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The Use of Technology in Second Language Education: Some Considerations to Overcome the Digital Divide

La tecnología y la enseñanza de lenguas segundas. Propuestas para abatir la brecha digital

Alexis Adriana Lozano
Universidad de Guanajuato
Lascuráin de Retana No. 5, Centro, 36000
Guanajuato, Guanajuato
ale.adr2@hotmail.com
Mexico

Jesús Izquierdo
Universidad Juárez Autónoma de Tabasco
Av. Universidad s/n, Zona de la Cultura,
Magisterial, 86040. Villahermosa, Tabasco
jesus.izquierdo@ujat.mx
Mexico

Abstract:

The use of Information and Communication Technologies (ICT) can help teachers implement valuable instructional tasks where learners use the second language (L2) during input and output tasks, integrating various types of technologies, applications, and websites. Often, educational actors would argue, however, that limited access to ICT prevents teachers from implementing ICT-enhanced L2 instruction in the classroom. In this paper, we revisit that perspective through an exploration of three conditions related to the use of technologies for L2 teaching: the digital divide, teacher education, and proper ICT-enhanced task implementation. Building upon a review of theoretical and empirical research on these conditions, we argue that limited access to ICT is not a determinant factor, as teacher education and careful L2 task planning can help teachers maximize the use of the limited resources available in their school contexts.

Keywords: Language teaching and technology; Digital divide; Information and Communication Technologies (ICT); Language teacher education.

***Resumen**:*

El uso de las Tecnologías de la Información y la Comunicación (TIC) puede ayudar a los maestros a implementar valiosas tareas o actividades de instrucción mediante la integración de varios tipos de tecnologías, aplicaciones y sitios Web en las que los alumnos utilizan el segundo idioma. A menudo, los actores educativos argumentarán que el acceso limitado a las TIC impide que los docentes implementen actividades tecnológicas que promuevan el desarrollo de la segunda lengua en el aula. En este escrito se revisa esta perspectiva a través de la exploración de tres condiciones relacionadas con el uso de tecnologías para la enseñanza de una segunda lengua: la brecha digital en segundas lenguas, formación docente e implementación pedagógicamente fundamentada de tareas o actividades tecnológicas. Basados en la revisión de trabajos teóricos y empíricos sobre estas condiciones, se propone que la formación docente y la implementación pedagógicamente fundamentada de tareas de aprendizaje basadas en el uso de las TIC sean los principales medios por los cuales los docentes abatan la brecha digital; es decir, el acceso limitado a las TIC, en sus contextos escolares.

***Palabras clave**: Enseñanza de lenguas asistido por la tecnología; brecha digital; tecnologías de la información y la comunicación (TIC); formación de profesores de lenguas.*

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Introduction

Technology has permeated most aspects of our daily lives. Teaching and learning are one of the areas that have been revolutionized by ICT. We define these as any hardware or software that supports interaction in the digital world. ICT could be computers, mobile devices, applications, online environments, among others (Southern & Tilley, 2000; Chapman & Slaymaker, 2002; Selwyn, 2004). In second language education, ICT have created opportunities for teachers and students to access rich language input, especially in the case of English as a second or foreign language (L2). Golanka, Bowles, Frank, Richardson and Freynik (2014: 70) state that "the personal computer and internet access, have become nearly ubiquitous for foreign language learning."

Due to the potential benefits the use of ICT could imply in language learning, a number of educators and administrators around the world would perceive the implementation of ICT in the curriculum as one of the ends of instruction (Chambers, & Bax, 2006; Hedayeti & Marandi, 2014; Izquierdo, De la Cruz, Aquino, Sandoval & García, 2017). Many researchers, however, would indicate that ICT ought to be regarded as a means to foster L2 education and it could occur at different levels depending on the resources available to teachers and the purpose of its implementation. According to Wang and Woo (2007), the integration of ICT in education could occur at the macro (curriculum), meso (topic), and micro (lesson) levels. These authors explain that the integration of ICT at the macro level implies using ICT in order to promote the learning of the course content as a whole. At the meso level, certain units of a topic are selected in order to enhance students'

learning. Lastly, at the micro level, ICT are used to clarify certain concepts. However, various factors could influence the implementation of ICT-enhanced instruction in L2 classrooms (Harrison & Rainer, 1992; Albirini, 2004; Al-Zaidiyeen, Lai Mei, & Soon Fook, 2010; Hedayati & Marandi, 2014). Among them, there are teachers' and students' attitudes and perceptions, teachers' lack of interest in the use of ICT, institutional logistics, and obstacles that refrain teachers from implementing ICT for L2 teaching, to mention a few (Chambers & Bax, 2006; Kessler, 2006; Lord & Lomicka, 2011; Hedayati & Marandi, 2014). Some educational actors would indicate a factor that strongly hinders the integration of ICT across the various levels of education is the digital divide (see Rogers, 2001; Egbert & Yang, 2004; Izquierdo et al., 2017). In the following sections, we first review the concept of digital divide from different perspectives; then, we argue that the digital divide can be effectively overcome when teachers develop the ability to wisely implement ICT-enhanced L2 instruction through teacher education and careful task preparation. Finally, we discuss some research ideas to explore how teacher education and planning could help teachers change their mind about what constitutes the digital divide and promote effective ICT-enhanced L2 education even in contexts with limited ICT access.

The Digital Divide in Second Language Education

According to Rogers (2001: 96), the digital divide refers to "the gap that exists between individuals advantaged by the Internet and those individuals relatively disadvantaged by the Internet". The digital divide has also been defined as "unequal access to and use of the new media" (van Dijk, 2006). This concept of digital divide can be expanded beyond the Internet, to any other type of ICT (see Golonka et al., 2014). These definitions then claim that there are individuals who are not benefited by the use of the Internet and other ICT resources in an era where these technologies have become visible in most parts of the world. The main cause of the digital divide has been associated with social and economic inequality as Egbert and Yang (2004) acknowledged in

their review of computer-assisted language learning (CALL)[1] research. A lack of access to technology usually means that institutions, teachers, and/or students do not possess the hardware (computers, projectors, tablets, phones, etc.) or software necessary to carry out certain activities (van Dijk & Hacker, 2003). Regarding this, Dooey (2008) suggests that, while there has been a fast increase in technology access, there are parts of the world where ICT are still not systematically available in educational settings (Egbert & Yang, 2004; Chambers & Bax, 2006; Hedayati & Marandi, 2014; Izquierdo et al., 2017). Under this view, limited access only refers to one of the types of access that van Dijk (1999, as cited in van Dijk & Hacker, 2003) identified as "material access." According to this author, material access constitutes only one type of constraint, as the following categorization illustrates:

1. Lack of elementary digital experience ("mental access"): This refers to the knowledge that users should have to understand the basic processes carried out by ICT in order to effectively implement them in the classroom.

2. No possession of computers and network connections ("material access"): Teachers and students have little to no access to software and hardware that could be integrated in their lessons to enhance language learning.

3. Lack of digital skills ("skills access"): Users lack the skills necessary in order to handle the software or hardware that they have access to.

4. Lack of significant usage opportunities ("usage access"): Users might have access to technology; however, the activities or tasks do not provide significant language input. This might be due to a number of factors, including teacher preparation and lesson implementation.

In line with van Dijk's (1999) argument, some researchers acknowledge that, although limited material access to technology is a shared characteristic of public classrooms in developing countries, questions also rise regarding the

use of the limited or many resources teachers do have. In their study, Izquierdo and his colleagues (2017) explored the use teachers give to the technology available to them in public schools in Mexico, which is considered a developing economy. The aim of the study was to examine "which ICTs have become normalized in the regular instructional practices and settings of secondary school teachers of English in public schools" (Izquierdo et al., 2017: 35). Normalization, in this case, refers to the regular use of ICT in the language classroom with the objective of enhancing the L2 experience of the learners through input and output-based tasks. In order to achieve their objective, the authors collected quantitative data through Likert questionnaires and qualitative data through longitudinal classroom observations, school visits, and interviews with principals and teachers. The authors concluded that, although the technological material access represents a constraint in Mexican public education, there were other factors that hindered the use of the limited resources available in the schools: teachers' lack of competence to optimize the use of the limited ICT resources that they and the students had on a regular basis, and "overwhelming regulations and limited access to the facilities, technical support, time investment, and training" (Izquierdo, et al., 2017: 40).

In her 2016 study, Fuchs identified that factors beyond the educational setting itself also limit the use of the ICT teachers have in a developing country. The author conducted a study in order to explore "how English as a second language student-teachers in the US and English as a foreign language student-teachers in Turkey negotiated the design, implementation, and evaluation of technology-based English language learning tasks" (Fuchs, 2016: 1152). The aim was for the student-teachers to telecollaborate through Google Sites, a shared wiki platform. The participants had to complete a series of predetermined tasks designed by Fuchs and a professor in the Turkish university. The project lasted 11 weeks, starting at the end of February 2014. This study is relevant to this discussion regarding the technological divide,

because Turkish participants were not able to communicate effectively with their American counterparts due to a ban on social media by the Turkish government. Fuchs (2016) regarded limited material access to technology as a macro-level challenge that the Turkish student-teachers had to face. The corresponding professor in Turkey claimed that students were not able to maintain the same rate of participation as their American counterparts since the former were only able to access the media platforms under certain political circumstances. An interesting finding in this study; however, was that although American student-teachers had access to social media, they did not take advantage of it to get acquainted with situations that surrounded the L2 education conditions of their counterparts. This finding was revealing as it indicated that rich access to technology, on the American side, did not guarantee the use of ICT for educational purposes.

It is evident then that the digital divide occurs due to reasons beyond material access only. Despite the economical differences among and within some countries, a number of teachers and students have access to some minimal ICT even in public classrooms where learners are expected to learn a L2 in remote locations (Egbert & Yang, 2004; Izquierdo et al., 2017). Therefore, as noted by Egbert and Yang (2004: 280), "rather than lamenting the fact that our tools are not the latest and greatest, we must pay attention to using the tools at hand to students' best advantage while we look for ways to obtain additional resources." Along these lines, Castañeda and Cho (2016) acknowledge that other types of ICT, such as smartphones have become widespread nowadays. Therefore, teachers could rely on the use of these types of technologies to implement a variety of language activities that could be completed using phones and their applications. Nonetheless, as Izquierdo *et al*. (2017) note, teachers disregard this widely spread type of technology to enhance learning in the L2 class, as they often believe that ICT-enhanced education implies the use of sophisticated technological hardware or software that requires little pedagogical preparation on the teacher side.

The Potential of Teacher Education to Overcome the Digital Divide

The evidence previously presented suggests that the lack of technological devices ("material access") is only one of the challenges that teachers face for the implementation of ICT-enhanced L2 education. Despite rich or poor access to ICT, the use given to them may not always be the most appropriate, since some teachers lack the knowledge and basic ICT skills necessary to operate school equipment (Chambers & Bax, 2006; Kessler, 2006; Hedayati & Marandi, 2014). One of the main reasons is that while technology develops fast, a considerable number of language educators do not receive appropriate education regarding the use of technologies (Kessler, 2006; Kuure, Molin-Juustila, Keisanen, Riekki, Iivari, & Kinnula, 2006; Lord & Lomicka, 2011; Hsu, 2016). Therefore, in van Dijk and Hacker's (2003) terms, they lack mental and skill access, which could help them optimize the use of the limited ICT available to them. Lord and Lomicka (2011) indicate that training on the proper use of technology has been neglected in teacher education; and thus, teachers tend to acquire knowledge on the implementation of CALL tasks through conferences, courses, webinars, personal reading, etc. (Kessler, 2006; Kuure et al, 2016). While these options can be informative for teachers, formal CALL education is needed to help teachers develop sound knowledge of practices for the integration of ICT in language education. Moreover, the author also acknowledges that, in formal CALL education, teachers should be taught when not to use technologies as these could interfere with language learning. An example of this is when teachers require ICT and Internet to foster communication, through live chats, wikis or social networks, among students who are in the same space.

Several studies have shed light on the different aspects of teacher education that teachers require for the effective implementation of CALL tasks. For instance, Hsu (2016: 1287) focuses on "teachers' technological pedagogical content knowledge and how such knowledge affects the adoption of mobile-assisted language learning." Hsu (2016: 1287) acknowledges that although the use of mobile devices in CALL has proven

to be one of several "innovative pedagogies […] [which] have created new avenues for teaching and learning that transcend time and space limitations […] making learning more accessible," there still is a gap in ICT implementation in language learning since teachers do not know how to effectively integrate this and other types of technologies in their daily practice. Hsu (2016) then considers that teacher development programs should integrate instruction on how to optimize the use of mobile devices in the curriculum, as teachers and students often have access to smartphones in the L2 class.

Kuure *et al.* (2016: 925) establish that, not only should teachers know how to implement ICT in the L2 classroom, but also that they should have the necessary training and education to become "designers of language learning [tasks] with new technologies." Under this perspective, teacher education should help teachers develop the necessary competencies to work with the available technologies; then, teacher education should also provide them with the knowledge and skills to design their own CALL materials with the available resources teachers and students have. While some may think that this would require teachers to become application or website programmers, Egbert and Yang (2004) argue that is not the case. CALL material creation or design could be as basic as the creation of worksheets using website printouts that teachers could distribute in class (see also Johns, 1994), as we will soon illustrate.

According to Lord and Lomicka (2011), CALL teacher education should also consider the internal and external motivation that teachers hold regarding the use and implementation of ICT L2 tasks. The authors indicate that this focus is necessary as "the pull from the national level and the push from the individual level […] have come together in recent years to encourage language teachers to broaden the repertoire of teaching tools they use" (Lord & Lomicka, 2011: 443). The authors state that major national and international organizations integrate technology in official policies regarding mainstream and language education. They base this decision on "the affordances of technology in this specific setting, the communicative and interactive nature of language,

and the variety of realia and increased input available through technological tools" (Lord & Lomicka, 2011: 444). Educational policies like these put a lot of pressure on teachers (Chambers & Bax, 2006), but come into affect without educational programs, whereby teachers learn how the resources available in their educational settings could be used to meet the expectations of the educational policies.

Another aspect regarding training and development is teachers who are reluctant to the implementation of CALL and who generally receive training from technology enthusiasts (Chamber & Bax, 2006). Therefore, various authors consider that the best way to implement training sessions on ICT would be through collaborative peer work, as opposed to top-down instruction from a technology expert/enthusiast (Kessler, 2006; Fuchs, 2016). Concerning this, Fuchs (2016: 1153) states that telecollaboration, or collaboration through ICT, is a part of CALL training "from which pre-service and in-service teachers can benefit a great deal." Telecollaboration allows for in-service teacher and student teachers to explore the affordances of implementation of ICT in the language classroom. For example, if teachers from different institutions telecollaborate in order to provide their students with communicative tasks, that will contribute to the pupils' language development.

In higher education in the United Kingdom, Chambers and Bax (2006) identified various factors that constrain the normalization of CALL tasks, including CALL training and education. Regarding this factor, some of the teachers interviewed by the authors expressed the need of proper CALL training as they do not perceive workshops to be the best solution, as Kessler (2006) also indicates. In this regard, one would expect that pre-service education would integrate CALL training for teachers to develop the techno-pedagogical competences they would require in their future teaching. With the fast development of new technologies, in-service educators are also in constant need of continuing CALL education that provides them with the necessary knowledge and skills to integrate newly emerging ICT in the classroom. Among in-service teachers, participation in

formal education on ICT for the L2 class might be a difficult goal to achieve, as teachers always fall short in terms of time to evaluate their pupils, attend meetings, create and adapt materials, in addition to their personal lives. However, teachers could overcome these limitations through CALL programs that integrate distance, collaboration and small action research projects (Kessler, 2006; Brudermann, 2010; Fuchs 2016), whereby they can complete further education within their available times.

The Potential of L2 Task Preparation to Overcome the Digital Divide

Granted that some access to technology and teacher education are relevant factors for the implementation of ICT in the L2 class, these do not guarantee that teachers will not face what Van Dijk called lack of significant usage. Izquierdo *et al.* (2017) observed, for instance, that in Mexican public secondary classrooms, multimedia is used to replace aural input which was originally delivered through a tape recorder. Other teachers use multimedia to project images that could be delivered in the printed form. Some teachers provided learners with digital versions of printed materials and considered that this use of technology constitutes effective implementation of ICT in the language classroom. In light of this evidence, the authors argued that ICT are being used to replace regular language classroom materials but are not being optimized to foster L2 learning. In ICT-enhanced L2 education, learners are expected to work on the L2 interactively with the available technologies under conditions that create valuable opportunities through which they treat the L2 for input and output (Chapelle, 2001; Ranalli, 2008; Pérez-Paredes, Sánchez-Tornel, Alcaraz-Calero & Aguado-Jiménez, 2011; Izquierdo, 2014; Gimeno- Sanz, 2016).

This means that it is not necessary for teachers to acquire the latest and most expensive technology, but to implement pedagogically sound tasks using the resources they already have. To this end, the students, their needs and interests, the context, the content, and the available resources should be taken

into consideration by teachers and administrators alike (Egbert & Yang, 2004; Chambers & Bax, 2006; Ranalli, 2008; Lord & Lomicka, 2011). Furthermore, Chapelle (2001) considers the following qualities for the implementation of ICT-enhanced tasks: language learning potential, learner fit, meaning focus, authenticity, impact, and practicality. Ranalli (2008) illustrates how Chapelle's framework could be used for evaluating CALL task appropriateness in order to develop language learning material using a commercially available simulation game: The Sims. *The Sims* was originally implemented in Miller and Hegelheimer's (2006) research which "investigated whether structured play of the original version of *The Sims*, combined with specially designed support materials, could allow L2 learners of English not only to use the game but also to enhance their grammar and vocabulary knowledge" (Ranalli, 2008: 441). Miller and Hegelheimer (2006) obtained positive results in their study, since they observed "statistically significant increases in vocabulary knowledge of 30 words that learners had been exposed to in the study" (Ranalli, 2008: 441). Due to the result of the research, Ranalli (2008) attempted to replicate Miller and Hegelheimer's (2006) study in order to explore whether the use of computer simulation games, facilitated by supplementary materials, led to vocabulary acquisition.

In Ranalli's (2008) study, a set of supplementary materials were compiled in a website for the participants to have resources while playing the game. These materials included vocabulary information, quizzes, cultural notes, instructions for each day's play, an online dictionary and gaming instructions. To achieve effective use of the ICT materials, the researcher set up three working stations. In Station 1, the participants were provided with vocabulary information, quizzes, cultural notes, and instructions for the game. Station 2 included the online dictionary, the cultural notes, and the game instructions. Students at Station 3 only had access to the game instructions. In order to assess the students' vocabulary acquisition, they were tested before the research started and after they completed it. The results suggest that playing *The Sims* with supporting material did

promote vocabulary acquisition. Nonetheless, the researchers had no strong evidence that indicated that vocabulary acquisition was generated by the use of the simulation game, but rather by the implementation of the supplementary material. This is also noted by some of the students who claimed that the game itself "did not provide suficient examples of the target vocabulary in context; others believed they did not have enough time during the study to pay attention to unfamiliar vocabulary" (Ranalli, 2008: 448-449). The study is relevant to this section since it demonstrates the importance of implementing carefully planned CALL tasks. Additionally, the study shows that commercially produced computer games may be adapted as classroom activities that provide rich language input and communicative opportunities for the students when their use is planned out on the basis of pedagogical principles.

Along with games like *The Sims*, there is a plethora of ICT resources that could be implemented in language classrooms, and educators and students alike can find numerous websites dedicated to language education. Therefore, one of the challenges that teachers face is to adapt the existing ICT materials for their implementation in the L2 classroom, where there is no Internet access. One example to achieve this comes from corpus-based L2 education. This approach to L2 teaching and learning has been defined as the implementation of "language data stored in a digital format" (Breyer, 2009: 153), so students expand their lexical repertoire. Pérez-Paredes, Sánchez-Tornel, Alcaraz-Calero and Aguado-Jiménez (2011) illustrate how this type of ICT-enhanced instruction could be implemented in classrooms where all the necessary technological infrastructure to facilitate students' interaction with corpus-based resources exist. Pérez-Paredes *et al.* (2011) asked students to perform a series of L2 activities using corpus-based resources. In the project, students first had to become aware of the grammatical structure of the sentence, where accuracy in the production of the language was the goal. The research conditions included guided and non-guided corpus consultation to complete the task. This means that one group of students received explicit instruction on the use of the British National

Corpus, while the other one did not. Their findings indicate that corpus consultation could enhance L2 learning, but "skills and guidance are necessary when teachers take corpus to the classroom" (Pérez-Paredes et al., 2011: 233). In order to implement this type of ICT-enhanced L2 learning, teachers may argue that Internet access and a computer lab are absolutely necessary. However, Johns (1994), demonstrates that this is not the case, as corpus-based L2 learning could also be implemented in classrooms with no technology through careful preparation of printed handouts. To this end, teachers would need a clear understanding of the principles of corpus-based learning, the L2 learning purpose of the ICT-based tasks, a selection of appropriate language samples from the corpus, the organization of those samples on worksheets, and a carefully planned set of instructions that guide the learners through a discovery grammar task (Johns, 1994).

Research regarding CALL tasks provides evidence that language education is "moving away from structured 'all-in-one' contents such as those typically found in textbooks, CD-ROMs or online courseware to unstructured yet meaningful bits which we could also refer to as resources" (Gimeno-Sanz, 2016: 1108). The use of textbooks and their complementary material has become canon in the EFL profession. They offer teachers a series of advantages, including reducing the time spent on planning and material design. Language input comes from the material itself, and teachers usually complete a certain number of units before the end of the school cycle. Furthermore, textbooks and their supplementary material generally provide written input and practice activities. The World Wide Web and other technological resources could also help educators in their mission to provide students with all the necessary input and practice during the learning process. However, as we discussed in this section, given the openness and wide array of resources, their effective use requires a careful selection of activities, pedagogically-grounded task objectives, organization and clear instructions.

Conclusion

In this paper, we discussed two essential conditions that, once addressed, might help teachers consider that limited access to ICT does not necessarily mean that teachers are not able to promote ICT-enhanced L2 education. These two conditions related to CALL teacher education and pedagogically-based implementation of ICT-enhanced tasks. Building upon these arguments, we also believe that, even when limited access to ICT is not an issue in L2 classrooms, the implementation of CALL tasks based on pedagogical principles and L2 acquisition theory is still necessary. This is because teachers in institutions which have rich technology access do not always use it to favor their students' language learning. When teacher education and the pedagogical implementation of ICT tasks are addressed, the digital divide will start to close. Teachers who do have access and those who do not, will be able to help students interact with rich language input and output tasks, which will contribute to the successful acquisition of the L2. Furthermore, the use of ICT might also lead to a learner-centered classroom where, through carefully ICT-enhanced planned instruction, teachers could give students the opportunity to choose what they need to improve regarding their L2 competencies.

The digital divide has usually focused on the limited or lack of material access to technology created by social and economic inequality, especially in underdeveloped countries (Dijk & Hacker, 2003; Egbert & Yang, 2004; Izquierdo et al., 2017). This means that educational institutions do not have the resources that will guarantee their teacher and student access to the latest technological devices and software. Additionally, there is also a need to understand the digital divide under different terms, as Van Dijk and Hacker (2003) argue. If in-service teachers identify the resources that they and their students have, such as cellphones, they will then be able to engage their students using those technological resources in tasks to convey meaning in the target language. The studies presented here provide an overview of what has been done in different parts of the world regarding CALL tasks. They illustrate that the pedagogically sound adaptation of commercial games does not only engage students

in rich and interesting tasks, but also demonstrates that, with training and knowledge of L2 pedagogy and research, teachers can adapt available materials (Chapelle, 2001).

Instructors should not aim to use ICT in the language classroom just because institutional, national, or international educational policies demand it. Implementing cellphones, projectors, computers, etc., in the language classroom does not mean that students will learn. According to Porras and del Carmen (2015) and Izquierdo *et al.* (2017), the integration of ICT in the classroom has mostly implied the digitalization of tasks. In contexts, where teachers rely on ICT to project information that is available in printed materials, one may wonder whether financial and time investments are really worthy. Rather, a conscious and critical decision on the use of technology must be made in order for the students to take advantage of these resources. Technologies need to be implemented in such a way that they address the students' needs and interests and create valuable L2 learning conditions. Nowadays, with the identification of learning styles and multiple intelligences, ICT-enhanced tasks have become more relevant in order to cater to the particularity of the students.

This paper contributes to the field of Computer-assisted language learning and Second language education, by outlining that limited access to technology is not a determinant factor to foster technology-enhanced L2 learning and teaching. We argue that material access in the classroom can be overcome through teacher education and task preparation that promote the effective implementation of tasks using the limited technologies that each institution, teacher, and/or student might have. While some research on teacher education has examined effective ways to help teachers plan, develop, and evaluate tasks and activities that promote L2 learning, there is a need for descriptive research that focuses on how pre-service and in-service teacher training effectively helps instructors optimize the ICT that are already available in educational settings in developing countries. Furthermore, it would be desirable to examine how teachers could collaborate with their peers in their school settings, for instance through action research, to reconstruct their

understanding of the use of technology in language education and its impact on their pedagogical practices.

In conclusion, in a globalized world, the integration of ICT in language courses is necessary, not only to comply with educational policies, but also to demonstrate that the learning of a new target language can be achieved through the technological resources available inside and outside of school. Limited access to technology is a problem that must be addressed, but administrators and educational authorities should understand that a lack of economic resources does not necessarily hinder the use of technology in language learning. Factors such as teacher training and the pedagogical implementation of ITC tasks, among others, contribute more to the digital divide. One of the limitations of our paper is that it does not provide teachers and administrators with strategies that could be implemented in order to enhance the implementation of ICT in the language classroom and the areas of language knowledge in which these might be more effective. The purpose of our paper was not to provide recipes for the implementation of ICT in contexts with limited access to technology. Instead, we wanted to raise awareness that limited access to technology can be overcome through some theoretically and empirically informed strategies. Additionally, the essay does not consider the specific particularities of the contexts, nor the perceptions of parents and students reflected in empirical research. Therefore, an area of opportunity for future research might be the exploration of administrators, educators, students and parents' initiatives, whereby limited access to ICT in public schools can be optimized for language education purposes.

| *End notes*

1 The term CALL was originally used to refer to the use of computers in language education. With the development of technology, other terms such as TELL (Technology-enhanced language learning), MALL (Mobile-assisted language learning), CASLA (Computer-assisted language acquisition) for instance have emerged (See Chapelle, 2001; Golonka et al., 2014). In this paper, we use the term CALL as a generic term that refers to the use of any type of ICT to assist language learning and instruction. In the text, unless required due to the literature reviewed, we refer to specific technologies, such as MALL to narrow down the scope of the technologies under examination.

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