a new student from Colombia. His name is Fernando, and he studies architecture. It was interesting. Fernando is very different from Carlos, the other student from the first Skype meeting. They don't have the same interests. Fernando likes to practice MMA and boxing. He told me that he was not going to celebrate Halloween because he had to build some scaled models for his class. But, he said that Colombians celebrate and dress up. The kids ask for candy. We also talked about life in his city, Cali. He said it is a big city. It takes him two hours to go from north to the south side of the city.

Student #6 shows attitudes of self-awareness and co-construction of a third place by acknowledging previously held assumptions about other Colombian university students based on

his first encounter with Carlos. This attitude was similar to Anna's belief transformation about Canadians from Dugartsyrenova and Sardegna's (2018) study. Anna thought that Canadians loved the outdoors. However, when she had the opportunity to talk to a Canadian, she realized that her perception of a Canadian was not accurate.

Furthermore, Student #6's essay reflects the engagement in a dynamic conversation by the different topics that were addressed during the meeting. Both students talked about general likes and dislikes, the Halloween celebration, and challenges of living in Cali.

The different essays facilitated spaces for dialogical encounters that fostered dispositions for the development of interculturality. Some students were able to engage in discursive *fault lines*, such as Students #1 and #6, where they encountered narratives that would challenge their assumptions about better places to meet new people or by testing the formation of fixed attributes of a Colombian university student.

These essays also provided spaces for cultural comparisons that the literature cites as one critical skill that facilitate the co-construction of a third place (Byram, 1997; Dugartsyrenova & Sardegna, 2018; Kramsch, 1993). The pieces reflected two different styles of making comparisons. Some students wrote two separate paragraphs. One paragraph was about their peer, and another was about themselves. For instance, Student #3 described Halloween celebrations from the peer's perspective by saying that "Ronal celebrates Halloween by dressing up, going to parties, and listening to music." Then, Student #3 continued describing what she typically does to celebrate Halloween and by accentuating similarities. For instance, she said, "I also wear costumes and go to parties on Halloween." This type of fragmenting or separating the information about each other was common among the students that did not show signs of engaging in dialogical encounters and used essentializing representations to describe cultural details. Student #13 also showed this separation of herself and her peers by talking about her international counterparts and omitting particulars about herself.

> *Last week I talked to two Skype peers. Daniela is 18 years old, and Daniel is 21 years old. They asked me about Hallowe'en and I asked them about their daily routine. Both of them have short night routines and long morning routines. Both of them get dressed before getting breakfast. Both take showers in the morning and both have breakfast at the university.*

The most common style of making comparisons was by combining and contrasting the narrative of Halloween. Their essays show the ability of the students to position themselves close to the other as equals without isolating each other's narratives, but rather by combining them. For instance, Student #4's video about comparing daily routines stated:

> *…Ana Maria likes to read, play with her pets, and exercise. She also sings. I like to play the piano and the organ. Her favorite movie is Diary of One Passion. Mine is The Avengers. Rice, beef, and salads are her favorite meals. Her favorite subjects are psychology and psychoanalysis. She said that she gets up at 4:30 a.m. because at Universidad Javeriana classes start at 7:00 a.m. I get up at 6:30, and then I leave for Rider. My classes start at 9:00 a.m. She uses cash instead of a credit card. I use a debit card more. Both of us like to go shopping for clothes and shirts.*

Student #14 embeds both routines in a way that exhibits a closer proximity between the two in a dialogical encounter. Student #14 is able to come closer to his peer without trying to achieve areas of commonality and respecting each other's individualized experiences.

Discursive fault lines were not common in the narratives of this group. There were only two examples in all the pieces evaluated in this study. One explanation for the lack of challenging statements of cultural representations is the lack of language proficiency. Since they had to write their reactions in Spanish, their language skills did not allow them to explore these differences at a deeper level.

7. Limitations

There are some limitations to this study. One is that the control and the trained groups had different teachers. It was not possible to control this variable, and the level of teacher influence in the ANOVA results was not measured. A second limitation is that the researcher was not able to gather qualitative data from the control group due to differences in the writing assignments. A third limitation was the lack of technology to have the ability to record the dialogues in English and Spanish, which could have provided more abundant data. Finally, the level of language proficiency could have impacted the levels of involvement during Skype sessions. Those with limited Spanish might not have been able to engage at the same level as others with a higher level. The different levels of proficiency could explain why the elaboration of the narratives was more straightforward than others. Future studies could focus on the correlation between different proficiency levels and the skills to decentering.

8. Conclusion

This study supports the impact of telecollaboration initiatives in the development of cultural competence awareness. The ANOVA results of the survey show that the trained group experienced meaningful growth in knowledge skills and cultural self-awareness compared with the control group. These results confirm the value in using intercultural dialogue to increase levels of self-awareness. The qualitative analysis revealed that the trained group exhibited skills for decentering and ability to reach a third place by their attitude to engage in dialogical encounters and by avoiding essentializing cultural episodes. Language classes must design pedagogical experiences that foster the students' capacity for decentering, even starting as soon as in the first year of language study. It is imperative that language classes provide spaces, so students engage in crossing discursive fault lines to help them develop a more diverse cultural understanding of the other.

Institutions of higher education must be invested in providing more opportunities for cultural exchanges to support their mission of creating a more welcoming environment for a diverse student population.

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Appendix

Table A1. Survey.

Awareness	Statements	Never	Sometimes/ Occasionally	Fairly Often/ Pretty Well	Always/ Very Well
Value Diversity	I view human difference as positive and a cause for celebration.				
Know myself	I have a clear sense of my own ethnic, cultural, and racial identity.				
Share my culture	I am aware that in order to learn more about others I need to understand and be prepared to share my own culture.				
Be aware of areas of discomfort	I am aware of my discomfort when I encounter differences in race, color, religion, sexual orientation, language, and ethnicity.				
Check my assumptions	I am aware of the assumptions that I hold about people of cultures different from my own.				
Challenge my stereotypes	I am aware of my stereotypes as they arise and have				

	developed personal strategies for reducing the harm they cause.				
Reflect on how my culture informs my judgement	Perspective influences my judgement about what are "appropriate," "normal," or "superior" behaviors, values, and communication styles.				
Accept ambiguity	I accept that in cross-cultural situations there can be uncertainty and that uncertainty can make me anxious. It can also mean that I do not respond quickly and take the time needed to get more information.				
Be curious	I take any opportunity to put myself in places where I can learn about differences and create relationships.				
Aware of my privilege if I am white	If I am a white person working with an aboriginal person or a person of color, I understand that I will likely be perceived as a person with power and racial privilege, and that I may not be seen as "unbiased" or as an ally.				

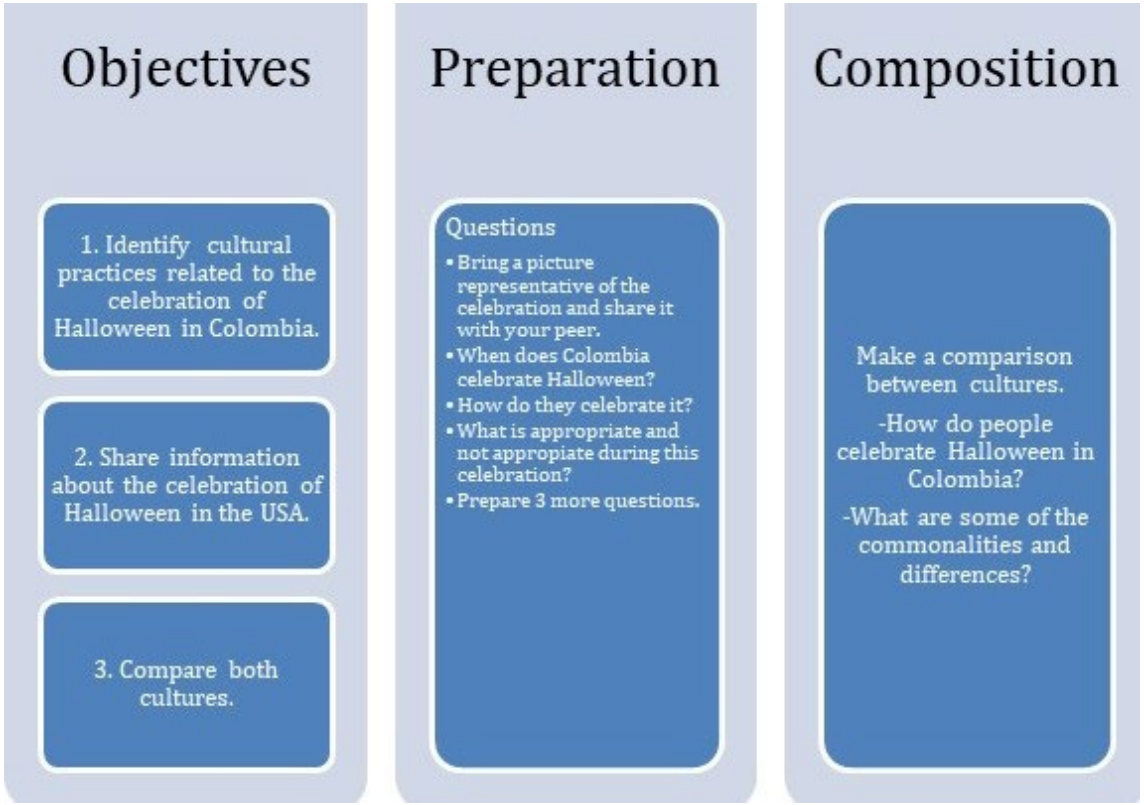

Figure A1. Example of a task.

Podcasting as a tool to develop speaking skills in the foreign language classroom

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Abstract

It is essential for foreign language learners to have adequate opportunities for speaking in order to enhance the acquisition of oral communicative competence. Although research over the last few years has dealt with the potential of podcasting for the development of oral competencies, little has been done towards its application in the *improvement* of speaking skills or the *correction* of pronunciation. This article presents experiments with podcasts developed in French foreign language classes over the course of ten years. The results obtained relate to the following three aspects: firstly, selection and analysis of the available tools fostering greater oral activity and effective correction of pronunciation; secondly, the quantification of spoken language according to the actual duration of the podcasts, as well as preparation time estimated by the students; finally, the evaluation of spoken language using certain indicators of improvement of pronunciation.

Keywords: Podcasting, speaking skills, pronunciation, foreign language acquisition.

1. Introduction

This article illuminates experiments carried out with podcasting and social media in 'French as a foreign language' classes (FFL) at the University of León in Spain. The authors have worked with these tools for several years in order to develop speaking skills and improve the pronunciation of students of French. It is the authors' belief that competency in speaking, frequently neglected or even forgotten, will gain more importance, thanks to new media, with respect to other competencies.

Written and oral comprehension competencies are predominant tasks in learners' classrooms and social media. We believe that speaking skills and pronunciation practice must gain ground in both of the aforementioned areas. It is therefore necessary to quantify spoken language, easily done by measuring the true duration of an audio recording or podcast. However, to understand all aspects of spoken language, self-assessment questionnaires completed by the learners will also be analysed.

Finally, we will evaluate each student's spoken language qualitatively. For this, we will analyse several indicators of pronunciation improvement which can be measured with the help of the recordings or podcasts. The correction of pronunciation, a further often-neglected practice in language learning, can benefit from the use of podcasts in the teaching of a foreign language, thereby reversing this tendency. Audio recordings help the teacher in evaluation, and, at the same time, increase possibilities for learners to become aware of their phonetic errors, apply correction techniques and collaborate with other learners.

2. Literature Review

The terms 'podcast' and 'podcasting' (a blend of *Pod* – from *Apple iPod*– and *broadcast*) refer to a digital audio file (generally in MP3-format), as well as a system of distribution or syndication on the Web: RSS (*Really Simple Syndication*).

The use of podcasts for language teaching was broached by various authors as well as in bibliographical reviews (Lomicka & Lord, 2011; Burston, 2013; Hassan & Hoon, 2013). Many studies center on technical aspects of creation and distribution, use of the tool and, naturally, authentic materials, which podcasts can provide in a foreign language class (Godwin-Jones, 2005; McCarty, 2005; Meng, 2005; Stakes and Al, 2005; Stanley, 2006; Young, 2007; Gromik, 2008; McBride, 2009; Abdous and Al 2009; Fareed, 2010).

Several authors have pointed out that the use of podcasts for foreign language learning favors interaction and collaboration among students, as well as the acquisition of intercultural and socio-constructivist competencies (Petersen & Divitini, 2005, Dervin (2006); Ducate & Lomicka 2006, Rosell-Aguilar 2007; Sun, 2009; Fareed 2010; Chan et al., 2011; Jain & Hashmi, 2013).

Research work so far has demonstrated the importance of podcasting for the development of the following linguistic abilities: mastery of grammar (Istanto, 2011), knowledge of vocabulary (Borgia, 2010; Putman & Kingsley, 2012) and oral comprehension (O' Bryan & Hegelheimer, 2007; Lee & Chan, 2007, Schmidt, 2008; Facer, Abdous & Camarena, 2009, Pettes Guikema, 2009; Knight 2010; Hawke, 2010; Li, 2010; Hassan & Hoon, 2012); Rosell-Aguilar, F. 2013; Al Fadda & Al Qasim, 2013; Yeh, 2013; Kohar et al., 2014; Shiri, 2015).

Only a small number of studies has dealt with the application of podcasting for pronunciation improvement and speaking skills (McQuillan, 2006; Sze, 2006; Sathe & Waltje, 2008; Ducate & Lomicka, 2009; Tomé, 2009, 2011). McQuillan (2006) and Travis & Joseph (2009) proposed several speaking tasks, e.g., classroom presentations, audio diaries, interviews with native speakers, responding to questions, spontaneous talks, as well as expressing and justifying opinions. Sze (2006) concluded that oral expression activities in podcasts could help to improve pronunciation and intonation. Sathe & Waltje (2008) used iPods as mini-language-laboratories so that students could train their competencies of oral comprehension and production. Lord (2008) worked with audio recording tasks (tongue-twisters, reading and personal reflections) to improve the pronunciation of students in a phonetics course. Ducate & Lomicka (2009) examined the effects of the use of podcasts to improve pronunciation competencies as well as the resulting changes of attitude in students in a foreign language course. Lomicka & Lord (2011) highlighted three main uses of podcasting by teachers, with the following percentages: 41.10% for listening practice, 23.29% for speaking practice, and 12.33% for pronunciation practice. Tomé (2009, 2011) underlined the importance of podcasts for the development of speaking skills and pronunciation correction in several French courses as well as in inter-university telecollaboration projects. Fitria et al. (2015) observed important differences in the acquisition of competencies in oral comprehension and production among students who worked with podcasts, and those who did not.

3. Research questions

This study investigates the following research questions:

1. Which recording and social media (podcast) tools have been the subject of research regarding the development of students' speaking skills?
2. How can students' spoken language be measured quantitatively?
3. How can students' correction and pronunciation improvement be evaluated in this type of oral production?

4. Materials and methods

4.1. Participants

The students who took part in this research were enrolled in *Lengua Francesa I* (French Language I) (6 ECTS), one of the required courses for *Filología inglesa* (degree in English) at the University of León. The course took place (3 hours per week) from March to June, from 2005 to 2015, with an average of 35 students in each group. The course was designed for beginning students (A1 Level of the Common European Framework of Reference for Languages, CEFR).

The textbooks used were *Le Nouveau Taxi 1!* (Capelle & Menand, 2009) and *Cahier de prononciation française* (Duflot & Tomé, 2005). The syllabus can be consulted online in the bibliographical reference: *Guía docente de la asignatura Lengua Francesa I*. From 2005 to 2010 the students took part in two inter-university telecollaboration projects: the León-Grenoble project and the León-Lille exchange project.

4.2. Tools

For the creation of podcasts and the recording of oral work three methods were proposed to the students, of which the first was especially recommended by the teacher: A) social networking apps for recording audios (*PodOmatic*, *Jamglue*, *Twaud.io*, *AudioBoo*, *Soundcloud*); B) telephone and mobile device apps for recording audios; C) PC and browser-based audio recorders (*Windows*, *Audacity*, *Freecorder*).

Each student's audio recordings were stored on easily-accesible online platforms or podcast-sharing communities such as *Podomatic*, *AudioBoom* and *Soundcloud*. Each sequence of oral production was identifiable by a clear and concise title based on the teacher's designation: *Leçon 2 Exercice 1*; 2CO L5 E1 (= *Second correction Lesson 5 Exercise 1*); *Taxi Leçon 8*; *COL Sofia & Monica L3 E1* (= *Pairwork students Sofía and Mónica Lesson 3 Exercise 1*); *Echauffement Estefanía* ; *TL20 Avec EA, AC et E Final* (= *Taxi Lesson 20 with vocal warm-up, autocorrection and final warm-up*). Figure 1 (see Appendix C) shows a unit of speech recording in a student podcast.

When selecting and testing platforms and social networks for podcasting the following criteria were stipulated:

- Integrated microphone for the recording of audio sequences.
- Ease of publication of students' speech recordings.
- Space for storing each student's work, which constituted their work for oral evaluation.
- Easy and dynamic access to podcasts by teacher and students.
- Possibility for the learner to decide if a podcast was public or private.
- Enhanced collaboration among students (mutual listening, comments, corrections and joint creations).

Between 2005 and 2015 the following podcasting tools were tested:

Podomatic is a website for audio blogs which allows the recording of podcasts accompanied by written messages; it combines a Web microphone and an editing and publishing system like the ones found on blogs. An example is the *Audio Notebook FLE 2005-06 (http://campus6.podomatic.com*), an audio blog by the 2005-2006 French class, which represents the first podcasts of spoken language in history within an educational context of language learning.

The content management system (CMS) Loudblog was used to manage *the Audio Blog – FLE Virtual Campus*, installed on the León University server from 2005 to 2009. Each written message could be accompanied by an audio file, the "comments" function making it possible to deposit audio files with the voices of the students.

UStream is a live video broadcasting community, which makes the retransmission of video sequences possible using a simple webcam. This tool was used to link remote students within the framework of a telecollaboration project (*Projet León – Grenoble*) as well as to record video sequences of the teaching activities that the students carried out in the computer room (http://www.ustream.tv/ campus).

Voxopop is a social network which allows the creation of audio conversations in talkgroups. From 2009 to 2011 the students recorded comments and exchanged ideas on current affairs within the framework of speaking tasks proposed by the teacher. They are still available online in the

group *Echanger en Français* (http://www.voxopop.com/group/ea0b3f69-f674-4716-bbe2-d6d9eceb2e2c).

The audio-sharing platforms *Jamglue*, *Twaud.io, AudioBoom*, *Soundcloud*, and *Chirbit* were the most powerful tools in our projects for speaking skills and pronunciation correction. These social networks include a microphone and webcam, a publishing interface and dynamic audio readings. They also make it possible to store students' audio work in an authentic, easily consultable sound book on the Internet. Such platforms take part in the communicative force of the current Web, but at the same time run the risk of disappearing or closing, as was the case with *Jamglue* and *Twaud.io.* Table 1 shows the history of the use of these podcast hosting services for the period 2007 to 2015.

Students' podcasts and audio recordings are available online at *Oral FLE Prononciation*, a data base containing the speech recordings of learners of French as a foreign language who belong to the *Projet FLENET* of the University of León. Under the heading *Audio-visual files – weblogs, podcast and networks*, each school year's podcasts, organized into files, can be consulted as a whole (for example: *EtuPodcasts2014*), or individually by selecting recordings including vocal warm-ups, reinforcement activities, autocorrections, drama activities or collaborative student correction.

4.3. Tasks for oral production and pronunciation correction

From 2005 to 2009 the teachers and tutors (telecollaboration projects) prepared teaching tasks which fostered speaking and the recording of audio sequences. These tasks were varied: a presentation of the students themselves or their city/region; CybeRallyes (Webquests) on cultural discoveries in France; discoveries of web tools; exercises on opposing phonemes; reading aloud; exercises related to the correction of pronunciation and collaborative drama activities (see Tomé, 2009, 2011).

Between 2010 and 2015, the teacher proposed a work scheme in which the learner had to record the following tasks and exercises:

- Listening, repeating or reading of exercises from the *Cahier de prononciation française* Duflot & Tomé, 2005) or the textbook *Le Nouveau Taxi 1!*
- Application of reinforcement strategies and articulatory practice related to problematic phonemes for Spanish speakers.
- Learners had to proceed to a second or third repetition after tutoring and assessment by the teacher, using techniques of vocal warm-up and reinforcement related to the highlighted errors. The students had to prepare these recordings starting with vocal training, discovered errors and comments received which they had to write in their notebook or written evaluation.
- Optional creations related to song recordings, reading, drama activities, etc. in which the student had to apply the methods and strategies of pronunciation correction proposed in class (warm-up, self-correction, articulatory effort, etc.).
- Collaborative recordings among learners, which could be of two types: A) help or tutorial for a student experiencing difficulties: the tutor indicated errors as well as reinforcement activities and techniques which the learner had to repeat or correct; B) creative speech such as described previously.

For practice on pronunciation correction various methods by the teacher (explicit correction, recasts, clarification requests, metalinguistic feedback, elicitation, repetition) and by the learner (repetition, incorporation, self-correction, peer correction), and techniques for phonetic correction such as repetitions, reinforcement activities, vocal warm-up, linguistic indications, drama activities, self-correction, collaborative correction between pairs, etc. were drawn from the works of Fox (1979), Lyster & Ranta (1997), Callamand (1981), Murphy (1991), Morris (2005), Engwall & Bälter (2007) and Lauret (2007).

The fundamental errors of Spanish FFL learners are related to supra-segmental factors (rhythm and intonation), as well as to articulatory difficulties, represented by the phonemes [y], /OE/ and the nasal vowels, semi-consonants, the consonants [v], [z], [R] and palatal fricatives which correspond to the written forms "ch" and"j" (Tomé, 1994). When teaching pronunciation to beginners, a simplified and non-normative vowel system was used (Companys, 1981; Leon, 1964; Wioland, 1991; Tomé, 1994).

4.4. Questionnaires

Different types of questionnaires were employed. These were improved and modified between 2005 and 2015. A summary of the models used follows:

- Questionnaire on student ICT competencies and the discovery of podcasting tools in the 'French as a foreign language' class. See Appendix A: *Questionnaire: ICT Skills and Podcasting*
- Questionnaire on the opinion of the students regarding tools, tasks and methods used, as well as their perception of the correction and improvement of their pronunciation. See Appendix B: *Questionnaire: Pronunciation*
- Self-report questionnaire to measure the time devoted to oral production by each learner. It was divided into two parts: A) oral production – timetable in the classroom, where oral interventions by the learner during class hours (answers, reading, consultations, etc.) were assessed. B) Spoken language – audio recordings – podcasts. In this case the time estimated for the preparation of the audio recordings as well as the actual time of verifiable speech in podcasts by each student was assessed. The learner was expected to note the estimated duration (minutes, seconds) of their spoken language by completing the different boxes referring to weeks and months in the self-report questionnaire. See: Appendix C: *Self-report questionnaire on the Student's Spoken Language*

4.5. Legal aspects

In order to guarantee the various student rights in the use of podcast hosting services and social networks the teacher proposed a Charter or Convention, to be signed by students, in which the following points were specified:

- Dangers, rights and obligations when taking part in a social network.
- Risks and rights with respect to the recording of podcasts in public sites.
- Awareness of the use of social media in an educational context.
- Exclusive use of audio files for teaching or research purposes by the teacher.

5. Results

5.1. Use of podcasts

Table 1, *A History of Podcasts Used in the Research*, lists podcasts and social media used between 2005 to 2015. All these tools enabled the authors to suitably carry out the various teaching tasks as well as the work scheme of spoken language and pronunciation correction. The platforms *Jamglue* and *Twaud.io* closed down, and *AudioBoom* did not allow accessing podcasts publicly in 2015, so that the teacher recommended using *SoundCloud* and *Chirbit*.

According to the selection criteria listed in section 3.2. we regard the following podcasts as the most effective and powerful: 1. *AudioBoom,* 2. *SoundCloud,* 3. *Twad.io.* Those most used by learners were: 1. *AudioBoom*, 2. *Twad.io,* 3. *Jamglue*.

The assessment of podcasts by students was positive, both with respect to their use and to the questionnaires proposed. They considered these tools to be easy to use, lively and helpful to them as regards speaking and pronunciation improvement.

Table 1. A History of podcasts used in the research.

	2005-2007	2007-2009	2009-2011	2011-2013	2013-2015
Podcast media	Podomatic Loudblog	Jamglue UStream Loudblog	Twaud.io Voxopop UStream	AudioBoom SoundCloud	AudioBoom Chirbit SoundCloud
Most efficient	Podomatic	Jamglue	Twaud.io	AudioBoom	SoundCloud
Most used	Podomatic	Jamglue	Twaud.io	AudioBoom	Column 6 Value 3
Assessment	Positive	Positive	Positive	Positive	AudioBoom

5.2. Quantification of oral production

Podcasts can contribute to the development of spoken language when using teaching tasks which are effective and conceived for this purpose. But what was determining in our research was the possibility of measuring the time allotted to spoken language by FFL learners utilizing podcasts. Each audio sequence recorded by the student is of a precise duration visible on the interface of the various podcasting platforms. By tallying the duration of each podcast the teacher or learner can sum up the total time of spoken language at any given moment or at the end of the school year.

To be able to measure the entirety of each learner's spoken language two criteria were used:

1. The actual time of the recordings, verifiable with the duration of the student's audio files or podcasts.
2. A self-report questionnaire on spoken language by each of the students, in which they took note of estimated duration of speech in the classroom, preparation time for tasks and exercises, as well as the actual speech posted in the podcasts.

In Table 2, *Quantification of Oral Production*, the percentages and averages of speech by learners are presented for the period 2010 – 2015, which corresponds to the application of the work scheme described in section 3.3.

- Number of recordings or podcasts (average duration: 1 to 2 minutes).
- Average of actual time in minutes by the student, verifiable by the duration of the audio recordings.
- Average in minutes estimated by each student, according to the self-report questionnaire.
- Assessment of this spoken language by learners for the improvement and correction of pronunciation.

Table 2. Quantification of oral production.

	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Oral Production	40-50 podcasts	45-55 podcasts	45-55 podcasts	55-65 podcasts	50-50 podcasts
Actual time	45-55 minutes	55-65 minutes	55-65 minutes	65-75 minutes	60-70 minutes
Estimated time	135-145 minutes	140-150 minutes	140-150 minutes	155-165 minutes	150-160 minutes
Assessment	Positive	Positive	Positive	Positive	Positive

5.3. Assessment of oral production

In order to be able to also assess the qualitative aspects of the entirety of each learner's speech the various criteria and indicators present in the audio recordings were taken into account. These indicators, related to the practice of pronunciation correction, were as follows:

1. Repetitions supervised by the teacher or tutor. When the learner is required to repeat a recording, he needs to locate the error, reflect on it and proceed to drills. The new recording can then be accompanied by a vocal warm-up or reinforcement exercises. It is noteworthy that these supervised repetitions led to an improvement of articulation issues as well as the acquisition of correct pronunciation.
2. Self-reflection by the learner in the discovery of articulatory difficulties and pronunciation errors. The teacher indicates an exercise or sequence in which the learner must find pronunciation mistakes and write them in a notebook or written evaluation. Particularly, those passages of the audio recording which contain autocorrections reveal this factor, and are determining elements in the improvement and correction of pronunciation.
3. Application of correction methods and techniques autonomously or collaboratively. Listening to students' podcasts makes it possible to observe the articulatory effort put into practice in successive repetitions of a phoneme, word or sentence, in exaggeration or reinforcement of a phoneme, noises or onomatopoeias, drills with vocal warm-up or drama activities. All these indicators thus constitute both elements of improvement and correction.
4. Collaborative correction among students. Recordings where students have helped each other imply prior preparation and reflection, the application of effective correction strategies, as well as simulation of interaction between teacher (tutor) and learner. When students produce this kind of recording they are normally able to improve phonetic errors and acquire correct pronunciation.

Table 3, *Indicators of Improvement of Pronunciation*, presents the percentages and averages by student of the various indicators or factors of improvement and pronunciation correction for the period 2010 and 2015. As described in section 3.3., a more homogeneous and exhaustive work scheme for correction of pronunciation was developed here.

Table 3. Indicators of pronunciation improvement.

	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Vocal warm-up	20-30 podcasts	20-30 podcasts	25-35 podcasts	30-40 podcasts	30-40 podcasts
Reinforcement	30-40 podcasts	30-40 podcasts	35-45 podcasts	30-40 podcasts	30-40 podcasts
Self-correction	10-20 podcasts	10-20 podcasts	15-25 podcasts	10-20 podcasts	15-25 podcasts
Shouts, noises, songs	5-10 podcasts	5-15 podcasts	5-15 podcasts	10-20 podcasts	5-15 podcasts
Drama activities in collaboration	15-25 podcasts	15-25 podcasts	20-30 podcasts	20-30 podcasts	15-25 podcasts

In the questionnaires, students indicated their preferences regarding the utility and effectiveness of these methods. As they could select a maximum of 3 in order of importance, the following classification was obtained: 1. reinforcement activities; 2. shouts, noises, songs; 3. drama activities, collaborations.

When these indicators or factors of improvement and correction are part of the learners' audio recordings we have qualitative indications for the evaluation of oral production. The process of pronunciation correction thus achieves its goals and enriches the students' learning experience because they will be able to apply these tools and methods to other courses, tasks and situations of real communication. As observed in the results of the questionnaire on pronunciation, the learners recognized having discovered methods and strategies to correct their own pronunciation, as well as being able to apply them or teach them if they one day became foreign language teachers or professors.

6. Discussion

From 2005 to 2015 we used several audio recording tools provided by various podcasting platforms. The students easily adapted to their functions/functionalities and were able to carry out the various speaking tasks proposed by the teacher without problems. Most appreciated were the advantages of a web recorder as well as a system of immediate publication of audio sequences. The podcasts of each student were stored in the same easily-accessible space, as an aid for tutoring by the teacher, as well as collaboration among learners.

The experiment with the podcasts was thus positive both for students as well as for the teacher, but we were also conscious of certain risks and limitations related to the situation. If a podcasting platform closed or changed its policy of exemption from payment, work could have been lost and it would have had to have been redone in another web space. This occurred

with *Jamglue* and *Twaud.io*, but fortunately only after the work assigned had been completed and evaluated. Learners were therefore advised to make a back-up copy of their audio recordings. Other risks were in relation to the implicit legal aspects regarding the use of social networks and the public character of podcasts. In order to protect students' rights they were suitably informed by a Charter or Convention, and the teacher often advised them to preserve their anonymity by avoiding the use of names or photographs which might identify them.

There are no known studies on the quantification of spoken language in foreign language courses, either in the classroom or with an ICT teaching device. This first attempt is, however, incomplete because, although we could measure the actual duration of the podcasts, the total time devoted to spoken language is an estimate based on a self-report questionnaire. The learners presented an approximation of preparation and speaking practice time necessary before recording their work. But it is very difficult to keep track of time spent speaking in the classroom or at home. It would be necessary to make a sophisticated measuring device available to each learner, such as a stopwatch or speech calculator which saves recordings; but for the time being the technical or human means to set up such a device are not available.

The qualitative evaluation of oral production was based on indicators or factors of improvement of pronunciation, which can be observed in the students' audio recordings. Five indicators were taken into account (1. vocal warm-up; 2. reinforcement activities; 3. autocorrection; 4. shouts or songs; 5. drama activities), though we are aware that there are other methods and criteria to evaluate the improvements of linguistic abilities in foreign language learning (see: North, 1993; Bachman & Palmer, 1996; Puren, 2001; Pekarek Doeler, 2009; Huver & Springer, 2011). In addition, obtaining the students' opinion by means of questionnaires is not very reliable and oftentimes subjective. Like the majority of the tests for competency assessment, our proposal is imperfect, but it takes into account verifiable indicators in the podcasts. The improvement of pronunciation noticeable in the recordings is also subject to certain limitations. Conceivably the learner, pronouncing phonemes and words correctly in a podcast, could make mistakes in other communication or learning situations. We cannot be sure that those methods of phonetic correction put into practice by the student are applied in other contexts, even if they are recorded in a podcast. Nevertheless, we believe that exercising attention and increasing awareness is essential to detecting and eliminating pronunciation errors.

The speech recordings collected in the podcasts are thus fundamental since they are always available in a digital file that can be listened to several times to identify errors, encourage reflection and apply techniques to improve the pronunciation (warm-up, reinforcement, autocorrection, drama activities). In the past, speech was transitory within the framework of the classroom, even if occasionally it could be collected in the form of written notes, or take place in the language laboratory, where it was recorded in an audio cassette that was not normally kept. Nowadays, podcasts make it possible to deploy at will all this teaching potential both for teacher and learner.

7. Conclusions

One of the objectives of our research was the development of oral production using tools, tasks and methods which increased and favored students' speech. The podcasts used contributed greatly to this purpose thanks to their flexibility and effectiveness when recording the learners' voices. Speaking practice was thus more easily integrated into the French foreign language course (FFL), and a more balanced distribution in the exercise of written and oral competencies could be established.

Thanks to the podcasts we could carry out a true quantification of students' speech, which was accompanied by an estimate collected in the form of a self-report questionnaire which measured spoken language at home. Future research will have to improve this second step in order to bring us closer to an exhaustive quantification of the entirety of spoken language.

The qualitative evaluation of spoken language was based on five indicators or factors of improvement of pronunciation, which were observable in the students' audio recordings. It is still

necessary to improve and integrate other criteria to evaluate the acquisition of correct pronunciation. Furthermore, such assessment, somewhat elusive at times, can lead to several grounds for exploration with podcasts and audio recordings, not only for future research work and new teaching practices, but also for students in order to help them make decisive discoveries in their learning process.

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Appendix A

Questionnaire: ICT Skills and Podcasting

1. Which ICT tools and social media do you have experience with?

- Text editor, photos or videos (MSWord, Paint, web editor, blog, etc.).
- Presentation programs (PowerPoint, SlideShare, web page, etc.).
- Web browsers (Firefox, Explorer, Chrome, etc.).
- Social Media (blogs, podcasts, forums, CMS education, etc.).

2. Which digital tools/resources have you used in learning a foreign language?

- Use of audio recorder (MP3, PC/web recorder, mobile phone).
- Classroom activities (exercises, web resources, ICT tasks, etc.).
- Distance learning (courses, online exercises, web resources, etc.).
- Projects or exchanges with foreign students.

3. Which tools, resources and ICT technology have you discovered this year?

- New ICT tools and resources:
- New tasks and technologies:

4. How would you rate the following aspects of podcasts in the classroom? (very positive, positive, acceptable, negative)

- Recorder web:
- Interface and navigation:
- Technical problems or difficulties:

5. What activities have motivated you?

- Listening and recording oral sequences.
- Participating in a blog or social network.
- Participating in a telecollaboration project.

6. How have you interacted with other students?

- Listening to classmates' podcasts.
- Commenting on classmates' podcasts.
- Collaborating with classmates' podcasts.

7. Why did you consult your classmates' podcasts?

- Out of curiosity.
- To learn about their work method.
- To correct my pronunciation.

8. Which educational or virtual collaborative projects did you participate in?

- Teaching platforms or training outside the classroom.
- Telecollaboration projects with other students or another school.
- Educational social networks.

9. How did you find the proposed ICT tasks ?

- easy
- appropriate
- difficult
- other

10. Which legal aspects of ICT and social media in education were you informed about?

- Uses, roles, behaviour and moral rights.
- Students' rights and responsibilities.
- ICT and social media acceptable use agreement (policy) for students

Appendix B

Questionnaire: Pronunciation

1. I am aware of my difficulties of pronunciation:

- I have some problems with certain vowels or consonants.
- I have problems of articulation with certain sounds.
- I have problems related to rhythm and intonation.

2. My greatest difficulties with French sounds are:

- Listening: understanding, differentiation between phonemes
- Speaking: correct pronunciation and articulation of phonemes.
- Problems related to rhythm and intonation.

3. I consider that in my learning of French the most important goal is:

- To acquire good understanding and speaking skills.
- To acquire writing skills.
- To acquire grammatical, lexical or cultural understanding

4. Which activities were most helpful to you for the improvement of pronunciation?

- Individual audio recordings.
- Indications and help by the teacher.
- Activities and help from classmates.

5. How did you find the proposed tasks?

- easy
- appropriate
- difficult
- other

6. Have you improved your skills and knowledge of French in the following areas?

- Pronunciation (a lot – little – not at all).
- Grammar, syntax and vocabulary (a lot – little – not at all).
- Interculturality (a lot – little – not at all).

7. Which resources and tools helped you to improve your pronunciation?

- Web recorders in podcasts.
- Audiovisual documents and online resources in class.
- Participation in telecollaboration projects.

8. What did you find most useful when correcting your pronunciation?

- Listening and repeating sounds or words frequently.
- Receiving help from another person (student, tutor, native speaker, teacher).
- Participating more by talking and making recordings.

9. What methods of pronunciation correction did you find most useful and effective?

- Vocal warm-up.
- Exaggeration of phonemes and articulatory effort (reinforcement).
- Autocorrections.
- Sounds, songs
- Drama activities and collaborative corrections.

10. What memorable moments in the correction of pronunciation do you remember from the course?

- Videos, songs and games.
- Recordings with fellow students and/or Erasmus students.

Appendix C

Production Orale - Emploi du temps en cours

PRODUCTION ORALE		Minutes - Interventions	Autres
En Cours	Février		
	Mars		
	Avril		
	Mai		
TOTAL			

Production Orale - Enregistrements Audio – Podcasts

PRODUCTION ORALE		Minutes - Semaines	Entraînements
Audio Podcasts	Mars		
	Avril		
	Mai		
TOTAL			

Nom :	Prénom :

Figure 1: Self-report questionnaire on student oral production.

Effect of Gamification on students' motivation and learning achievement in Second Language Acquisition within higher education: a literature review 2011-2019

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Abstract

This paper focuses on a fairly new motivational technique, the so-called Gamification, which consists of introducing game mechanics in non-game environments to promote motivation and engagement. By the turn of the 21rst century, Gamification took off in the business field and soon after became an attractive concept for researchers and professionals in education as it appears to be an increasingly popular method to motivate learners. Nevertheless, it is still a nascent field in terms of empirical evidence available to firmly support its educational benefits. This paper intends to shed some more light on this topic through a comprehensive review of literature published in the most prominent journals. The present study is framed within the field of Second Language Acquisition (SLA) in higher education and Computer-Assisted Language Learning, and focuses on the effects of gamified learning environments on student's motivation and learning. A Meta-analysis method was used to explore relevant empirical research published between 2011 and 2019. After reviewing a corpus of 68 papers drawn from the leading databases Scopus and Web Of Science, and from which only 15 could be included in the study, we can point out two main findings: (i) there is still very limited literature in the field of SLA and, (ii) results seem to be predominantly positive in terms of motivation and engagement but only a few studies confirm clear interconnections with learning outcomes. The results suggest a lack of solid correlations between Gamification, motivation and cognitive processes.

Keywords: Gamification, Second Language Acquisition (SLA), Computer-Assisted Language Learning (CALL), motivation, learning achievement.

1. Introduction

Due to the fast development of CALL, second language teachers and researchers have to cope with growing pressure to become more technologically oriented, combined with a growing expansion of mobile applications (Godwin-Jones, 2015). With the proliferation of digital gadgets and apps, new sub-fields of study have been developed in CALL such as Gamification, a fairly recent pedagogical technique that seems to enhance motivation in learning among both digital natives and digital immigrants. In the last few years, digital tools for educational purposes have also proliferated both in formal and non-formal education to engage and motivate students in learning (Quest2Learn, Lego education, Kahoot, Minecraft Education, etc.). As a reflection of the proliferation of games in education, they have been incorporated in a wide range of subjects (Domínguez et al., 2013; Sheldon, 2012).

In language learning, we can also find a considerable number of apps which include game elements and help people improve different language skills (Babbel, Duolingo, Busuu, Memrise, to name a few). Their motivational factor can be linked to what several authors addressed as an essential key to succeed in SLA (Dörnyei & Ryan, 2015; Gardner & Lambert, 1972; MacIntyre, 2002). Considering that game-like activities in education seem to help keep students engaged and motivated in learning tasks, it is no wonder that Gamification has become highly appealing to second language teachers.

2. Research questions

Although noted scholars suggest that gamified environments are powerful settings to boost motivation in learning, their cognitive impact has not been sufficiently supported empirically (Dicheva, et al., 2015; Domínguez et al., 2013; Plass, Homer, & Kinzer, 2015). Thus, our work is aimed at answering the following research questions (RQ), within the frame of CALL:

- **RQ1**: What literature has been produced recently on the effect of Gamification on L2 students' motivation or engagement?
- **RQ2:** What literature has been produced recently on the effect of Gamification on second language learning achievement?
- **RQ3:** Are there any significant results to support the benefits of Gamification on both motivation or engagement and second language learning achievement?

3. Theoretical framework

Although the overall framework of this research is Second Language Acquisition (SLA), we will focus on CALL, which can be considered its technological subfield (Chapelle, 2003). CALL is a relatively young research field and has been frequently re-defined as technology evolves (Beatty, 2013). Chapelle (2009, 2016) and Hubbard (2008) suggest that CALL, combined with the appropriate SLA approaches, provides so many opportunities for language learning that it is undoubtedly enriching for educators who exploit them in their teaching settings. Besides its benefits on students' motivation and engagement, CALL also provides high-quality and authentic linguistic materials, immediate and individualized feedback (Li, 2016).

In education, Gamification would be under the theoretical umbrella of CALL and seems to be worth exploring as an offshoot of Game-Based Learning (GBL). Although Gamification and GBL are two close concepts, some confusion still exists regarding their functioning. While GBL is the use of actual games to achieve educational goals, Gamification would be narrowed to the use of some game design elements (Deterding, et al., 2011) to promote engagement and motivation in any context, whether it's an educational setting or not. Werbach and Hunter (2012) defined it as the use of game design techniques in non-game contexts and added: "basically, any task, assignment, process or theoretical context can be gamified". Within gamification-related concepts in education and professional training, the term Serious Games can also cause some confusion. It is another sub-technique deriving from GBL, but it should also be differentiated from Gamification, since it consists of actual digital games made for purposes other than entertainment, for instance education (Classcraft [1]), corporate training (Business Battle [2]) or institutional instruction (Strike Group Defender [3]).

4. Motivational drives in gamification

Werbach and Hunter (2012b) proposed a framework showing how motivation is triggered by Gamification in three different levels, which they named 'elements': *Dynamics* are produced by *Mechanics* that are in turn generated by *Components*. The following figure shows the description and examples of each one of them in an abstraction hierarchy:

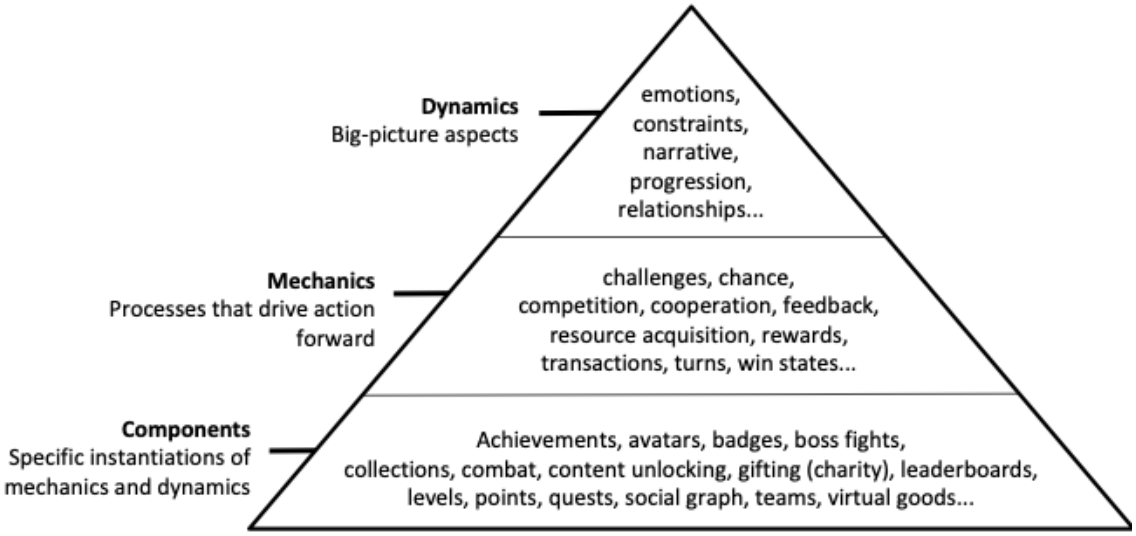

Figure 1. Game elements pyramid from Werbach and Hunter (2012) in For the Win.

Most gamification systems use reinforcement elements (points, levels, badges, leaderboards, etc.) to promote engagement and motivation in users (Subhash & Cudney, 2018; Dicheva et al., 2015). In this sense, the system follows a behaviourist approach, since it impinges on people's behaviour through rewards, reinforcement and immediate feedback at the right time, just like in a Programmed Instruction (Skinner, 1958) aimed at enhancing second language learning.

In their Self-Determination Theory (SDT), Deci and Ryan (2010) defined the most basic distinction between intrinsic motivation, which leads to an action for the sake of enjoyment and interest, and extrinsic motivation, which encourages actions towards external rewards. According to the SDT, human beings show innate needs for *Autonomy*, which relates to self-regulated behaviours; *Competence*, which is the achievement capacity and; *Relatedness*, which involves a feeling of being connected to a community as a safe environment. Following this theory, Marczewski (2019) proposed a framework named RAMP (standing for *Relatedness*, *Autonomy*, *Mastery* and *Purpose*) which integrates the SDT and shows how to motivate different types of players with game elements. Similarly, Zichermann and Cunningham (2011) also described intrinsic motivation drives in gamers, based on Bartle's player types (Bartle, 1996).

Gamification also creates dynamic environments in which people can feel the sense of progress by achieving levels. The idea of progression embeds what Bandura (2012) defined as Self-efficacy in his Social Learning Theory. According to his construct, perceived self-efficacy reflects people's beliefs about their achievement capabilities and consequences of their behaviours. In this sense, positive outcomes such as self-fulfilment and feeling of achievement can boost and sustain intrinsic motivation. The Flow theory also refers to the idea that sustained motivation arises from a balanced relation between a challenge and people's sense of efficacy based on their skills. According to Csikszentmihalyi (1991), people reach the Flow state when they stick to an activity for the sake only of its enjoyment and gratification. This is what Zichermann and Cunningham (2011) refer to as 'engagement loop', a process in which players constantly seek satisfaction through regular rewards. Following this idea, Hamari et al. (2016) explored the correlations between two variables of the Flow theory (challenge and skills), engagement, immersion, and perceived learning. Their study was conducted in engineering disciplines with higher education students and their conclusions showed positive results in perceived learning outcomes, sense of challenge and engagement.

Kapp (2012) states that gamifying activities is a way to incorporate motivating digital game-based learning strategies into the classroom, and provide players (learners) with "the sense of engagement, immediate feedback, feeling of accomplishment, and success of striving against a challenge and overcoming it" (Figueroa Flores, 2015). In order to produce all these motivating

experiences, gamified activities should follow a progressive system with sequenced levels through which players can advance at their own pace.

Along with the spread of Gamification, some researchers also detected little evidence supporting positive effects on both psychological states and cognitive processes, and focussed their work on finding out more about its long-term effects on learning (Dichev & Dicheva, 2017; Hew, et al. 2016; Severengiz, et al., 2018).

5. Methodology

In order to provide clear outcomes, a meta-analysis methodology was used following the six-step review process defined by Rickinson and May (2009): scoping, searching, selecting, analysing, synthesising and reporting.

We first established a strategic search method based on effective scanning of the most relevant literature. The bibliography was retrieved from the two leading international databases: Web of Science and Scopus; the reason for doing this is to ensure high quality standards of the research presented in those articles. We applied a search strategy by introducing different combinations of keywords such as *Gamification, Gamif*, "Second Language" Acquisition, "Foreign language" learning, ESL* or *EFL*. After cross-referencing the publications provided by the two databases, we rejected duplicated results.

The following step consisted of identifying those papers which presented empirical studies. We applied some criteria to eliminate those articles which:

- were only conceptual papers
- were game design/engineering papers
- had the term Gamification mentioned in the text but was not the actual focus of study
- were not conducted with higher education or adult learners
- included participants showing a disability

Table 1. Search procedure and results.

Step	**Procedure description**	**Results from Scopus**	**Results from WoS**
1st	Search using combined Booleans: *gamif*, gamification and «second language", "foreign language", ESL or EFL*	47	50
Papers found		97	
2nd	1st selection excluding duplicates	68	
3rd	Final selection excluding irrelevant literature	15	

Our first search phase provided 97 papers from which we excluded several duplicates. From the remaining articles, we selected the most relevant ones in a second phase. In the third phase, we ended up synthesising and reporting 15 papers, which explored the effects of Gamification on L2 learning. We extracted key content from all the papers and classified it systematically by: authors, date, observed variables, methodology, measuring tools, sample, duration, research questions and results. The following section contains the results obtained after a combined analysis of these key features.

6. Results and discussion

This section aims to answer the three research questions posed in the study:

- RQ1: What literature has been produced recently on the effect of Gamification on L2 students' motivation or engagement?
- RQ2: What literature has been produced recently on the effect of Gamification on second language learning achievement?

All the reviewed studies include experiments, which consist of implementing some self-designed or commercial gamified resource, mainly apps, in second language learning contexts. Practically all of them were conducted with the help of free applications that can be easily accessed or downloaded from the Internet and used whether on a computer or a mobile device. Most experiments incorporated a gamified resource especially created for the study (Berns, et al. & Dodero, 2016; Cardoso, et al. 2017; Liu, et al. 2016; Palomo-Duarte et al., 2016; Perry, 2015), whereas Duolingo and Kahoot were the most popular commercial apps (Bustillo, et al. 2017; Gafni, et al. 2017; Hung, 2017; Iaremenko, 2017; Mateo-Gallego & Ruiz Yepes, 2018; Munday, 2016).

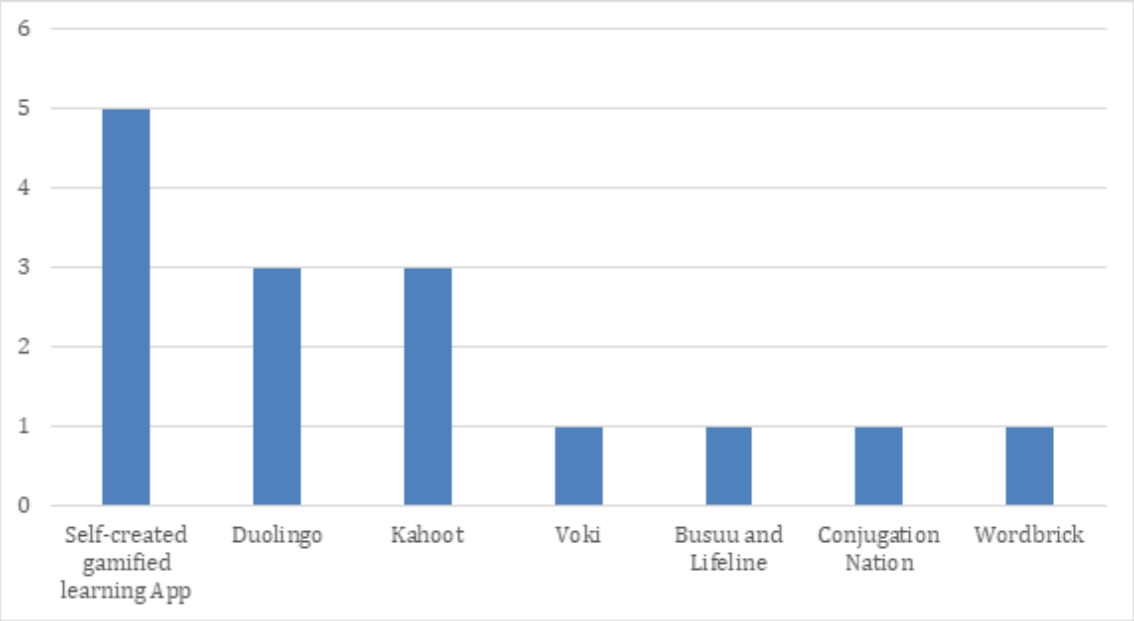

Figure 2. Learning tools used in the studies.

English stands out among the second languages studied. More than half of the studies were performed with students of English (8) and the rest mainly in courses of German (4), Spanish (4), French (3) and Italian (1).

Psycho-behavioural variables seem to be the main focus. This is probably due to the fact that Gamification is often used exactly for that purpose: stimulating psycho-behavioural aspects like motivation and engagement. In fact, almost half of the studies (6) focussed only on psycho-behavioural evidence such as motivation, engagement or attitudes towards the gamified experience (Barcena & Sanfilippo, 2015; Gafni et al., 2017; Iaremenko, 2017; Liu et al., 2016; Munday, 2016; Perry, 2015), five papers were focussed on a combination of psycho-behavioural and cognitive effects (Berns et al., 2016; Bustillo et al., 2017; Castañeda & Cho, 2016; Hung, 2017; Kétyi, 2016) and four were centred just on cognitive results (Cardoso et al., 2017; Mateo-Gallego & Ruiz Yepes, 2018; Palomo-Duarte et al., 2016; Purgina, Mozgovoy, & Blake, 2019).

- RQ3: Are there any significant results to support the benefits of Gamification on both motivation or engagement and second language learning achievement?

From a general point of view, most studies show positive results with a balanced attention on both psycho-behavioural and cognitive variables (11), three are ambiguous and just one showed negative results on learning.

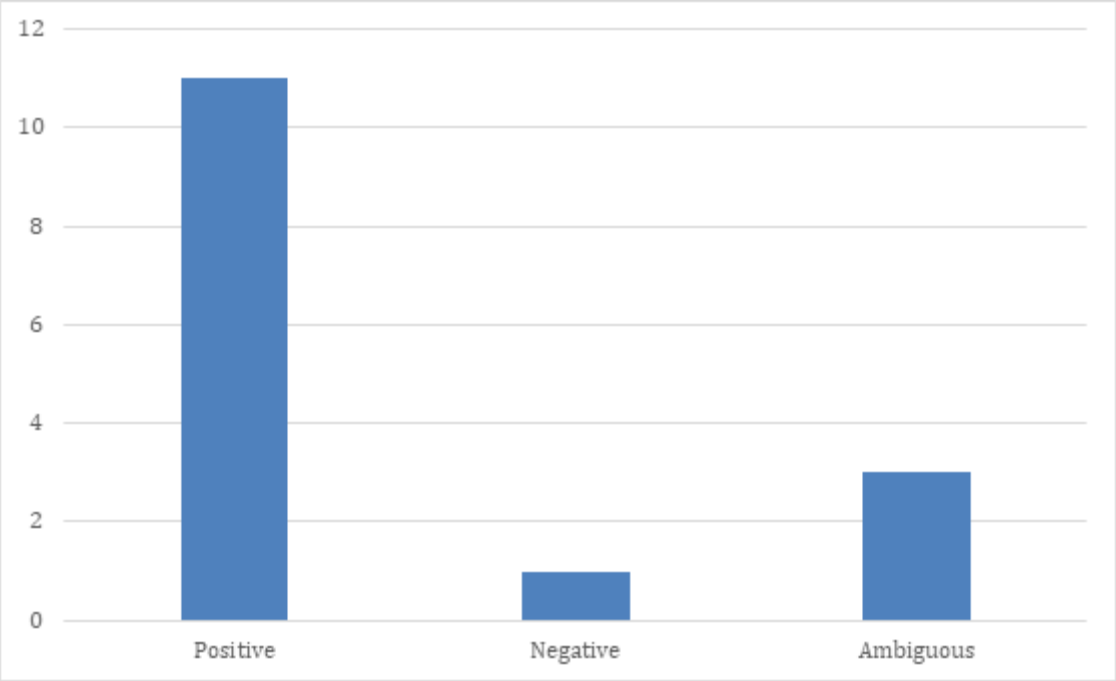

Figure 3. General overview of results.

If we have a closer look at the findings, we can identify different combinations of results but the most common would be centred on: (i) positive results on both learning and students' attitude towards Gamification (Berns et al., 2016; Bustillo et al., 2017; Castañeda & Cho, 2016; Hung, 2017) and (ii) positive results on student engagement (Iaremenko, 2017; Liu et al., 2016; Perry, 2015).

Some researchers reported that participants expressed a sense of challenge and fun using Kahoot (Iaremenko, 2017), and a sense of immersion in an Augmented Reality learning environment (Liu et al., 2016; Perry, 2015). In Perry's study, a self-designed gamified tool (Explorez) was used by students of French at the University of Victoria. Her findings demonstrate that game-based mechanics can be powerful motivators for learners. This author bases her research on a challenging question: *"What if educators could engage learners the way video games engage players?".*

Bustillo et al. (2017) incorporated Duolingo in an A1 course of English and confirmed, on the one hand, a significant improvement in students' listening skills and, on the other hand a positive attitude towards using the app as a learning support. Castañeda and Cho (2016) found that a gamified conjugation app (Conjugation Nation) increased students' confidence while improving their accuracy in conjugating verbs in Spanish as an L2. Their experiment showed a positive attitude of their students towards Gamification, also evidenced in a study conducted by Hung (2017), in which a clicker app (Kahoot) also proved to be beneficial in terms of learning perception. Similarly, Berns et al. (2016) showed positive effects of a gamified tool (VocabTrainerA1) on students' attitudes towards the app. The participants also expressed a high perceived learning by using the gamified learning tool which was in line with positive academic results, specifically in grammar and vocabulary.

Bárcena and Sanfilippo (2015) included avatars in an online Spanish university platform (UNED). In general, their results showed a favourable attitude towards the gamification technique. It made it easier for students to find and learn course-related content online, although a few of them

expressed their rejection as they did not associate "childish" avatars with a formal university learning environment. Gafni et al. (2017) also observed L2 students' positive attitudes towards using Duolingo as a parallel support of their language courses. Although the study was short, students expressed their satisfaction towards the app as a learning enhancer.

Positive benefits on vocabulary acquisition were also evidenced in the study conducted by Palomo-Duarte et al. (2016) who used a self-designed app (Guess it! Guess it!) to gamify an A1 course of German. Positive evidence on learning was also reported by Purgina et al. (2019) who increased grammar achievement by using a gamified digital too (Wordbricks) in an English course.

Kétyi (2016) gamified courses of four different languages using Busuu and Lifeline. After the experiment, the author showed positive results on learning and motivation but could not confirm any correlation between the two variables. Munday (2016) concluded her study with ambiguous results. In fact, students showed a positive attitude towards Duolingo in a basic L2 level (A1) but not in a more advanced level (B2), since they found the app was too limited. Similarly, the study of Mateo-Gallego and Ruiz Yepes (2018) showed inconclusive outcomes when they demonstrated that using Kahoot in an English course helped students decrease their language errors, but did not promote their self-reflection on mistakes.

As the only clearly negative result, Cardoso et al. (2017) demonstrated that using a gamified tool (Prêt à Négocier) in a French course of intermediate level, did not show significant differences on oral skills (comprehensibility and fluency) between a treatment and a control group.

Table 2. Result details.

No. of papers	Authors	Results
4	(Berns et al., 2016), (Bustillo et al., 2017), (Castañeda & Cho, 2016), (Hung, 2017)	Positive both on learning achievement and attitude towards gamification
3	(Iaremenko, 2017), (Liu et al., 2016), (Perry, 2015)	Positive on engagement and motivation
2	(Barcena & Sanfilippo, 2015), (Gafni et al., 2016)	Positive on attitude towards gamification
2	(Palomo-Duarte et al., 2016), (Purgina et al., 2019)	Positive on learning achievement
1	(Kétyi, 2016)	Positive on learning achievement and motivation but with no correlation
1	(Mateo-Gallego & Ruiz Yepes, 2018)	Positive on error correction but negative on students' self-reflections
1	(Munday, 2016)	Positive on attitude towards gamification in level A1 but ambiguous in level B2

No. of papers	Authors	Results
1	(Cardoso et al, 2017)	Negative on learning

Mixed methodologies combining quantitative and qualitative research seemed to be predominant in this research field (Barcena & Sanfilippo, 2015; Berns et al, 2016; Castañeda & Cho, 2016; Hung, 2017; Kétyi, 2016; Mateo-Gallego & Ruiz Yepes, 2018; Munday, 2016; Perry, 2015). There were also a considerable number of researchers who chose purely quantitative methods (Bustillo et al., 2017; Cardoso et al., 2017; Gafni et al, 2016; Iaremenko, 2017; Palomo-Duarte et al., 2016, Purgina et al., 2019), but qualitative research on its own was used in just one study (Liu et al., 2016).

Among those studies including quantitative methodology, five papers (Cardoso et al., 2017; Hung, 2017; Kétyi, 2016; Mateo-Gallego & Ruiz Yepes, 2018; Purgina et al., 2019) out of fourteen included a comparative method using pre- and post-tests with control and experimental groups.

Table 3. Research methodology.

No. of papers	Paper	Methodology	Comparative analysis
8	(Barcena & Sanfilippo, 2015), (Berns et al., 2016), (Castañeda & Cho, 2016), (Hung, 2017), (Kétyi, 2016), (Mateo-Gallego & Ruiz Yepes, 2018), (Munday, 2016), (Perry, 2015)	Quantitative and qualitative	(Hung, 2017), (Kétyi, 2016), (Mateo-Gallego & Ruiz Yepes, 2018)
6	(Bustillo et al., 2017), (Cardoso et al., 2017), (Gafni et al, 2016), (Iaremenko, 2017), (Palomo-Duarte et al., 2016), (Purgina et al., 2019)	Quantitative	(Cardoso et al., 2017), (Purgina et al., 2019)
1	(Liu et al., 2016)	Quantitative	None

The following charts show the duration and the number of participants classified by general criteria. Concerning the duration, we can identify only three studies that covered a course period (four months, sixteen weeks or one semester). The largest number of experiments lasted just one or a few sessions. Three were conducted during two months and two lasted one month.

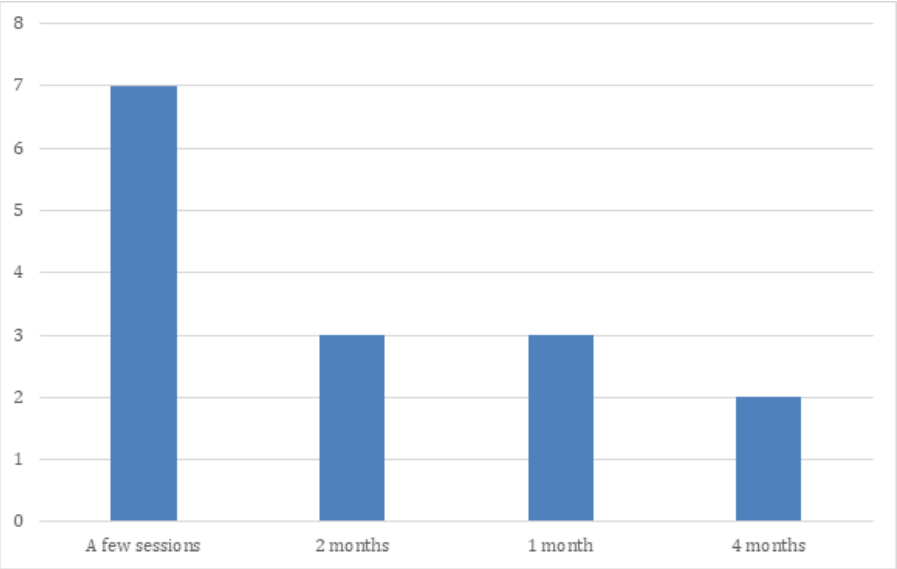

Figure 4. Studies duration.

As for the number of participants, for the sake of simplicity we grouped them in four sizes based on the results: small (3-16), medium (40-94), large (100-120) and very large (273). We can clearly identify a predominant trend in almost half of the experiments (7) which included a considerable number of participants ranging from 40 to 94 students. The smallest range includes four studies with 3 to 12 students. A similar number of papers (3) can be found with 100-120 participants, and the last one is the largest with 273 students involved in the study.

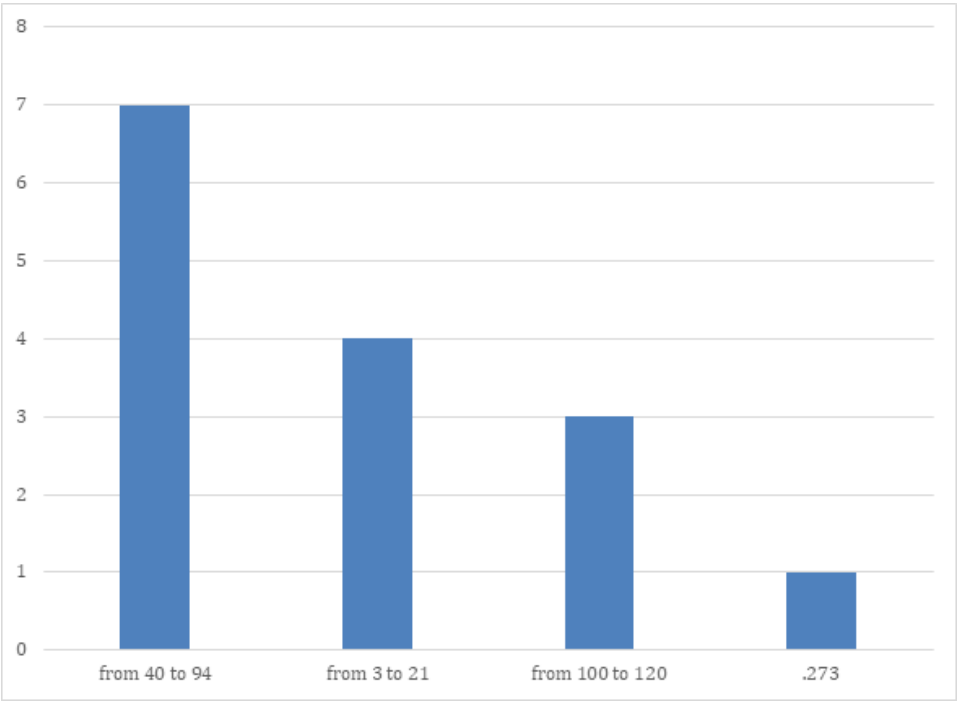

Figure 5. Number of participants in the studies.

After analysing all the papers, we can now recap features from each study that would indicate some kind of limitations from an empirical viewpoint. Besides the very limited number of studies, all of them show some kind of research limitations. Almost 70% of the studies included some quantitative research with no control group. Among all the quantitative studies, 54% lasted less than one month, 31% showed an imbalance between students' gender or between the group

allocation (control vs experimental) and 23% involved small groups of participants. Nonetheless, altogether the reviewed literature provides valuable data to guide researchers and educators keen on using Gamification as a potential booster of second language learning. We hope this paper will spark enough interest among research communities so as to keep on exploring educational benefits of Gamification.

7. Conclusions

Up to now, Gamification has proved to be an efficient technique to boost engagement and motivation but when it comes to education, more research will be needed to provide solid evidence of its benefits both on students' affective states and learning outcomes (Dicheva et al., 2015). The lack of unified discourse among researchers (Hamari, Koivisto, & Sarsa, 2014) shows the need to dig deeper into the effects of Gamification on learning. After a thorough literature search, only a very limited number of papers matched our selection criteria regarding empirical evidence supporting the educational benefits of using Gamification in SLA. This review adds even more weight to the idea that further research should be undertaken to clear up confusing and ambiguous results.

An analysis focused purely on results would show that the use of Gamification with L2 learners is a predominantly positive experience. However, considering the research limitations found in most studies, we should exercise caution, at least until further research has shown clearer results and allows researchers and teachers to reach a general consensus on the role that Gamification should be given in learning contexts.

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Appendix

The complete tables where all the data is displayed can be found clicking on this link: http://eurocall.webs.upv.es/wp-content/uploads/2020/05/Azzouz_Literature_review_tables.pdf

Endnotes

[1] https://www.classcraft.com/

[2] Winner at the 2017 Serious Play Events: https://seriousplayconf.com/2017-serious-play-awards/

[3] MIT news: https://seriousplayconf.com/2017-serious-play-awards/

Integrating Information and Communication Technologies in English for Specific Purposes

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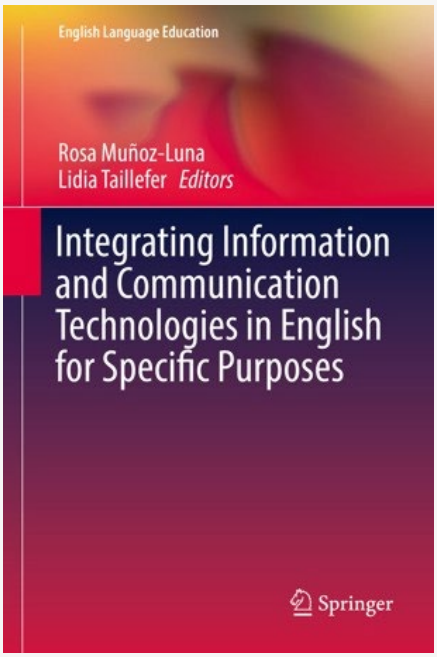

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Rapid developments in information and communication technologies (ICT) in recent years have inevitably affected the nature of learning and teaching processes in general. As a result of this, teachers have been constantly seeking innovative and alternative ways of teaching in all educational settings as well as in the domain of foreign language learning and teaching. However, there still exist teachers who do not feel pedagogically and technically competent enough to integrate ICT in their teaching. There is no doubt that it is of great importance to decide how and when to use technology in pedagogically principled ways. The book *Integrating Information and Communication Technologies in English for Specific Purposes* is for readers and educators who seek pedagogically appropriate ways of integrating technology in the practice of English for specific purposes (ESP), English for academic purposes (EAP), and English for occupational purposes (EOP).

The book consists of three parts and eleven chapters. Each part focuses on different aspects of technology integration in ESP, EAP, and EOP contexts respectively. Part I is comprised of three chapters. Chapter 1 reviews literature related to computer-assisted language learning and ESP. The author also presents some tools about corpora, wiki, computer-mediated communication and web-based materials. The chapter emphasizes five principles for technology integration in ESP as well. The tables presenting teachers' pedagogical beliefs and technology use can help readers understand the relationships between the two better (see. p. 16). Chapter 2 focuses on some basic educational technologies which are commonly used in language classrooms. Some samples are also presented about technology integration in university settings in the USA, Denmark, and Spain. Chapter 3 in this part deals with the importance of blended learning in ESP

education. The chapter also emphasizes online social interaction and criticizes massive open online courses (MOOCs) as not being the solution for ESP educators.

Part II consists of four chapters which are related to EAP. Chapter 1 in this part discusses the importance of the Internet resources that can be used to foster writing in an EAP context. To this end, the authors introduce a Blackboard platform on which teachers and students can share opinions and provide feedback during process writing tasks (see p. 74 for a sample feedback screen). Chapter 2 presents undergraduate students' attitudes toward online management platforms discussing pedagogical consequences. The author of this chapter remarks that online management platforms can provide small group interaction, communication and the online distribution of information. Chapter 3 suggests an extensive listening programme for improving EAP students' listening skills. Podcasts, audio books, online exercises, mp3 and etc. are the main tools on which the chapter focuses. Chapter 4 discusses the effectiveness of Second Life which is one of the simulated 3D learning environments. The author explains how Second Life can help learning English through various samples from the digital environment.

Part III is comprised of four chapters, each dealing with different technology-enhanced practices in EOP contexts. Chapter 1 presents ways of how to adapt free online dictionaries in Spanish learning and teaching environments. The chapter also discusses the criteria for evaluating dictionaries for ESP students (see pp. 135-136). Chapter 2 provides some guidelines to improve the writing or translating competence of scientific texts, such as the use of parallel texts and the comparison of characteristics of those texts in English and Spanish. Chapter 3 analyses the advantages of a blended course and provides some solutions for technological problems regarding the resources and makes suggestions to help students in EOP contexts. Chapter 4 describes how to prepare and carry out an online translation course. The chapter also highlights effective use of virtual platforms and present some technology-based translation activities.

The book is really helpful for both ELT researchers and practitioners who deal with ESP and suggests ways of how to support teaching and learning processes with appropriate technology. Almost all of the issues touched on in the chapters of the book are based on sound and up-to-date research findings. The emphasis of all three domains; ESP, EAP, and EOP, and the samples of technology integration make the book more valuable for educators, researchers, and teachers of English. Overall, the book, with its holistic solutions for overcoming some technological barriers and challenges in the foreign language teaching field, can be a good source for both students and educators who are eager to integrate technology into language learning processes.

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