

INFORMATION AND COMMUNICATION TECHNOLOGIES: APPLICATIONS AND  
BENEFITS FOR SECOND LANGUAGE ACQUISITION

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A Thesis

presented to

the Faculty of the Graduate School

at the University of Missouri-Columbia

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In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

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by

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MAY 2019

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## **ACKNOWLEDGMENTS**

Throughout the writing of this thesis I have received a great deal of support and assistance.

I would like to thank my thesis advisor, Dr. Marcos-Llinás, whose constant support and continuous corrections, made this thesis possible.

I would also like to thank Dr. Draper and Dr. Frisby, for gladly agreeing on being part of my committee.

My roommates and friends Robert Ward and Trevor Lister, for helping me out throughout my writing process.

Finally, I would like to thank my family back in Brazil, for always supporting me.

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## ABSTRACT

This paper aims to show how the use of Information and Communication Technology (ICT) can help students achieve a higher degree of proficiency in a second language (SL), using these resources autonomously. Furthermore, I analyze in a systematic manner what the benefits obtained by undergraduate and graduate students, who made regular use of ICT were, as well as the issues related to learning a SL within the university context and out of it, with the help of these software/applications. The aim of this paper is to highlight the importance of the use of ICTs in the academic field because it analyses how students of a SL use free resources available online to increase the proficiency of their language skills, and how they can use them with other resources also covered here, for the purpose of improving the four skills present in the language acquisition process: speaking, listening, reading and writing. The methodology of this study was developed through a survey and data analysis; the data was used to determine which ICTs students utilize, as well as the language improvements noticed by them. This paper also analyses which ICTs students opt to use when studying on their own, that is, when they are on their way to becoming autonomous. Towards the end of this paper, it was verified that the use of these applications resulted in higher proficiency, especially in speaking and listening skills, and made the participants feel more confident using the SL; not only in its formal context but also recognizing its variants with native speakers.

*Keywords: Technology, ICT, languages, autonomy and education*

## **CHAPTER 1: INTRODUCTION**

### **The rise of ICT**

The advancement of technologies and specifically the arrival of Information and Communication Technology (ICT) provides us with new pedagogical tools and, thus, new ways of teaching and learning. ICT refers to the use of all devices, networking components, applications, and systems that, when combined, allow people and organizations to interact with the digital world. ICT have completely changed the way the world interacts and communicates. Propagating with the immersion of the Internet, ICT go through constant evolution, bringing new solutions in different areas of our society.

Numerous studies such as Spector (2002), Hegarty (2004) and Plomp (2007), among others, analyze the impact of ICT in the information society, especially associating the implications of its use in the current learning/teaching process. Castells (2002) explains that what characterizes the current technological revolution is not the centrality of knowledge and information, but the application of such knowledge and information for the generation of new knowledge and devices and information processing/communication in a continuous cycle between innovation and its use.

The relevance of this study lies in the fact that ICT is constantly emerging and evolving; consequently, little is still known about new resources that can be used or directly adapted to the current learning/teaching scenario. Therefore, in this study, the main objectives are to investigate how learners can increase their fluency by making use of the many ICT available, and to find out which ICTs students currently use when learning a second language, as well as the ones that can be adapted for this purpose. I also point out the benefits that ICT bring to education, especially for those students who are autonomous or are on their way to autonomy.

Additionally, I discuss the correlation between motivation and autonomy. Previous studies such as Gardner (1985) and Schmidt (1991) demonstrate that when students are motivated, they also tend to find new ways to learn by themselves; therefore, becoming autonomous. Paulo Freire, in *Pedagogy of Freedom* (1998) and *Pedagogy of the oppressed* (2007), discusses, among other topics, the role of the instructor to foster students' autonomy. According to the author, autonomy is essentially a "capacity for critical reflection, to take decisions and act independently". The author discusses that students should be able to take charge of their own learning process; a process involving various and innumerable decisions. Freire (1998) emphasizes how important it is for students to understand their role as learners responsible for the search and acquisition of their own knowledge. In this paper, I propose that students can find in ICT different ways to become the protagonists of their own learning path; utilizing a range of technology, such as language learning online communities, cellphone applications, *Skype*, etc., to become autonomous in the process of L2 acquisition.

This thesis is structured as follows: the introduction briefly summarizes the five sections that make up this study. First, I will discuss how these technologies have emerged and expanded. Following this, the study aims to investigate how the second language learner can benefit from the inclusion of technological resources, allowing researchers and language teachers the solution to the following research questions: 1) How can learners increase their fluency by using the many ICT available?, 2) What technologies are currently being used by students, their relevance, and use frequency?, and 3) How students relate these technologies with the improvement of specific language abilities?

Third, I discuss the types of ICT available for students who want to learn an L2 in a real-world setting, guiding them towards autonomy. I will investigate which technologies students

already use and if they are aware of other ICT that were recently developed to help in the process of L2 acquisition. For instance, websites such as *Gospeaky.com* and *Conversationexchange.com* allow students to connect with native speakers or advanced learners; applications such as *Duolingo* aid in the practice of speaking, listening, reading and writing skills. Additionally, how students use online resources, such as language forums, online dictionaries, or machine translation services to resolve doubts is also discussed.

Fourth, an analysis of my data is presented. This data explains how the learning process takes place through the use of the ICT previously mentioned. The data I have collected not only shows the main ICT used by students, but also provides important information about students' time of utilization, the resources they choose, and the tools that help students improve.

Finally, this paper discusses how the use of new technologies by students can strongly motivate them to acquire an L2.

## **CHAPTER 2: LITERATURE REVIEW**

With the constant evolution of technology, ICT arise to revolutionize the way society communicates, bringing benefits never seen before, and reducing communication barriers in general. As a pedagogical tool, ICT help to create a modern environment for teaching/learning of a second language (SL), which allows the use of these technologies to assist in the development of fundamental skills in the target language. This chapter is organized as follows. In the first section, I present a brief summary of the transformations that were brought to our society with the advancement of the technology from the mid-1970's throughout the late 1990's. In the next section, I explain the implementation and growth of the internet and other synchronous and asynchronous tools. In the subsequent sections, I discuss the role of autonomy in L2 acquisition thoroughly. Finally, I discuss the use of the different ICT to enhance the quality of teaching and learning. For teaching, I show how instructors can benefit from the implementation of different ICT in their classroom. For learning, I present some of the tools that can be adapted for L2 acquisition and some other technological resources that were already designed for use.

### **2.1 ICT: From Origin to present day**

Since the mid-1970s, with the advent of ICT, the world has undergone several transformations. These transformations are directly linked to the constant advancement of technology in general, and how this advancement affects us directly. To understand how ICT has reached the current level, it is necessary to know how they came about, how they evolved, and the impacts that ICT bring to today's society, especially for the teaching/learning of a SL in modern times.

The need to communicate has been present in the life of human beings since the earliest times. The desire to exchange information, express ideas and feelings are factors that contributed to the evolution of the way we communicate. Thus, over time, mankind has perfected the ability to relate with each other. Since the late 1970s, technological change has accelerated and transformed under the impact of the rapid diffusion of information in microelectronics. The

emergence of a new technological organizational paradigm is among the most striking features of the evolution of capitalism in the 1980s and 1990s.

At the end of the 20th century, the world underwent a process of technological transformation based on ICT. According to Castells (2002), what characterizes the current technological revolution is not the centrality of knowledge and information, but the application of such knowledge and of this information for the generation of new knowledge and devices and information processing/communication, in a continuous cycle between innovation and its use.

Castells explains that:

The new information technologies spread through the globe with lightning speed in less than two decades, between the mid-70s and 90s, through a logic that is the characteristic of this technological revolution: the immediate application in the very development of technology generated, connecting the world through information technology (Castells, 2002, p.52).

For the academic area and the school context, the benefits that ICT bring are of great relevance since students who use these technologies for SL learning have the possibility of gaining a higher degree of proficiency than those who do not use these resources. With the acceleration of globalization, it is increasingly common to use technologies that have broken the physical barriers of preexisting communication. Therefore, the diffusion of these new technological resources making communication between peoples of different cities, countries, or even continents easier

and simpler, especially through the computer and the software that is tied to it. In relation to this, Franco (2008) emphasizes that:

The focus on communication that was fundamental to language teaching, computer-based activities should focus on language use and not just its grammatical form, introduce grammar in an inductive way, and encourage the production of authentic language and not pre-fabricated, using predominantly or even exclusively the target language (Franco, 2008, p. 5).

According to Paiva (2005), ICT can be used as an auxiliary tool in a language classroom, as it helps students and teachers to learn and teach with modern and accessible resources, which must be intrinsic characteristics of this process. Paiva (2005) also affirms that learning through these resources is done in a spontaneous way, since the choice of materials and the paths to be used can be made according to the interests of each party involved, thus making it possible for learners to become agents of their own learning process. Peremound (2000) states that, nowadays, the modern way of teaching is closely related to the use of ICT:

To train for new technologies is to train for a judgment, critical sense, hypothetical and deductive thinking, faculties of observation and research, imagination, the ability to memorize and classify, reading and analyzing texts and images, representation networks, procedures and communication strategies (Peremound, 2000, p. 128).

Based on the aforementioned authors, we can affirm that the use of ICT becomes fundamental in the process of teaching/learning of languages, and that both teacher and student must make use of these technologies in the appropriate way, adapting to their reality, and taking full advantage of the benefits that the use of these resources provides.

## **2.2 Internet, Synchronous and Asynchronous tools**

Since its inception, the Internet has revolutionized the way the world communicates by reducing the physical barriers between people and making communication much easier and more dynamic. Along with the technological revolution that has arisen with the increasing use of computers, the Internet has fundamental importance, because when a computer is connected to

the network, it is able to accomplish things that could never be established without a connection to the Internet. Therefore, computers have become present in all areas of study and work, bringing facilities and innovations never seen before.

At first, in the United States, the Internet appeared to improve research in the university sphere, and also to reach and overcome the technological/military hegemony of the Soviet Union. Created by the US Department of Defense in 1969, it aimed to stimulate interactive computing research. According to Paiva (2001, p. 94), "the initial tool of the Internet was electronic mail, allowing the transfer of files and texts", followed by the famous "www", which is still in use. Images, video, texts, and sound had their first version aired in 1991, Paiva (2001) explains that with the launch of the Mosaic browser in 1993 and the hypertext concept, which Web growth has intensified.

Over the years, several changes have been taking place in computer networks. In the 1990s, Castells (2002) pointed out that in the US most computers could be networked, which laid the foundations for the diffusion of network interconnection. Since then, private providers have been established, and created their own networks, thus opening their doors of communication on a commercial basis leading to the line of development of network communications until the Internet became a global network of computers.

According to Castells (2002), the Internet is a means of communication that allows, for the first time, the communication of many people with many others, at a chosen moment, on a global scale, and since its creation has not stopped growing as Dizard (2000) mentions: "Since then, it (the Internet) has become the fastest growing computer network in the world." However, implementing the use of Internet to education proposes, requires planning, knowledge of its correct use, as well as reflection of the best methods available for the task in mind. In his patent



for internet-based education support system and methods, Robert Alcorn (2006) discusses a little about this issue, as we can see in this quote:

Furthermore, the complexity of using the Internet for educational purposes is compounded as the number of user choices required at the user interface increases because not only must the instructor and students acquire technological competence in the use of the medium, but they must in addition understand the presentation and consequences of a plethora of choices required by a particular user interface (Alcorn, 2006, p.15).

With all this growth, the way of interacting with the Internet has been expanding, and a range of possibilities has begun to emerge for its use, both with the modernization of sites, linked to different sectors, and for the creation of specific software and tools for the Internet. An example of such tools is the so-called “synchronous tools”, as the name implies, the sender and the receiver must be in sync before the communication process starts, as these tools provide real-time communication. Examples of these tools are: chats, instant messengers, *Skype*, and video conferences among others. The use of these tools, according to Bracey (2005), generates an online meeting, and this meeting is characterized as a creative moment, built collectively to generate new ideas and topics to be studied and deepened.

With the use of these different tools, students can communicate student/student, student/teacher according to Franco (2008) and create an interaction called “collaborative learning”, where they can build knowledge together. Souza discusses all the benefits that the Internet and its tools can bring, i.e. the solutions and advantages linked to its use, including the possibilities and innovations available when used as pedagogical resources. As he states:

With networked computer technology, computer-mediated communication has become an additional pedagogical possibility in language teaching contexts. In addition to providing spaces for communication mediated by writing, the Internet has brought about a relative overcoming of the difficulties of communication experiences between foreign language learners and communities using these languages, imposed by geographical barriers. Concomitant with the technology that opens the possibility of computer-mediated communication in foreign language teaching, theoretical frameworks for the support of pedagogical proposals that envision technology play a central role in instruction (Souza, 2004, p.8).

On the other end, asynchronous tools are tools that do not require an active connection between two parties at the same time. Examples are e-mails, listservs, forums, discussion groups

and computer software. Anderson (2004) creates a list of advantages and disadvantages provided with asynchronous communication tools, as we can see in the table (Table 1)

**Table 1: Advantages and Disadvantages**

<b>Advantages</b>	<b>Disadvantages</b>
Available anytime/ anyplace.	No Immediate Feedback.
Can incorporate a variety of media.	Difficult to keep track of collaboration.
More time for reflection.	Technology can be costly.
Documentation of collaboration process (cloud technology).	Information must be organized and searchable or it is lost.

### **2.3 ICT and Autonomy**

Learner autonomy is widely recognized as a key element of language learning and has received a great deal of attention from L2 researchers and practitioners over the years according to Little, Dam, & Legenhausen (2017). Benson (2011) states that autonomous language learner is firmly grounded on constructivism, which according to the author has two outcomes. First, it highlights the active role that learners play in the learning process. Second, in the field of humanistic and cognitive physiology, it emphasizes the support of a learner's inherent drive towards self-actualization of their full potential and enable them to utilize social, psychological, and behavioral resources to achieve personal transformation. However, before approaching ICT as tools to help SL learning, it is important to know the context in which students' learning takes place. It is worth highlighting that ICT are not "magical" tools that will make the SL learner fluent by the simple use of them. Rather, it is necessary to understand how the use of technology can guide learners to achieve their goals. Since students usually spend most of their time outside of the classroom, ICT can be used as tools that will help them towards becoming autonomous. As Benson (2011) states:

Autonomy is manifested in the form of autonomous language learning, which here refers to learning practices involving learners' control over aspects of their learning or, more broadly, learning that takes place outside the context of formal instruction. By digital literacies, I mean the various communicative practices that are involved in the use of computers, which nowadays invariably involve the use of mobile devices and the

Internet as well and involve reading and producing both written and multimodal texts, often out of school and often across linguistic and cultural borders (Benson, 2011, p.840).

But what is autonomy and how does one achieve it? Paulo Freire (2003) states that autonomy is essentially a “capacity for critical reflection, to take decisions and act independently.” The author discusses that students should be able to take charge of their own learning process. First, students should define their aims. Secondly, they have to understand their roles as a learner responsible for the search and acquisition of their own knowledge. Finally, students should be able to reflect on ways of learning that are different from those they experience in the academic context, performing constant self-evaluation during the process.

Boud (2012) says that autonomy is one of the main topics of his research because of the learning power he sees attached to the independent autonomous learner. He concludes that not only students will become more efficient in SL learning, but also more capable of self-directing their efforts. Freire (2003), in his definition of autonomy, cites two key words that summarize the concept of how to become autonomous. These words are: "acting" and "independent". That is, to act independently is one of the first steps towards autonomy. To achieve this goal, the teacher has an important role in guiding students. For instance, teachers can discuss with their students the importance of practicing outside of the classroom and the benefits of finding valuable input for their language learning process.

When students start developing autonomy, not only do they discover new and exciting ways to learn by themselves, but they will also not entirely rely on the teacher’s help. This is what Smith (2001) explains:

The educator, supported in the interdisciplinary that the teaching of languages requires (psychological, anthropological, sociological aspects), must teach the student to think, to reflect on linguistic issues in their relations with the extra-linguistic. This activity must necessarily be conscious (2001, p.23-60).

In addition, the learner needs to be confident and know that he/she will not only learn with the help of the teacher, but with their own efforts as exemplified by Liu (2015):

When student's motivation is autonomous, they display more positive educational outcomes than when their motivation is controlled and that the students are more autonomously motivated when teachers create classroom climates that support the student's basic psychological needs for competence, autonomy, and relatedness (Liu, W.C. et al., 2015, p.20).

With the concept of autonomy constituted, we see in ICT the possibility of using them as learning aids and not as a replacement of the current SL teaching/learning methods. For the development of SL proficiency, the learner needs to master the four different skills: speaking, listening, writing, and reading. In this sense, students who use ICT will notice instantly that the practice of the four skills not only is possible, but can go beyond expectations. Authors who do research on L2 acquisition often mention the total immersion method, such as visiting the country where the language is spoken as being one of the easiest ways to become fluent in a short period of time. However, being able to travel to a foreign country can merely mean a utopic concept to most students. Factors such as one's lack of appropriate finances, time, and availability among other things can disrupt this idea. ICT, such as language learning communities' websites, allow calls to be made by voice or video with audio quality superior to that of a landline or cellular telephone. Thus, users have the distinct impression that they are talking to someone that is sitting right next to them. This breaks the distance barrier and provides the learner with the chance to speak with a native speaker, as if they were interacting *in loco* with other interlocutors of the target language. The importance of this interlocutory dynamic present in communication through ICT is that the native speaker is reinforced, above all, by Vygotsky's 1978's Social Development Theory. This theory argues that social interaction precedes development; consciousness and cognition are the end product of socialization and social behavior. According to Vygotsky (1978), the theory has a fundamental role in the development of the human being. This theory, however, was not

initially applied for the learning context of an L2. The Vygotskian concept, however, was widely accepted in this area, enabling us, in this way, the application of this theory in the most varied contexts including language teaching from technological inputs.

## **2.4 Achieving Autonomy**

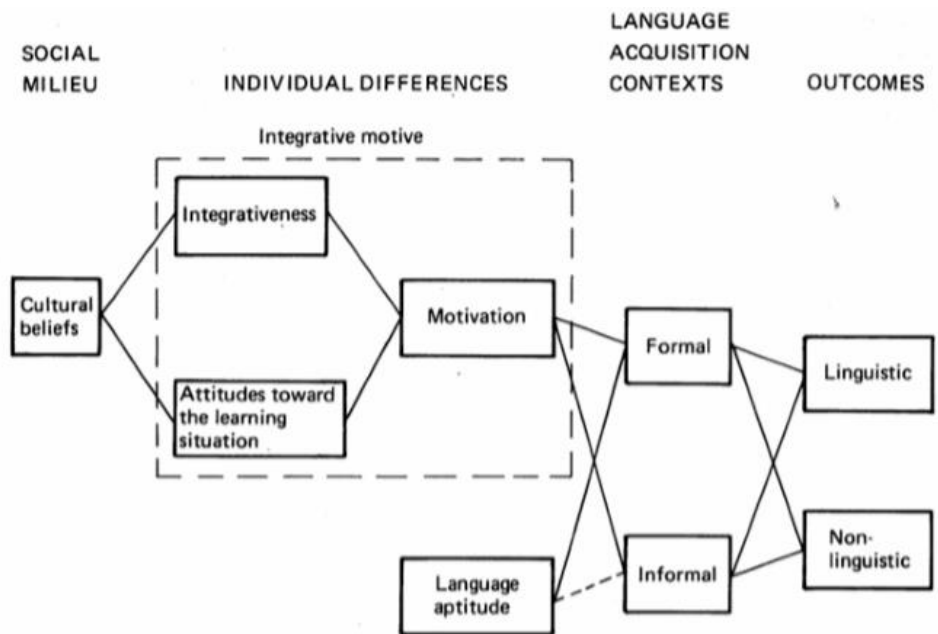
Guiding students towards independence is not a simple task. The path that leads to autonomy is, oftentimes, arduous and full of uncertainties. Some students need to be motivated before feeling the necessity of learning on their own. However, some authors disagree on the relationship between motivation and autonomy. Ryan and Deci (1985), for instance, argue that motivation is the fruit of autonomy. In contrast, the studies of Spratt, Humphreys, and Chan (2002) conclude that motivation comes before autonomy. But how can instructors motivate students enough so that they can become autonomous in the future? First, it is necessary to define motivation and its relation to autonomy.

According to Spratt (2002), motivation is defined as a process by which activity goal is instigated and sustained. Because it is a process, motivation cannot be directly observed, but merely inferred from behaviors such as choice of tasks, effort, persistence, and verbalizations. Motivation encompasses goals that lead to action and requires activities that involve effort and persistence. Motivated activity is instigated and sustained; therefore, getting started is important and difficult because it involves a commitment to change and take the first step. In other words, motivation is responsible for people's decision of doing something; how long they are willing to sustain or expand an activity and to what degree they will sustain the activity. Gardner (1985) defines motivation as the combination of the effort and the desire to achieve learning by adding favorable attitudes towards language learning. Crookes and Schmidt (1991), however, argue that motivation to learn a language should not only be linked to attitudes towards this language,

emphasizing that the concept of motivation has been used in a very limited way in applied linguistics, and, therefore, some theorists have turned to the area of education to use this concept. One of the ways to foster motivation is showing students that it is possible to learn by studying topics that are more appealing to them. For instance, a student who likes music or videogames, might find interesting to look for new bands who sing in the target language. Studying the lyrics from that new group, will provide the student with new vocabulary, different verb conjugations and even cultural aspects. Similarly, playing a game will produce the same effect.

Currently, there are many theories developed to explain motivation in second language learning. One of them is the Socio-educational Model developed by Gardner (1985). This model was first introduced by the author in the 1960's and it was last revised in 2001. The model proposes two primary variables in language learning: ability and motivation. According to the model, some students might stand in different places in these two variables. For instance, one might be higher in ability but lower in motivation or vice-versa. Gardner (1981) explains that ability and motivation are related to formal and informal language learning context. The formal contexts refer to learning a language in a context such as a classroom. The informal contexts are the ones that will be further discussed in this research. Examples are: learning a language by watching television, listening to new bands, or even talking to native speakers on the Internet. According to Gardner (2001), the informal contexts require a higher level of motivation from the learner. That is, a higher level of motivation is required for the learner to be able to seek informal contexts of learning on their own. Both contexts, according to the author, lead to linguistic and non-linguistic outcomes. The image below (Figure 1) illustrates Gardner's first Social-educational Model.

**Figure 1: Gardner's (1985) Social-educational Model**



Furthermore, two terminologies are also found when discussing the motivation of language learners: integrative and instrumental orientations. Various studies differ integrative from instrumental motivation. As Brown (2007) explains the distinction:

An integrative orientation simply means that the learner is pursuing a second language for a social or cultural purpose or both, and within that purpose, a learner could be driven by a high level of motivation or a low level. Likewise, in an instrumental orientation, learners are studying a language in order to further a career or academic goal. The intensity or motivation of a learner to attain that goal could be high or low. (Brown, 2007, p. 88)

More recent studies have been using another motivation theory, which is the *L2 Motivational Self System* introduced in 2015 by Zoltán Dörnyei and Ryan, which also proposes 3 new dimensions:

1) The Ideal L2 Self, 2) The Ought-to L2 Self, and 3) The L2 Learning Experience. As the key concept, the Ideal L2 Self concerns a desirable self-image of the kind of L2 user that one would ideally like to be in the future. The Ought-to L2 Self reflects the attributes that one believes one ought to possess to meet expectations and to avoid possible negative outcomes in the process of L2 learning. The third component, the L2 Learning Experience is different from the first two in the sense that it focuses on the learner's present experience, covering a range of situated

‘executive’ motives related to the immediate learning environment (e.g., the impact of the L2 teacher, the curriculum, the peer group, and the experience of success)” (Dörnyei & Ryan, 2015). Validity of these theories is important. Consequently, it is important to mention that this L2 Motivational Self System has acquired great prestige. Just to mention, several large-scale surveys have been conducted to validate the theory in diverse, though mainly EFL, learning environments such as Germany (Busse, 2013); Hungary (Csizér & Lukács, 2010; Kormos & Csizér, 2008); Indonesia (Lamb, 2012); Japan, China, and Iran (Ryan, 2009; Taguchi, Magid, & Papi, 2009)” and many others, as cited in (Dörnyei & Ryan, 2015, p. 92).

In the previous sections, I discussed the role of autonomy in the process of language learning. Firstly, I explained how students can use ICT to have access to different tools that help them become autonomous. These tools allow students to practice the L2 actively, giving them access to authentic material, and finally, motivating them in increasing their interest in what they learn. Lastly, I discuss the concept of autonomy and how students can achieve it. An intrinsic relation between autonomy and motivation is also discussed. The role autonomy plays in the process of second language acquisition is thoroughly discussed in this study because of the positive results I demonstrate in the data analysis chapter.

## **2.5 Teaching L2 with ICT**

The world has taken an irreversible course towards knowledge advancement. This knowledge is often translated into the application of new technologies that arise in various segments of society. Ntongieh (2016), for instance, says that the role of ICT in the 21<sup>st</sup> Century educational set up cannot be overemphasized. Just by using ICT outside of the classroom, regardless of its type, students are exposing themselves to new technologies that can increase their fluency. A study by Mullamaa (2010) states that: “ICT supports the modern principles of learning



and language acquisition. Individualization, interaction and student motivation, often considered paramount in modern education theories, are necessarily a part of the process in ICT” (14).

In the field of Computational Linguistics, for example, new forms of translation software are reformulated, especially with the advent of the generative theory. In this context of technoscientific evolution, the purpose of the academia is to train professionals who meet the demands of contemporary life, among them educators, who have the function of subsidizing the continuous diffusion of basic and current knowledge. Because such knowledge requires reading and writing skills, the language educator is charged with the task of training efficient readers and writers, regardless of the profession they will choose in the future.

In view of the multiple complexities of this century, it is of the utmost importance that the bilingual professional understands how learning occurs in its entirety, since this professional can no longer be seen merely as a receptacle of contents, but as a subject trained for facilitating learning. It is known that the conception of formation, learning, and development of the individual that is part of the present Pedagogy is the socio-interactionist whose prominent representative is Lev Semenovich Vygotsky (1998).

Although all Vygotsky studies have been done with children, his theoretical assumptions are commonly used to understand how individuals learn, since the human being is always in the process of learning. As he explains, "The notion of level of real development and zone of proximal development, for example, can be taken as a criterion of advancement of teaching or its regression, so that learning becomes effective in the learner of any age" (Vygotsky, 2012, p. 37).

Knowing the linguistic history of the individual can bring benefits towards language teaching, since, through these data, the path that the educator should follow will become more delimited, respecting the different rhythms and levels of the real development of the students. In this way,

the insertion of new concepts and the acquisition of new discursive skills can occur fluidly in the learner.

The process of the intellectual development of contemporaneity is no longer effective without the mastery of the new Information and Communication Technologies. These are already constituted as cyberculture, a term coined by Pierre Lévy (2007), which deserves analysis.

According to this theorist:

Cyberspace (which I will also call 'network') is the new medium of communication that comes from the global interconnection of computers. The term refers to the physical infrastructure of digital communication and the oceanic world of information found there, as well as humans who sail and feed this universe. As for the neologism 'cyberculture', it specifies here the set of techniques (materials and intellectuals), practices, and attitudes, modes of thought and values that develop along with the growth of cyberspace (Lévy, 2007, p.17).

From this concept emerges the notion of cyberspace as a support of "collective intelligence", which is constituted as a result and, at the same time, a process of production in cyberspace. However, Lévy (2007) points out that: "In the first place, the growth of cyberspace does not automatically determine the development of collective intelligence, it only provides this intelligence with an enabling environment" (29). In another section, he says that when intelligence processes are carried out through cyberspace, it accelerates the pace of techno-social change. It then states that:

Due to its participative, socializing, decomposing, emancipatory aspect, the collective intelligence proposed by cyberculture is one of the best remedies for the destabilizing, sometimes excluding, the rhythm of the technical mutation. But in this same movement, collective intelligence actively works to accelerate this mutation (Lévy, 2007, p.17).

Lévy (2007) points out three findings that: 1) For the first time in human history, most of the skills acquired during the academic years become obsolete by the end of one's career, since the range of knowledge grows every moment; 2) The work relationship changes as a result, because working at the present time means "to learn, transmit knowledge and produce knowledge" (157). The author also compares these dynamic changes in relation to the cyberspace, as seen in the quote below:

Cyberspace supports intellectual technologies that amplify, externalize, and modify numerous human cognitive functions: memory (databases, hyperdocuments, digital files of all kinds), imagination (simulations), perception (digital sensors, telepresence, virtual realities), reasoning artificial intelligence, modeling of complex phenomena) (Lévy, 2017 p.17).

Faced with the transformations provoked by cyber culture, the role of the language instructor in this context is to mediate learning, since knowledge is given not by oral exposition, but by an entire interconnected network of collaborators in cyberspace. In this sense, then, the instructor is faced with the responsibility of incorporating these tools to reflect the current stage of learning/teaching.

## **2.6 Using and adapting current ICT for Language Learning**

### **2.6.1 General Ideas of Social Networks and Media**

Media is a broad concept and can be understood as the whole press, such as newspapers, radio stations, television channels, online providers, websites, etc., or any instrument or means of communication. The term media is not restricted to how communication is done – through the Internet, for example, but it focuses on the type of content that is conveyed. In other words, social media are usually websites and applications that allow different forms of interaction and participation among users.

Social networks are formed by a group of people who usually have common interests. These groups exist and interact on different platforms, seeking to facilitate social relations between them. On these platforms, they usually have something in common: they like the same kind of music, they studied at the same place, they want to exchange travel tips, etc. Many of these interactive platforms offer different types of services. Taking into consideration all existing platforms of social networks, there are innumerable possibilities of collaboration, which make them a powerful resource for social interaction.

## 2.6.2 Social Network Sites

While some technological resources have been originally designed for students who are learning an L2, others can be easily adapted for the same purpose. In this section, I will discuss some of the resources that are currently available to help students improve their language skills, and how it is possible to adapt other resources for the same purpose.

## 2.6.3 Language exchanging Social Networks

According to Boyd (2007), social network sites (SNSs) such as *Facebook*, *VK*, *Orkut*, and *Myspace* have attracted millions of users, and many of them have integrated these networks into their daily practices. The popularity of these SNSs lies on the fact that its users are allowed to share their daily lives, virtually, to a group of people that have been previously selected by them. The definition of SNS given by Boyd is:

Sites as web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site (Boyd, 2007, p.211).

As Boyd (2007) stated in his definition of SNSs, the nomenclature of the connection may vary from site to site. Language learning social network sites (LLSNSs), however, have users who share just one interest: exchanging language practices. Users who create a profile in these LLSNSs must share information such as the language(s) they are learning and the one they are a native speaker of, their proficiency level, and, in some cases, how much time they want to practice. Differently than SNS as *Facebook*, these social networks do not allow users to update pictures other than their profile picture. These LLSNSs offer a perfect platform for learners who are looking for other peers worldwide who also want to practice their language skills.

LLSNSs are relatively new and their uses are often associated with the Tandem Language Learning Method. This method advocates to the mutual benefits of learning an L2 with the help of

someone who already speaks it. A study by Lin Chin-Hsi, Warschauer, and Blake entitled “Language learning through social networks: perceptions and reality” (2016) shows that most of these platforms are less than ten years old. The study also investigated learners’ attitude, usage, and progress in a major LLSNS. This study explores a method of language learning that has very little information available. However, some benefits such as direct contact with a native speaker, possibility of practicing the four language abilities through meaningful spoken language practices, and the increase of motivation pointed out by this single study already confirm the advantages of using LLSNSs for language learning.

#### 2.6.4 Language-Learning Platforms

Unlike LLSNSs, language learning platform sites (LLPs) do not provide interaction between native speakers, instead LLPs offer their users language practice activities. Users also need to create a profile and, often, they are encouraged to take a placement test to determine their proficiency level. Once users create a profile, they can practice the levels suggested by their placement test results or just look for a grammatical topic they are interested in practicing. According to the number of users, two LLPs stand out: *Duolingo* and *Rosetta Stone*. These two platforms are different in terms of user interaction, the table (Table 2) below summarizes some of the main differences:

**Table 2: Platforms Features**

<b>Platform Features</b>	<b>Duolingo</b>	<b>Rosetta Stone</b>
<b>Pricing</b>	Free	Paid
<b>Works offline</b>	No	Yes
<b>Allows user to practice different language skills.</b>	Yes	Yes
<b>Provides Online Sessions</b>	No	Yes

Although these two platforms have different features, the way students' complete tasks to practice each language skill is very similar. For instance, in both platforms, users listen to a word and have to associate it to its meaning either by matching with a picture describing the action or with the same word in their native language. The writing skill is practiced when users have to write the new words they heard or just translate a sentence to the new language they are practicing.

### **2.6.5 *Twitter***

*Twitter* is a social network created by Jack Dorsey, Noah Glass, Biz Stone, and Evan Williams in 2006. It allows users to write small posts, or tweets, which can have up to 280 characters. *Twitter* is a social network often used by people who want to follow a person, which can be a friend, or a celebrity, or even events in real time. *Twitter's* popularity has grown exponentially since its creation because of its clean interface and simplicity. An example in which *Twitter* was used as a pedagogical tool was in a bilingual school named *Red Ballon*, in Rio de Janeiro. In this school, teachers asked students to look for grammatical mistakes posted by famous people on *Twitter*. After that, students made a video commenting on the common mistakes famous people made when posting their *twitters*. As a pedagogical tool, the teachers from this school used this social network to create an authentic activity in which students could practice the grammar they learned in a real-world setting.

### **2.6.6 *Skype***

*Skype* is a software that, when connected to the Internet, makes audio and video calls through Voice over Internet Protocol (VoIP) technology. Created by the Swedish Niklas Zennstrom in 2003, *Skype* is the leading software when it comes to online calling. According to

an article published in *Bloombeq.com*, in 2016 *Skype* had 300 million users worldwide, and those numbers only keep increasing, as explained by Gough (2006). The author also states that *Skype* is the fastest growing application of the Internet. The program has a user-friendly interface, which does not require in-depth knowledge by the user, which makes it easy to use, as well as being the best software available when talking about audio quality as explained by Gough: "First, *Skype* audio quality is superior to any other solution. Second, *Skype* is very network friendly, so little is required to make *Skype* work in your environment" (Gough, 2006, p.4).

The VoIP technology used by *Skype* refers to the use of the Internet to transmit voice to another receiver (Field, 2006). In that way, the Internet is used to allow phone conversations. Kelly (2005) recognizes that "VoIP is not just another form of connectivity, it enables the fusion of voice and data applications (12)". According to Stadler (2006), the first PC-to-PC Internet call occurred in 1996 (15 years ago). This process is done when voice signals are divided into data packets. In the network, these packets are sent by the speaker until reaching the receiver, where the digital data is again converted to voice. *Skype* is unique when compared to other applications that use VoIP because of their peer-to-peer- technology.

One of *Skype's* big advantage is that it offers free calls between its users and calls to landlines or cell phones with a price much lower than those charged by fixed or mobile telephone service providers. According to Thomann (2006), *Skype* is the only VoIP provider that uses peer-to-peer, which is characterized by the fact that the service is not administered by a central server.

According to Baset (2006), one of the reasons for the high-quality calls originated through *Skype* is because calls are made directly between two computers, and do not use a central server, as it usually is done with other software that uses VoIP. To establish a connection, *Skype* searches

and finds other *Skype* users to connect them directly. The only existing central server is the one that manages users' login and password.

This chapter presented information about the emersion and development of ICT. With the advance of technology, new ways of learning and teaching have emerged. Considering these changes, ICT was presented here as a source to enhance the teaching/learning experience of students and instructors.



## **CHAPTER 3: METHODOLOGY**

### **Introduction**

As stated in the introduction, the main objective of this research was to examine ICT users and their benefits at the University of Missouri-Columbia. In order to do so, a questionnaire (See Appendix A) was administered to verify the possible benefits of using ICT as pedagogical tools to help students who are in the process of learning Spanish. The questionnaire was designed to confirm which of the four language skills students have seen improvement with, as well as the benefits the use of these technologies would ultimately bring to them. In addition, the questionnaire was intended to verify the advantages of the use of ICT for autonomous students who need efficient tools to help them in this arduous process that is learning and becoming fluent in an L2.

Taking into consideration the great number of ICT that are currently available, I divided them into different groups to determine which tools language learners make use of the most. Moreover, the questionnaire addressed objective questions about the amount of time students spent utilizing these tools and the relevance they had, as well as demographic questions such as age, gender, and educational level. Subjective questions were aimed at ascertaining perceived improvement by the student, through the use of these tools in a general and specific manner. In addition, some questions were designed to verify whether students looking to improve in determined areas of language acquisition made use of ICT.

Finally, the administration of the questionnaire sought to analyze how important the use of ICT is in the learning process of these students, whether they used another tool linked to those resources, and whether or not they would recommend them to other people who are also learning Spanish.

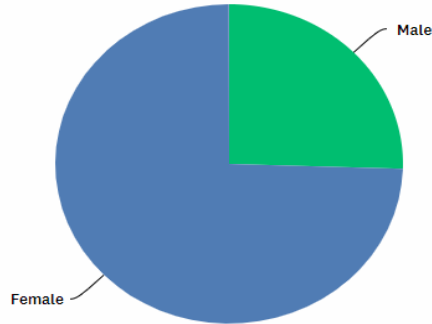
### 3.1 Subjects

The subjects that participated in this research were undergraduate and graduate students of the Department of Romance Languages and Literatures at the University of Missouri-Columbia. The undergraduate students participating in this research were part of several advanced Spanish courses. I selected two groups from advanced Spanish conversation classes, as well as advanced composition. One group was selected from an introductory literature level class. I decided not to include Spanish students from beginner level classes because many of these students take these classes as an elective course or as a requirement; therefore, some of them are not interested in learning the language. The graduate students selected were the Spanish and French graduate students in the department of Romance Languages and Literatures that were present in Fall of 2018 when the questionnaire was administered. There were a total of 51 respondents including graduate and undergraduate students. The percentage of undergraduate students was 72.55% (N=37) and graduate students 27.45% (N=14). The majority of the students who answered the questions were females, being 74.51% (N=38) of the participants against 25.49% (N=13) of males' respondents, as seen in Graphic 1:

### Graphic 1: Gender

#### Gender

Answered: 51 Skipped: 0

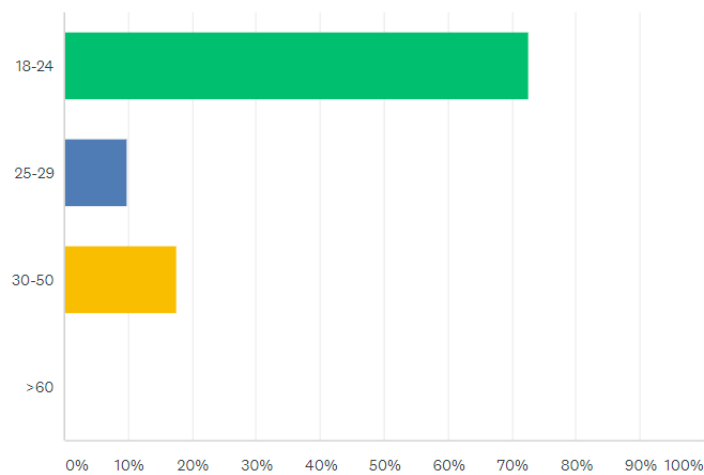


Regarding participants' age, they were divided into four age groups. Most of the participants were part of the first age group, 18-24. These participants made up 72.55% (N= 37) of all the responses. The second age group was 30-50, which held 17.65% (N=9) of all the responses. Finally, in third place, group 25-29 made up 9.80% (N=5) of all the responses. There were no participants in the age group over 60 years old, as it is demonstrated in Graphic 2:

### Graphic 2: Age

#### Age

Answered: 51 Skipped: 0

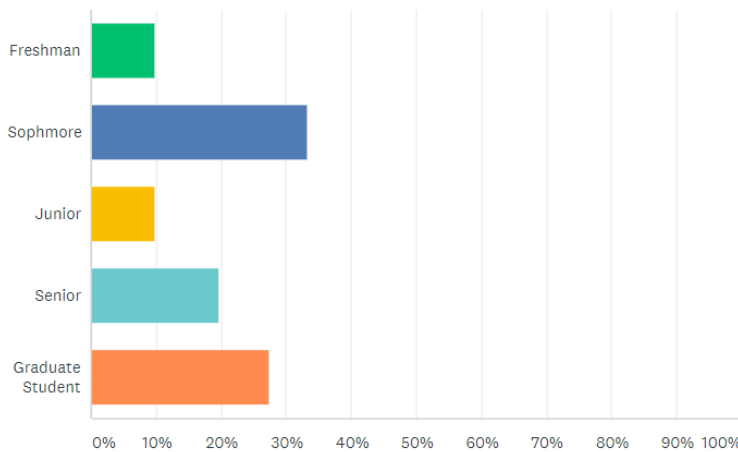


Finally, there were demographic questions in my research that dealt with the school year of the participants. Undergraduate students could be: freshman, sophomore, junior, or senior. Alternatively, if the participant was not an undergraduate student, there was an option to choose “graduate students”. Most of the respondents were sophomores, making 33.33% (N=17) of all participants. After that, seniors were 19.61% (N=10), followed by the same number of freshmen and juniors 9.80% (N=5). The percentage of graduate students participating in this research was 27.45% (N=14), as it is listed in Graphic 3 below:

**Graphic 3: School Year**

What is your school year?

Answered: 51 Skipped: 0



### 3.2 Research Instrument

### 3.3 Questionnaire

For data analysis, an online questionnaire was developed utilizing the online platform *SurveyMonkey*. Before conducting the research, the University of Missouri requires that all researchers go through intensive online training to be able to conduct research safely. After the authorization was granted, a questionnaire containing 13 questions was designed. Before taking

the questionnaire, students had to accept and sign a consent form to be able to respond to the questions. The questionnaire was available for a month during the Fall 2018. It took approximately thirty minutes for students to complete it.

The system generates a sharable link that was sent directly to the students and when participants finished filling the questionnaire, their answers were sent automatically to a database. The use of the online questionnaire was well accepted by the students and they were able to answer the questions at a convenient time and place. In addition, it was not necessary to download any kind of attachment, saving time, and making it much easier to use.

## CHAPTER: 4 DATA ANALYSIS

### Introduction

This chapter analyzes data collected to investigate and identify whether there are benefits for language learners who make use of different ICT in their learning process. The research questions were designed to: 1) Investigate how the process occurred, 2) How students would rank the level of importance of the use of technology in their learning process, 3) The language skills (listening, speaking, reading, and writing) developed while using them, and 4) The relation between the use of ICT and autonomy. In addition, I sought to understand how these tools have helped them to acquire a higher degree of proficiency, in general. As explained earlier, a questionnaire was designed to collect data. The questionnaire included a total of 13 questions. Questions 1 to 3 dealt with the demographic aspect of this research. Therefore, these questions were already discussed in the methodology section.

In question number 4, students had to choose the ICT they currently use. ICT was grouped in categories and examples of each category were provided. The categories students saw were: “language exchanging social networks”, “language-learning platforms”, “language-learning online communities”, “online resources”, and “cellphone apps for language learning”. There was also an “other” option in which respondents could provide their own answer. Online resources had 96.08% (N=49), followed by cellphone apps for language learning with 50.98% (N=26) of all the responses. The third highest category, language-learning online platforms, had 41.18% (N=21), followed by language-learning online communities with 39.22% (N=20). Next, the category “other” received 9.80% (N=5) and, lastly, language exchanging social networks showed 5.88% (N=3) of all responses. The answers students provided for the “other” category were: *Spanishdict*, *Youtube*, *Linguee*, *Quizlet* and *StudySpanish.com*.

For the next question, students had to rate the relevance of each of the previous categories (language exchanging social networks, language-learning platforms, language-learning online communities, online resources, and cellphone apps for language learning) on the following scale: 1-Extremely relevant, 2-Very relevant, 3- Somewhat relevant, 4- Neutral and 5- Not relevant. The following table (Table 3) is organized by relevance according to each student’s response.

**Table 3: Relevance**

<b>Resource</b>	<b>1-Extremely relevant</b>	<b>2-Very relevant</b>	<b>3-Somewhat relevant</b>	<b>4-Neutral</b>	<b>5-Not relevant</b>
<b>Online resources</b>	56.86 % (N=29)	11.76% (N=6)	9.80% (N=5)	11.76% (N=6)	9.80% (N=5)
<b>Language-learning platform</b>	9.80% (N=5)	23.53% (N=12)	47.06% (N=24)	13.73% (N=7)	5.88% (N=3)
<b>Cellphone Apps for language learning</b>	15.69% (N=8)	29.41% (N=15)	19.61% (N=10)	15.69% (N=8)	19.61% (N=10)
<b>Language-learning online communities</b>	9.80% (N=5)	17.65% (N=9)	11.76% (N=6)	27.45% (N=14)	33.33% (N=17)
<b>Language exchange social networks</b>	7.84% (N=4)	17.65% (N=9)	11.76% (N=6)	31.37% (N=16)	31.37% (N=16)

Taking into consideration the data from the table above, the relevance of each category can be classified as: 1-Most relevant for students: online resources 56.86 % rated as “extremely relevant”; following is cellphone apps for language learning with 29.41% that rated it as “very relevant”; third, the category chosen was language-learning platforms with 47.06% which was rated as “somewhat relevant”; in fourth place is language exchange social networks 31.37% which was the highest rate in the neutral relevance, and finally, language-learning online communities

received the highest rank in the “not relevant” category with 33.33% being the highest score in that category.

Question 5 of the questionnaire sought to gauge the frequency students utilized each of the categories mentioned before. This question asked how long students used ICT, giving them the following options: “daily”, “once a week”, “twice or three times a week”, “once a month” or “rarely use it”. The following table (Table 4) contains the individual responses for each category.

**Table 4: Usage Time**

<b>Resource</b>	<b>Daily</b>	<b>Once a week</b>	<b>Twice or three times a week</b>	<b>Once a month</b>	<b>Rarely use it</b>
<b>Online resources</b>	42.00 % (N=21)	12.24% (N=10)	30.00% (N=15)	4.00% (N=2)	4.00% (N=2)
<b>Language-learning platform</b>	4.8% (N=2)	12.24% (N=6)	20.41% (N=10)	22.45% (N=11)	40.82% (N=20)
<b>Cellphone Apps for language learning</b>	10.20% (N=5)	10.20% (N=5)	24.49% (N=12)	16.33% (N=8)	38.78% (N=19)
<b>Language-learning online communities</b>	2.00% (N=1)	12.00% (N=6)	10.00% (N=5)	4.00% (N=2)	72.00% (N=36)
<b>Language exchange social networks</b>	0.00% (N=0)	8.00% (N=4)	8.00% (N=4)	4.00% (N=2)	80.00% (N=40)

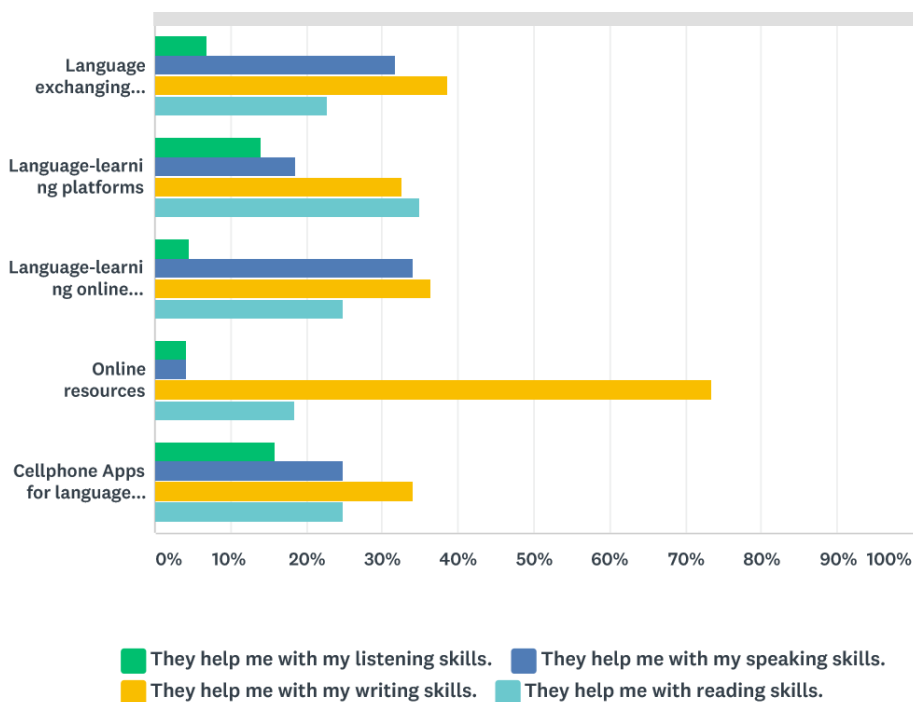
The numbers above show that students spend most of their time with online resources ranking number 1 with 42% of the “daily” category and number 2 with 20.00% in “once a week” category. It also ranked third in “twice or three times a week” category with 30%00 of the



responses. Finally, language-learning platforms was ranked the highest as used “once a month” and language exchange social network being the least used of all with 80% of the “rarely use category”.

Question 7 was designed to associate the use of specific ICT with the language skills students wanted to improve. Graphic 4 demonstrates how students responded.

**Graphic 4: ICT and Ability**



The table above demonstrates that most students use online resources to help them with their writing skills with 73.46% (N=36) of all responses. Online resources were also used to help students with their reading skills with 18.37% (N=9) of the responses, and finally, a tie was found between the listening and speaking categories, both with 4.08% (N=2).

Regarding to language exchange social networks, respondents reported that those help with their writing skills 38.64% (N=17), followed by speaking skills with 31.82% (N=14); in third,

these networks help students with their reading skills 22.73% (N=10) and listening skills with 6.82% (N=3) of the responses.

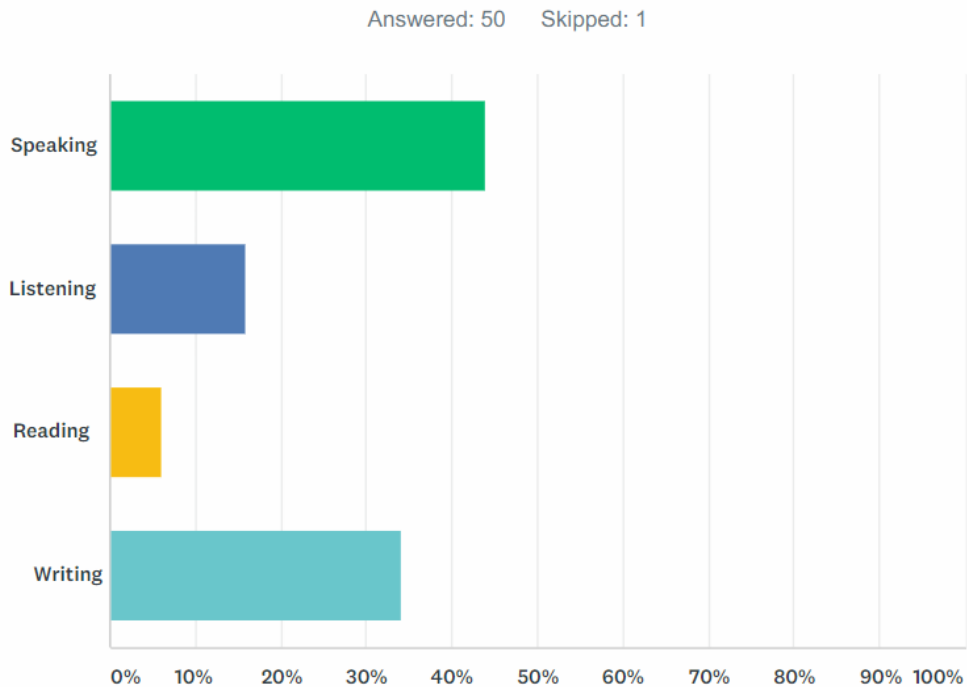
Cellphone apps for language learning were mainly used for students seeking help with their writing skills 34.09% (N=15), followed by a tie between speaking and reading skills with a percentage of 25% (N=11) for both categories. Lastly, these apps were used for students seeking help with their listening skills with 15.91% (N=7) of all the responses.

Language learning online communities had the highest ranking for students looking for help with their writing skills with 38.64% (N=17) of the responses. After that, speaking skills came in second with 31.82% (N=14) of the responses. Reading skills came in third with 22.73% (N=10), followed by listening skills with 6.82% (N=3) of the responses.

Lastly, language learning platforms were mainly used by students seeking help with their reading skills with a percentage of 34.88% (N=15), followed by writing skills with 32.56% (N=14), then 18.60% (N=8) with their speaking skills, and then listening skills with 6.82% (N=3) of the responses.

Question 8 asked students which of the following abilities (speaking, reading, writing, and listening) they sought most help with outside of the classroom. Graphic 5 below exemplifies how students responded:

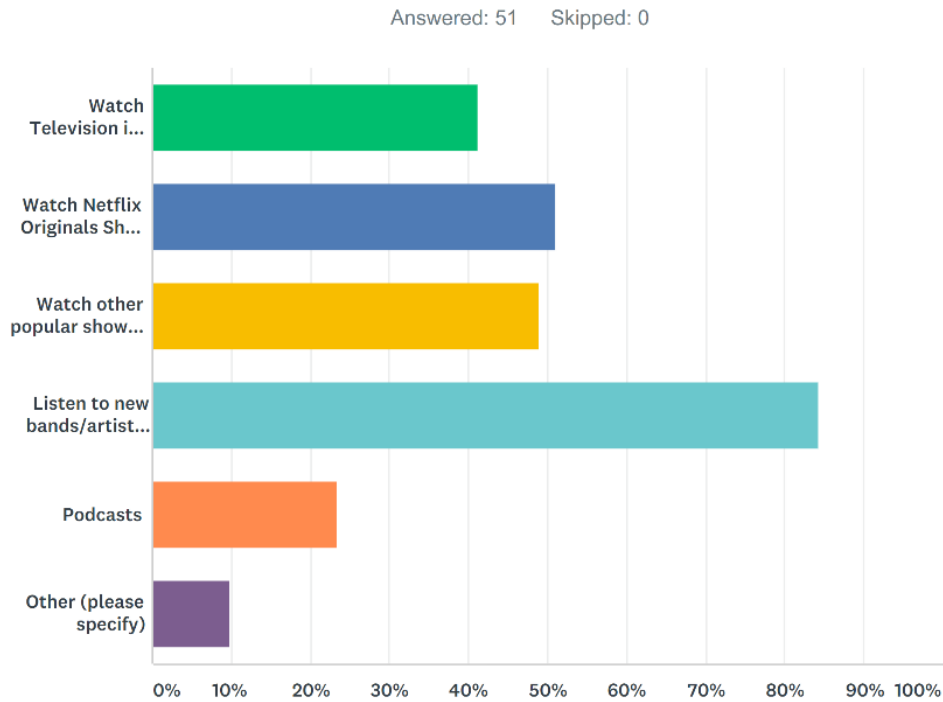
**Graphic 5: Abilities Outside the Classroom**



Students reported seeking most help outside of the classroom with their speaking skills 44% (N=22), followed by their writing skills with 34% (N=17). Thirdly, most students sought help with their listening skills outside of the classroom with 16% (N=8) of the responses, and finally, reading with 6% all of the responses.

Question 9 asked students if they used any of the following resources on their own: watching television in Spanish, including *Netflix* originals and other shows with Spanish subtitles or dubbing. It also asked if students listened to podcasts or to new bands/artists in Spanish. Alternatively, students could type their own answer by choosing “other”. Graphic 6 demonstrates how students responded:

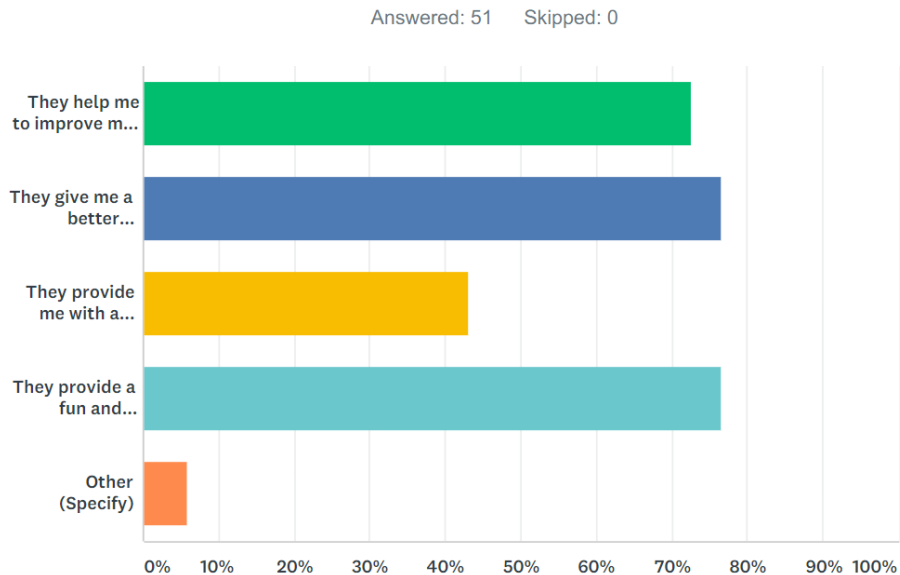
### Graphic 6: Other Resources



Participants chose “I listen to new bands/artists who sing in Spanish” as the main resource they use on their own with 84.31% (N=43) of the answers. The second alternative was “I watch *Netflix* originals shows in Spanish” with 50.98% (N=26). Following that, students chose “watch other popular shows with Spanish subtitles or dubbing” 49.02% (N=25) of the answers. In third, students chose “I watch television in Spanish” which had 41.18% (N=21) of all answers. In fourth place, “listening to podcasts” had 23.53% (N=12) of the responses. Finally, “others” was chosen by 9.80% (N=5) of the respondents. The students who selected “other” responded the following: *YouTube*, radio, church services, texting and calling natives, watching films that were already watched in the native language in the target language, reading newspaper and magazines, and repeating news from a new channel.

In question 10, students that had chosen any of the resources from question 9 had to select which of the following categories these resources would help them improve. The categories to choose from were: “They help me to improve my vocabulary”, “They give me a better understanding of how natives speak” (informal vocabulary and slang), “They provide me with me a broader perception of cultural aspects of Spanish-speaking countries”, “They provide a fun and authentic way of keeping learning the language when I am not in class”, and finally, students could also choose “other”. Graphic 7 illustrates how students responded:

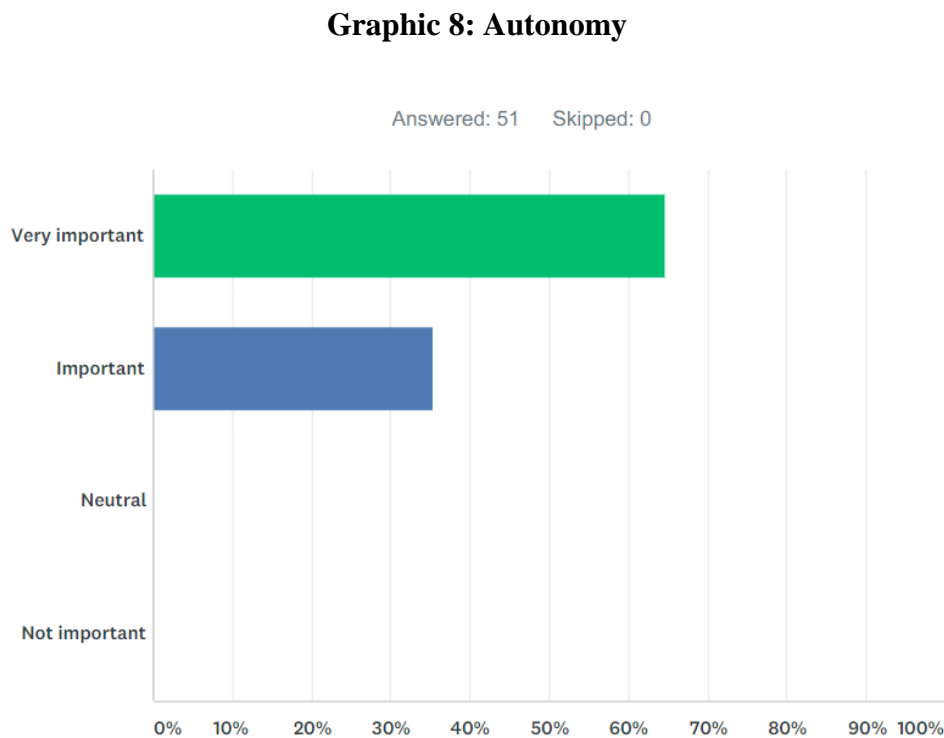
**Graphic 7: Resources Improvement**



With a tie of 76.43% (N=39) respondents chose both “They give me a better understanding of how native speak” and “They provide a fun and authentic way of keeping learning the language when I am not in class”. Next with 72.55% (N=37) respondents chose “They help me to improve my vocabulary”. Fourth, “They provide me with a broader perception of cultural aspects of Spanish-speaking countries with 43.14% (N=22) of the responses. Finally, “other” was chosen by

5.88% (N=3). Respondents that chose “other” added that “It helps me with my listening and comprehending what I’m hearing skills” and “They help me with my listening skills”.

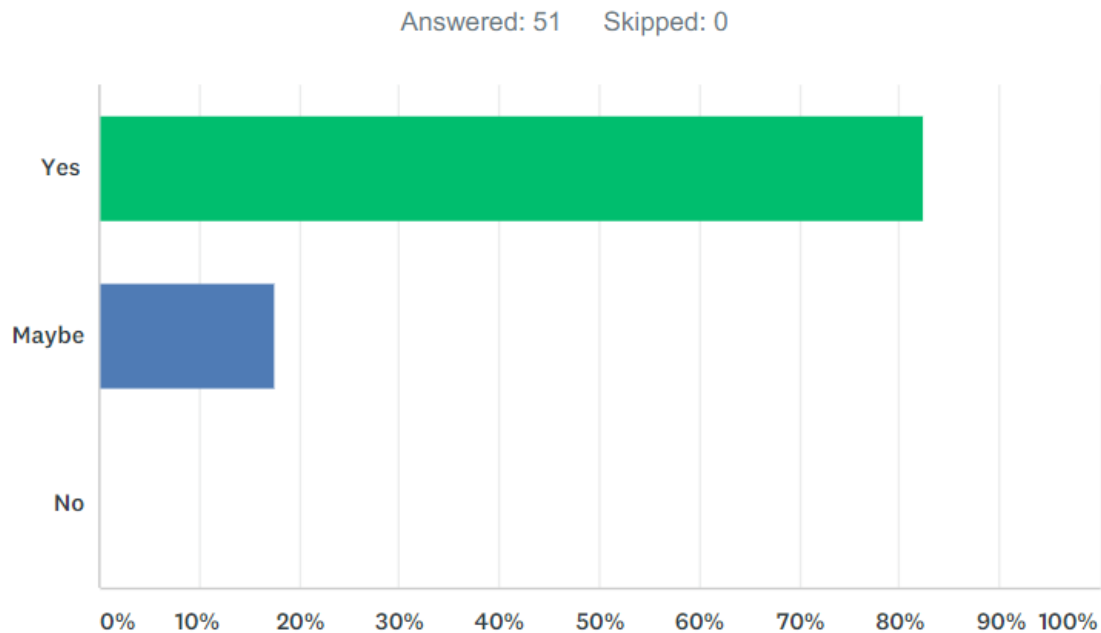
Question 11, asked how important it is to use out-of-the-classroom resources to develop autonomy while learning a new language. The options were: Very important, important, neutral, not important. Graphic 8 demonstrates how students responded:



Most of the respondents chose “very important” with 64.71% (N=33), followed by “important” with 35.29% of the responses. The other two categories “neutral” and “not important” had no responses.

Question 12, asked if students find it useful for professors to provide them a list of resources that can help improve language skills when they are not in the classroom. Students could choose “yes”, “maybe”, or “no” for that question. Graphic 9 shows how students responded:

**Graphic 9: Resources out of the Classroom**



Respondents mainly chose “yes” with 82.35% (N=42) and “maybe” with 17.65% (N=17.65).

Question 13 was an open-ended question that students could use to make comments about any ICT that were not addressed in the study, their own learning process outside of the classroom, and the importance of autonomy in their own learning process. The comments for this question will be discussed in the following section of this research entitled “Findings”.

## **CHAPTER 5: RESULTS AND CONCLUSIONS**

### **Introduction**

The data collected in this research correlates with results of previous studies such as Castells (2002), Hegarty (2004), and Plomp (2007) on the impact that ICT have in different aspects of society. It is evident that ICT is part of our daily lives and, therefore, is changing and shaping the way we communicate. In this this section, I will discuss specific findings of my study and relate them to my main research questions: 1) How can learners increase their fluency by using the many ICT available? 2) What technologies are currently being used by students, their relevance, use frequency, and 3) How students relate these technologies with the improvement of specific language abilities? The sections below discuss the answers to these research questions based on the students' responses of the questionnaire.

### **5.1 Benefits and Importance of using ICT in the learning process**

Many studies such as: Ntongieh (2016), Adams (2007), and Shortis (2001) report the use of ICT for language teaching/learning to be positive and stimulating both for students and the teacher. In my study, the data collected showed that all participants reported to use at least one kind of ICT to help them learn Spanish. This information correlates with a study of Barak (2006), which concludes that learning is an active process, and therefore, needs to be constantly stimulated. In Barak's study, ICT are pointed as having a fundamental role in stimulating and enriching the students' process of language acquisition.

In question 13, which was an open-ended question where students could address anything about their own learning experience, students reported some the benefits ICT brought to their process of L2 acquisition. The following part contains transcripts of students' answers. To



maintain the privacy of the interviewed students, they will be referred here with letters of the alphabet that will represent them.

Many students stated that it was extremely important to use ICT in their respective learning processes, claiming that some of the benefits of using them were direct contact with native speakers and a higher level of autonomy, which rarely occurred before. This new context of learning meant that the students not only had contact with the language through practice, but also with the culture of which the native speaker is part of. Student A reported that: "Among countless (possibilities) I emphasize the interaction with native speakers and even non-native speakers which is a great way to make me develop my oral skills". The student reported the importance of direct contact with native speakers of the language for the development of her oral competence, a factor that is rarely reached when this contact is minimal or non-existent.

Student A also emphasizes the importance of direct contact with native speakers to acquire new vocabulary, something that happens spontaneously when there is an interaction between a student and a native speaker. Student B emphasized the contact with new cultures and different pronunciations caused by variants of the language spoken in different countries. Regarding to this matter, she states that the use of ICT was important in her learning process because it made her perceive these differences between accents of different Spanish-speaking countries and different expressions, as well as enabling the knowledge of new cultures. According to a study by Bilial and Erdogan (2005), the dialectical connection between language and culture has always been a concern of L2 teachers and educators. The study concludes that the contact of the student with the culture of the language that is being studied is significantly beneficial in terms of language skills, raising cultural awareness, and changing attitude towards native and target societies. In this study, ICT was used by students to remove the physical barriers that prevented this direct contact.

Therefore, students were not only improving their language skills, but also establishing a cultural awareness towards the people who speak that L2.

In general, students attribute the importance of using ICT, to the following factors:

- 1- Easily connect students to a native speaker.
- 2- Connect students with other people who are learning a new language and want to practice.
- 3- They make students aware of cultural differences.
- 4- They give the opportunity for students to learn the different accents, and idiomatic expressions of different countries.
- 5-They provide students with different tools which they can use to study autonomously.

The last statement, from student C, summarizes what students have answered about the importance of ICT in their learning process, as described in the above items: "Well, using ICT is particularly extremely important for learning a new language, because I see these tools as "a cultural approximation" of the among languages and such as Spanish, German and others, so I can say that ICT was my mentor in my foreign language learning process".

## **5. 2 Improvements in Specific Language Abilities**

This section aims to analyze the improvements students reported when using ICTs as an auxiliary resource for language learning. For this purpose, I asked students to rate their improvement in the four different areas of language command (speaking, reading, listening and writing). Student D makes the following comment: "I believe that ICT was the foundation of my development in Spanish". This student's response, to a certain extent, sums up what the other students have answered about their level of proficiency. Students attributed their improvement to

the functional use of the language provided by ICT, and not only to the formal and theoretical study of a language in a classroom setting. On this matter, Krashen (1981) says that one must learn a language in all its communicative complexity. According to the author, acquisition requires meaningful interaction in the target language -- natural communication -- in which speakers are concerned not only with the form of their utterances but with the messages they are conveying and understanding.

Following Krashen's (1981) analysis, another reported improvement is the ability to start talking in a natural way and not hesitating to form sentences and small dialogues in the target language. Students reported to feel more confident in the way they spoke Spanish. Student E makes the following comment: "After start using the internet to speak with native speakers, I started to better understand what people were saying, and to better organize the grammatical structures when I have to speak, so that I can speak clearly and have a better intonation." Student E also selected "other" in question 10, where she had to specify any improvements in the use of resources on her own. The student commented on the importance of receiving active feedback when learning an L2. The advantage of receiving active feedback through the use of different ICT is something that Brick (2011) highlights in his study. Brick (2011) states that: "Consistent with a sociocultural view of SLA, receiving feedback from others, especially more proficient speakers, is a very important affordance that Social Network Sites for language learning can provide" (19). Similarly, a study by Liu et al (2013) attests to the benefits of the use of Social Network Sites for language learning. According to this study, some of the benefits associated with the use of this tool are: active feedback, language practice opportunities and expansion of users' network circle.

### 5.3 Variations between the grammar learned at the university and spoken by native speakers

The other topic addressed by students in the open-ended question ,13, was the grammatical difference they encountered when they had contact with native Spanish speakers through the use of ICT. This section has the purpose of analyzing the grammatical differences reported by students between the standard Spanish grammar, taught in the academic context, and the informal Spanish, spoken by most native speakers in specific situations. For instance, when a friend is greeting another friend in countries like Mexico, Argentina, Guatemala, etc. the expression “¿Qué onda?” will be used more commonly than “¿Cómo estás?” learned by students at the university. However, these expressions cannot be treated as if they were part of two different languages; rather, they need to be understood by students who are seeking communication when the standard variation is not being used.

In the academic context, it would be almost impossible to teach these variations due to the limited time and the amount of content professors must cover. Hence, the importance of the autonomous student. The student must use the different tools available to find, on his/her own, the differences between formal and informal variations, knowing how to navigate between them when necessary. When explaining about the different learning contexts, this is what students reported: "I believe that taking classes at college, we mainly or only learn the standard grammatical structures. On *Skype*, having contact with native speakers, I come across structures that are not part of what I have learned". Student F describes her contact with native speakers, who used other variations, different from the standard norm that was learned by her at the university.

Student F has a similar opinion about the grammatical differences between what she is learning at the university and the language produced by native speakers: "The Spanish that is taught in college is quite formal in relation to language used in the media, or movies and music, etc."

Student G recognizes that there are differences and suggests that in classes where conversation is the focus, the advanced conversation classes, students should not to be extremely concerned about only using the standard form of the language, since there are other variations. She argues that communication should be the focus of these classes, regardless of grammatical variants. The student states the following: "The grammar used at the university is "extremely formal", while native speakers write and speak colloquially. My own assessment is that the fact that we are in a formal institution, classes tend to follow a "standard pattern", but in practical conversation classes this should be ignored, this will make students feel more confident when talking". It is important to mention that only one comment above come from an undergraduate student. All the other comments were made by graduate students. Since the majority of the graduate students are not English native speakers, they might be referring to the experience they had when learning English in their countries of origin.

Finally, students also made the following comments to the open-ended question about their own learning experience that was not addressed in the survey. Student G says: "A good resource when I was learning English was *NPR* news, because they usually appear in two kind of formats: audio and transcription, so I was able to listen to the news and, after that, to check those parts that I wasn't able to understand. I also used *NPR* to learn how to write, taking a dictation. It was very difficult but it is an excellent and useful exercise". Students find positive the use of resources that allow them to listen and read a transcription at the same time. Many online tools available, as well as television channels, offer this feature.

Another student also shared her experience of learning outside of the classroom. Student G states: "I've tried to learn more than one language. Spanish I mostly learn outside class by watching *Netflix* movies in Spanish. I watch *Youtube* gaming in different languages. Both of those

are good for any language. Apps I only use for languages I'm not learning in a class because it's too hard finding one at my level". Student G is an autonomous student because she studies by herself outside of the classroom. However, she relates the difficulty of finding an app to help her with a language she is learning outside of the classroom and that is also appropriate to her level. Not knowing about different ICT available for language learning is something discussed in section 5.2. Students also reported the use of: *Wordreference*, *Spanishdict*, *Youtube*, *News in Slow Spanish*, *BBC*, *HelloTalk* and *Conjugemos.com*.

#### **5.4 Other Findings**

Data analysis demonstrate that students sought most help, outside of the classroom, with the improvement of their "speaking skills". Among the categories that were presented in the questionnaire (language exchanging social networks, language-learning platforms, language-learning online communities, online resources, and cellphone apps for language learning), language exchanging social network and language learning online communities would provide students with more tools designed specifically for the enhancement of the speaking skills.

Students rated language learning social networks and language-learning online communities as "neutral" and "not relevant", which directly correlates with a recent study of Lin, C.-H., Warschauer, M., & Blake, R. entitled "Language learning through social networks: Perceptions and reality" (2016). In this study, participants who used language learning social network sites reported to have achieved higher levels of proficiency when comparing to other ICT they have used. Nonetheless, participants who never used or did not know about the existence of LLSNSs ranked them very low. Therefore, researchers made the following conclusions. 1- Since LLSNSs are relatively new, only people who knew about them and used them frequently could attest to the benefits they bring to second language acquisition. 2- The participants who did not

know about the existence of LLSNSs<sup>1</sup> ranked them lower compared to other well-known ICT available. It is worth to note that the attitudes of the participants were also considered, and, an increase of self-confidence and motivation, was registered for those who used LLSNSs, according to the results of the research. The same conclusions can be inferred to the participants of this research to explain why LLSNSs were rated the lowest within different categories.

Participants also ranked the online resources they were familiar with as “extremely relevant” and spent most time daily and weekly using them. In the categories of “relevance” and “time of use”, LLSNSs also received the lowest scores, reported to never be used by 80% of the respondents.

Another interesting piece of information that relates this research to the study of Lin, Warschauer, and Blake (2016) is that respondents reported seeking most help outside of the classroom with their “speaking” ability. However, they associate the use of online resources with the improvement of their “writing” skills, followed by their “reading” skills. If students seek most help with their “speaking” skills, then the use of LLSNSs would be more appropriate. This discrepancy in the information analyzed demonstrates, once more, that students have limited information about the many resources available to their different needs in language learning. In question 11, in which students had to rate how important it is to use out-of-the-classroom resources to develop autonomy while learning a new language, most of students, (64.71%) rated it as “very important” and the rest of responds, “important” with (35.29%). Additionally, 82.35% students found useful to have a list of resources provided by instructors to help them learn outside of the classroom. These responses were mentioned here because they provide a suggestion to resolve the discrepancy mentioned before. At the university, languages instructors could research what are the

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<sup>1</sup> As mention earlier in CHAPTER 3, LLSNS refer to Language Learning Social Network Sites.

main ICT currently available for language learning and which ability each one of them would help improve the most. This list can be given to the students at the beginner of the semester, so they will be aware of resources that can be used on their own for extra practice or to improve a specific ability.

Finally, most participants of my study used online versions of resources that were only previously available in printed or physical form, such as dictionaries, grammar books, CDs and DVDs, etc. This transition is expected because students are looking for online versions of materials that have been extensively used for language learning. However, if students are only transferring physical versions of materials to digital ones, they are not taking full advantage of the many resources available, brought by different types of ICT. This is the same conclusion that a study by Hayes (2007) reaches. In Hayes's study, teachers were using some technological resources in class without developing any plans or goals for their use. These technologies were simply adopted to modernize older ones such as CDs or DVDs, for instance. In this sense, there were not visible benefits because they were just substituting one resource for another similar. Hayes clarifies the following: "Hence, when ICT is simply a substitute for these other technologies, the results are often unsatisfying for both teachers and students because of the limited availability and varying functionality of ICT" (394). These findings attest that the use of ICT by students or teachers should not be arbitrary. The benefits associated with the use of these resources were mainly seen by students and teachers who had clear and objective ideas on how these resources could assist their learning/teaching.



## Final Considerations

We live in a globalized world in which communication happens faster and more dynamically thanks to advances brought by new Information and Communication Technologies. Technology is becoming an integral part of the process of teaching/learning a second language due to its current expansion and availability. In this context, technological tools can be used to help students become autonomous and find new ways to learn a SL. Furthermore, the use of technology is applicable as a teaching resource to instructors, allowing them to dynamize their classes, which can result in a greater interest and, consequently, improve learning for students.

The data collected for this research demonstrated that students already used different ICT daily to improve their language-learning skills. Students reported that the use of online resources is of extremely relevance to their language-learning experience. However, as Castells (2002) constantly states in his books, technology is in the process of continuous evolution, which can be difficult to keep up-to-date. The data also show that students took advantage of the many ICT available to study autonomously. This decision is extremely important because, as it has been discussed throughout this study, the amount of input and time students are exposed to outside of the classroom are crucial for second language development and improvement.

The data collected also demonstrated that students used online versions of resources that have been previously linked to language acquisition. In general, students reported a positive experience from using ICTs in their language-learning process. Students who took full advantage of different ways of learning with ICT, reported even better outcomes. Those who used SSLN or *Skype* to speak with native speakers indicated a fast increase of their vocabulary, a broader understanding of different cultures, and an exposure to idiomatic expressions and slang that were learned naturally by them.

Nevertheless, the data also suggest that not all students might be aware of the new resources available to help them with specific language abilities. The apparent lack of correlation can be attributed to the constant emergence of new technologies that are not widely promoted. This finding suggests that a future investigation can be carried out to inquire how much students know about the new technologies available for the improvement of specific areas of second language acquisition.

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## Appendix A

You are invited to participate in a web-based online survey on how Technologies of Information and Communication (ICT) are used by students in order to make them autonomous and improve their language-learning skills.

This is a research project being conducted by Diogenes Santos a graduate student at the University of Missouri. It should take approximately 4-6 minutes to complete.

### PARTICIPATION

Your participation in this survey is voluntary. You may refuse to take part in the research or exit the survey at any time without penalty. You are free to decline to answer any particular question you do not wish to answer for any reason.

### BENEFITS

You will receive no direct benefits from participating in this research study. However, your responses may help us learn more about how the use of ICT can help students become autonomous, and therefore increase their fluency in the learning language process. Upon studying the results of this research, I intend to share the findings with professors and students so they can also take advantage of some of using ICT to improve their language skills.

### RISKS

There are no foreseeable risks involved in participating in this study other than those encountered in day-to-day life.

**CONFIDENTIALITY**  
Your survey answers will be sent to a link at SurveyMonkey.com where data will be stored in a password protected electronic format. Survey Monkey does not collect identifying information such as your name, email address, or IP address. Therefore, your responses will remain anonymous. No one will be able to identify you or your answers, and no one will know whether or not you participated in the study.

### CONTACT

If you have questions at any time about the study or the procedures, you may contact my research supervisor, Dr. Marcos- Llinásphone at 573-882-1508 or via email at marcosllinasm@missouri.edu.

ELECTRONIC CONSENT: Please select your choice below. You may print a copy of this consent form for your records. Clicking on the “OK” button indicates that

- You have read the above information
- You voluntarily agree to participate
- You are 18 years of age or older

1. Gender

Male

Female

2. Age

18-24

25-29

30-50

>60

3. What is your school year?

Freshman

Sophomore

Junior

Senior

Graduate Student

4. Do you use any of the following ICTs?

Language Exchange Social Networks

Language-learning platforms. Ex. *Duolingo.com*, *Busuu.com*

Language-learning online communities. Ex- *Linguaholic.com*, *wordreference.com*

Online resources. Ex. Online dictionaries, *Google translate*

Cellphone Apps for language learning Ex. *Duolingo*, *Busuu*

Other- Specify

5. Which of the following ICTs categories is most relevant to your learning process outside the classroom?

1-Extremely relevant

2-Very relevant

3-Somewhat relevant

4-Neutral

5- Not relevant

6. How often do you use these ICTs?

1-Daily

2-Once a week

3-twice or three times a week

4-once a month

5-rarely use it

7. Associate the use of these ICTs with the abilities you want to improve.

Language exchanging Social networks

Language-learning platforms

Language-learning online communities

Online resources

Cellphone Apps for language learning

8. For which of the following language abilities do you seek most help outside of the classroom?

1-Speaking

2-Listening

3-Reading

4-Writing

9. Additionally, do you use any of the following resources on your own?

1- Watch Television in Spanish. Ex. Univisión, Telemundo, CNN en español

2- Watch Netflix Originals Shows in Spanish. Ex. La casa de Papel, Club de Cuervos

3- Watch other popular shows with Spanish subtitles or dubbing

4- Listen to new bands/artists who sing in Spanish

5- Podcasts

Other- Specify

10. If you chose any of the resources above, select what they help you to improve on?

1- They help me to improve my vocabulary

2- They give me a better understanding of how natives speak. (informal vocab. and slang).

3- They provide me with a broader perception of cultural aspects of Spanish-speaking countries.

4- They provide a fun and authentic way of keep learning the language when I am not in class.

5- Other (Specify)

11. How important do you think it is to use out-of-the-classroom resources to develop autonomy while learning a new language?

1-Very important

2-Important

3-Neutral

4-Not important

12. Would you find it useful if your professor provided a list of resources that can help you improve your language skills when you are not in the classroom?

1-Yes

2-Maybe

3-No

13. Lastly, if you use any resource that was not addressed in this survey or have any comments about your own learning experience outside of the classroom, please use the box below to comment.