University of Southampton

Faculty of Humanities

School of Modern Languages

Blended Learning: An examination of EFL Teachers and Students' Use, Continuance Intention to Use, and Attitudes towards Information and Communication Technologies

by

María Georgina Fernández Sesma

ORCID ID 0000-0002-8981-7062

Thesis for the degree of Doctor of Philosophy

March 2020

University of Southampton

Abstract

Faculty of Humanities

School of Modern Languages

Thesis for the degree of Doctor of Philosophy

Blended Learning: An examination of EFL Teachers and Students' Use, Continuance Intention to Use, and Attitudes towards Information and Communication Technologies

by

María Georgina Fernández Sesma

The present study examines from a constructivist perspective the extent to which factors considered as key predictors of acceptance and use of technology contribute to EFL teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL. Moreover, it explores their actual use and continuance intention to use ICTs to develop the four language skills and their sub-skills within the blended learning modality in a tertiary context. The study adopts the Unified Theory of Acceptance and Use of Technology (UTAUT model) as a theoretical framework. However, it uses a version of the model adapted to the context of the investigation that included constructs such as *performance expectancy, effort expectancy, social influence, ICT self-efficacy,* and *facilitating conditions* as the independent variables, and *attitudes, actual use, and continuance intention to use* as the dependent variables. Research participants were 70 EFL teachers and 468 EFL students from the University of Pitic (pseudonym) located in northern Mexico. The study adopts a mixed-methods approach and a concurrent triangulation strategy. The methods for data collection were surveys, focus group interviews, and classroom observations.

Multiple regression analysis revealed that all the predicting variables examined contribute positively to attitudes. However, performance expectancy followed by effort expectancy was the strongest in contributing to their attitudes towards the use and continuance intention to use ICTs. Besides, results showed that attitudes, actual use, and continuance intention to use are highly correlated. Although these results do not indicate causality, they suggest that teachers and students' attitudes may influence their actual usage and continuance intention to use ICTs.

Moreover, qualitative results helped better understand and extend the information obtained through quantitative methods.

In addition, the study found that most teachers and students show positive attitudes towards the use of ICTs, and they are willing to continue to use them in the teaching and learning of EFL. The way they use ICTs gave evidence that they are aware of their affordances and limitations, and capable enough to use them. They have developed learning autonomy, making their own decisions about which technologies to use and how to use them, and they look for support when using new or more complex ICTs. The study also discovered that the patterns of use, electronic devices, and online resources change in the face-to-face and online modes depending on the learning objectives and the type of activity. However, there is a need for implementing ongoing training programs that help teachers teach in an integrated way since technology is mainly used to teach grammar and vocabulary, either in in-class activities as in out-of-class activities. Also, this study suggests eliminating the barriers identified that hinder teachers and students' use of ICTs, as well as removing those that specifically affect the area of language learning with technology.

Keywords: blended learning, information and communication technologies (ICTs), attitudes, actual use.

Table of Contents

Table of Contents

Table of Tables

Table of Tables

Tale of Figures

Tale of Figures

Research Thesis: Declaration of Authorship

Print name: María Georgina Fernández Sesma

Title of thesis: Blended Learning: An examination of EFL Teachers and Students' Use, Continuance Intention to Use, and Attitudes towards Information and Communication Technologies

I declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;

2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;

3. Where I have consulted the published work of others, this is always clearly attributed;

4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;

5. I have acknowledged all main sources of help;

6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;

7. None of this work has been published before submission.

Signature: Date: March 2020

Acknowledgements

With deep gratitude, I would like to thank my thesis supervisor, Dr Ying Zheng, for her continuous support and patience during the elaboration of my doctoral thesis. This study would not have been possible without her encouragement and guidance. I thank my daughters Edith and Eunice for their unconditional love; their support and understanding have been very valuable to me. I would also like to express my gratitude to my parents, who have always been my best teachers.

I would like to thank my dear friend Julio Cesar Cortez for the long hours he spent teaching me statistics. Thanks to my colleagues at the University of Pitic, Ana Lourdes Partida, Emma Lilia Fierros, Miguel Angel Rodriguez, and Juan Manuel Martinez for having always been there with a helping hand. A special mention goes to my friend and boss Diana Raquel Castillo, for understanding my concerns and needs throughout this journey. I want to express my profound appreciation to Dr Rocio Dominguez and Dr Erika Alvarez who generously read and made suggestions to improve the instruments for data collection. Thanks to my students Carlos Moreno, Kimberly Lopez, and Jesus Muñoz, who kindly helped me administer online and paper surveys. My sincere gratitude to the EFL teachers and students who participated in this study, whether it be in focus group interviews, class observations, or responding to a questionnaire.

I would like to express my sincere gratitude to the Ministry of Education in Mexico, through the Program for Teacher Professional Development for the Higher Type; for having provided the funding necessary to carry out my studies at the University of Southampton.

Last but not least, I would like to thank the British Council, from which I received the British Council Assessment Research Award 2016. Having won this award has been important to me in many ways. Firstly, it helped me gain self-confidence and see research as a challenging, but pleasant activity. Secondly, thanks to the sponsorship from the British Council I could disseminate my research advances in the 43rd International Convention MEXTESOL: Dynamic Teaching: New Trends in ELT, held in Monterrey, Mexico in 2016.

I dedicate this piece of work to the all mighty God, who gave me the strength to persevere and finish my thesis with happiness.

List of Definitions

Information and Communication Technology (ICT) is a generic term for all types of media used in communicating information. In an educational setting, ICT may involve electronic devices, the Internet, television broadcasts, as well as printed or handwritten notes (Chandler and Munday, 2011).

Information technology (IT) is the technology involving the installation, support, and use of computer systems, software, and networks for the processing and distribution of data (Merriam-Webster.com, 2016).

ICT literacy is the use of digital technology, communication tools, and social networks to function in a knowledge society' (ETS, 2002).

The blended learning environment is a learning context that combines face-to-face instruction with technology-mediated instruction (Graham and Dziuban, 2008).

Blended learning: '…those in which a significant amount of seat time, that is, time spent in the classroom, is replaced with online activities that involve students in meeting course objectives' (Glazer, 2012, p. 1).

Blended learning working definition in the context of this study: blended learning refers to any combination of face-to-face instruction with information and communication technologies. It may take place on campus or off-campus to facilitate and enhance the teaching and learning of EFL (Whittaker, 2013).

Behavioural intention is a measure of the degree of a person's intention to perform a specified future behaviour (Davis *et al.,* 1989).

Competence: a dynamic combination of knowledge, comprehension, capacity, and skills (Beneitone *et al.*, 2007).

Communicative competence: the overall ability of a person to integrate grammatical knowledge and sociolinguistic knowledge to use the language appropriately (Hymes, 1972).

The Unified Theory of Acceptance and Use of Technology (UTAUT) is an empirically validated model that synthesizes eight competing models of acceptance and use of information technology (IT) and their extensions, to understand individual intentions to use and usage of IT. UTAUT has

four core determinants of intention to use and usage (i.e., performance expectancy, effort expectancy, social influence, and facilitating conditions) and four moderators of key relationships (i.e., voluntariness, experience, age, and gender) (Venkatesh *et al.*, 2003).

In this study, the acronyms ICT or ICTs are used to refer to information and communication technologies because the usage of the term varies in the literature (Zuppo, 2012). As well, ICT or ICTs are used interchangeably with technology, new technologies, digital technology, and computers. In addition, EFL teachers and students can be referred to as teachers and students.

List of Abbreviations

AT	Attitudes
AU	Actual Use
CAI	Computer-Assisted Instruction
CALL	Computer-Assisted Language Learning
CIU	Continuance Intention to Use
C-TAM-TPB	Combined Technology Acceptance Model and the Theory of Planned Behavior
CEFR	Common European Framework of Reference for Languages
ECT	Expectation-Confirmation Theory
EE	Effort Expectancy
ELT	English language teaching
ENFACE	Enfocado en el Aprendizaje y en las Competencias del Estudiante (Focused on student's learning and competences)
ESL	English as a Second Language
ESQ	English Students Questionnaire
ETQ	English Teachers Questionnaire
FC	Facilitating Conditions
ICTs	Information and Communication Technologies
IDT	Innovation Diffusion Theory
INEGI	Instituto Nacional de Estadística, Geografía, e Informática (National Institute of Statistics, Geography, and Informatics)
IS	Information System
IT	Information Technology
MM	Motivational Model
MPCU	Model of Personal Computer Utilization
PE	Performance Expectancy
SCT	Social Cognitive Theory
SE	Self-Efficacy
SI	Social Influence
SPSS	Statistical Package for the Social Sciences
Ss	Students
TAM	Technology Acceptance Model
TAM 2	Technology Acceptance Model 2
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
Ts	Teachers
UNESCO	United Nations Educational, Scientific, and Cultural Organization.
UTAUT	Unified Theory of Acceptance and Use of Technology
WWW	World Wide Web

Chapter 1 Introduction

The report prepared for the UNESCO 2009 World Conference on Higher Education, presented an analysis of how universities have responded to academic changes and new trends at the tertiary level. The report states that the context where higher education takes place has changed influenced by the globalization, the mass enrolment to higher education of previously excluded population groups, the students' mobility, the dominance of the English language in teaching materials and/or instruction in distance education, and the impact of new technologies among others (Altbach *et al.*, 2009). These factors constitute some of the challenges that higher education faces in the 21st century. In this new context, information and communication technologies (ICTs) represent an essential part of the academic transformation, where the Internet has changed how knowledge is transferred. Although many developing countries still struggle with high costs and difficulties related to the implementation of ICTs, they consider that technologies are necessary to facilitate access to higher education (Altbach *et al.*, 2009). In the last section of the report, concerning the future trends of global higher education, is pointed out that:

> The impact [of information and communication technologies] can be seen in the communication of knowledge through e-mail, blogs, wikis, and podcasts; the rapid expansion of distance education, electronic publication of scientific journals and books, and to some extent academic management. The new technologies will continue to affect all aspects of higher education. (Altbach *et al.,* 2009, p. 168)

International changes in education encouraged the emergence of new learning modalities, such as blended learning. Current educational trends demand from the teacher new ways of teaching, and for the student, new ways of learning. In this learning scenario, the easiest way to move forward and adapt to the modern educational context is by applying ICTs to the teaching and learning processes (Pareja-Lora *et al.,* 2016). Ramaley (2013) highlights the scope of ICTs by saying that 'As we progress deeper into the twenty-first century…learning can occur anywhere, at any time, at any age, for a variety of reasons, sometimes in cyberspace and sometimes in 'real space' and often in a blend of both…' (Ramaley, 2013, p.145). Previously, Chapelle (2001) observed that '…anyone concerned with second language teaching and learning in the 21st century needs to grasp the nature of the unique technology-mediated tasks learners can engage in for language acquisition…' (p. 2). Hinkelman and Gruba (2012) seem to agree with Chapelle's assertion by pointing out that as universities gain pace in the adoption of blended language learning, the processes involved provide opportunities to research how an action made in one aspect of

language learning influences another. For instance, how the action of blogging helps students increase their abilities to write a journal.

Although ICTs have served to transform the way languages are taught and learned (Farr and Murray, 2016), it is important to note that their incorporation into the educational field has not been without problems since they demand more skilled teachers in the use of technology (Attwell and Hughes, 2010). Drigas and Charami (2014) argue that 'We should moreover consider that teachers are not always familiar with the resources available and that they do not always receive training on the tools they will be expected to use in their classes' (p. 08). Yet, the demand for technology-literate teachers to prepare students in the use of ICTs has grown (Hubbard, 2009), and nowadays, part of their responsibilities is to be skillful enough in the use of the latter to ensure students' assimilation of knowledge (Hashemi and Aziznezhad, 2011).

Different opinions about the usefulness of ICTs abound at the political, educational, and societal level. ICTs are considered agents of change that have the potential to improve the quality of education (de Aldama and Pozo, 2016). Furthermore, since education has been transformed from a teacher-centred to a student-centred approach, the primary goal of ICTs is to facilitate the teaching and learning processes (Rabah, 2015). However, to have a deep understanding of the impact of ICTs, Coll (2008) suggests examining the different activities that teachers and students can perform thanks to the possibilities offered by ICTs such as communication, exchange, access, and processing of the information. Coll points out that the mediating role of new technologies between students and content, teacher and content, teacher and students, and among students leads researchers to ask about the actual use of such tools.

1.1 Stating the problem

Because the accelerated development of ICTs has revolutionized all levels of language teaching pedagogy (Floris, 2014), new technologies (e.g., computers and the Internet) have become nearly ubiquitous in the teaching of foreign languages in many countries (Kia and Ahmadi, 2015). Nowadays, EFL teachers and students use gadgets ranging from desktop computers and laptops to mobile devices such as smartphones or touch-screen displays both in public places and in the classroom (Jung, 2015). The great variety of online resources allows learning to be generated interactively through real-world situations and increases students' learning possibilities and computer skills (Beauchamp and Kennewell, 2010). In this regard, Haines (2015) asserts that the features of ICTs contribute to facilitating language learning; however, she emphasises that '… supporting language learning is less about the technology and more about the uses to which the

technology is put' (p. 166). Similarly, Motteram (2013) points out that what is essential is to know how technologies are being used in the classroom and how faculty mediate that usage.

An important aspect to consider when exploring the teaching and learning of EFL within the blended learning modality is the teachers and students' ability to identify the affordances (or possibilities of action) of ICTs, and how they can be successfully integrated into the classroom to support learning (Kessler, 2010; Sharp, 2011; Golonka *et al.*, 2014). Haines (2015) affirms that developing an awareness of the affordances and constraints of ICTs, based on research and pedagogical experience, may help to have a better understanding of the different ways in which ICTs can be used. Numerous studies on language learning through technology support Haines' assertion (e. g., Golonka *et al.*, 2014; Jacobi, 2017; Lianjiang, 2017; Wang, Petrina and Feng, 2017; Awada and Diab, 2018) (see section 2.4.1. Affordances of ICTs). Although several investigations have shown that the successful integration of the affordances of ICTs may lead to more effective technology usage and have a positive impact on the learning outcomes, there is still scant information about the possibilities of action of different technologies and how their particular features could be used in specific contexts to improve learning (Conole and Dyke, 2004).

Research has found that when the affordances of ICTs are not perceived, they cannot be acted upon to enhance learning (Kirschner *et al.*, 2004; Osiurak, Jarry and Le Gall, 2010). Comas-Quinn (2011) points out that the teachers' new role in the blended learning environment demands their understanding of the affordances of new technologies and the acceptance of their new identity. Her study about the impact of a blended learning course on university teachers revealed that they were not aware of the affordances of blogs for language learning; therefore, they were not interested in using them. In another study on Indian teachers' awareness of and attitude towards using ICTs, Bindu (2017) concluded that teachers from different majors had positive attitudes towards technology; however, several factors like the lack of access to infrastructure, lack of training, lack of time, and lack of support prevented them from being aware of the opportunities of ICTs in education. Melki *et al.* (2017) found similar results regarding the lack of knowledge of the affordances of new technologies. They investigated how university professors used the learning management system (LMS) Moodle and found that, even though professors recognized the value of LMS in education, they needed additional support and training to thoroughly appreciate the usefulness of this tool to foster active learning.

The current scenario shows that there is still a lack of knowledge about how technologies can be effectively used to support language teaching and learning (Floris, 2014). Pachler (2014) says that because ICTs are constantly changing, 'their use in educational settings is often predicated on a

certain degree of faith in the potential of a particular tool, application or service by early adopters' (p. 1). In the same vein, research indicates that the use of ICTs is frequently mismatched with the pedagogical objectives (Albirini, 2006; Sharp, 2011). Egbert *et al.* (2011) suggest that it is necessary to match technological materials with the students' needs for them to be successful in their learning context. However, due to the fact that EFL teachers are consumers of a plethora of teaching materials available on the Internet, sometimes they do not know how to use them (Dashtestani, 2014), and as a result, the 'current uses of technologies often do not take full advantage of the medium' (Conole and Dyke, 2004, p. 121).

Investigators continue to explore the incorporation of ICTs into the educational setting. In the field of language learning with technology, researchers have sought to explain the actual use of ICTs by examining several aspects related to their usage. For example, a) through self-reported questionnaires to assess EFL teachers and students' perceptions of their current use of ICTs in educational settings (e. g., Nomass, 2013; Abunowara, 2014; Izadpanah and Alavi, 2016; Zinan and Teoh Boon Sai, 2017); b) in terms of perceived usefulness of technology, frequency of use, and proportional time that EFL teachers and students spend using specific technologies (e. g., Aydin, 2013; Tri and Nguyen, 2014; Tuncay, 2014; Hughes and Tulimirovic, 2015; Şahin Kızıl, 2017); and c) some studies exploring the relationship between the individual's behavioural intention and use behaviour of ICTs (actual use) in the area of EFL, suggesting that the higher the individuals' intention to use digital technologies, the higher the probability that they use them (e. g., Jung, 2015; Van De Bogart and Wichadee, 2015; Wiyaka, Mujiyanto and Rukmini, 2018). Moreover, qualitative investigation has explained technology usage in the general knowledge field (e. g., Crook *et al.*, 2010; McKnight *et al.*, 2016) and in the field of EFL (e. g., Izadpanah and Alavi, 2016; Sherman, 2016), but research is still scant in this area.

Although the studies presented in the above paragraph have revealed valuable information about the use of technology in English language learning, this information neither explains the usage nor the continuity of use of ICTs in-depth. Therefore, it is still uncertain which ICTs are being used by university EFL teachers and students within the blended learning modality. It is also unclear how they are actually used and their impact on the current and future teaching and learning processes of EFL. Thus, one of the aims of this study is to fill this gap in the research literature by examining EFL teachers and students' actual use and continuance intention to use ICTs to develop the four language skills (listening, reading, speaking, and writing) and sub-skills (grammar, vocabulary, and pronunciation) within the blended learning modality in higher education.

In addition, research has demonstrated that the successful usage of ICTs in educational settings depends on many factors. A significant one is the teachers and students' attitudes towards the use of ICTs in the teaching and learning processes (Kia and Ahmadi, 2015; Bindu, 2017; Hockly, 2016). In this regard, attitudes can be a facilitating or hindering factor that provides support or obstructs the use of technology to learn a foreign language effectively. For this reason, they are considered a fundamental indicator of technology integration (Kim, 2002). Woodrow (1992) points out that any change in educational practice necessitates the development of the stakeholders' positive attitudes towards digital technology. Huang and Liaw (2005) went further in their explanation on the influence of attitudes in the use of technology, by claiming that '…no matter how sophisticated and capable technology may be, its effective implementation depends upon users having a positive attitude towards it' (p. 730).

Dörnyei (2001, p. 12) says that according to some theories of human behaviour 'we will be more motivated to do something out of our own will than something that we are forced to do' (Self-Determination Theory). He asserts that the individual's likes and dislikes, i.e. attitudes, are crucial in deciding what a person will do and will not do (Theory of Planned Behavior). In the case of this research, it is important to mention that in the university where the study takes place, the adoption of the blended learning modality was established regardless of the teachers and students' opinions; therefore, the use of ICTs in teaching and learning of EFL is mandatory.

Attitudes play a central role in several theories and models of acceptance and use of technology, sometimes as a direct determiner of technology use or moderating the relationship between other factors and actual use (Dwivedi *et al.*, 2017) (see section 2.7.1). However, few studies have examined to what extent factors related to the acceptance and use of technology contribute to the teachers and students' attitudes towards the use of ICTs in language teaching and learning. Similarly, there is a limited investigation about the relationship between EFL teachers and students' attitudes, actual use and continuance intention to use technology. Therefore, the researcher also considers relevant to address these gaps in the literature through this study.

The present research consists of a case study carried out in a Mexican university that has adopted the blended learning modality for language learning. Examining the factors that contribute to the teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL, as well as the relationship between teachers and students' attitudes, actual use and continuance to use technology may be beneficial to making informed decisions about the selection and systematic application of new technologies in the area of EFL.

1.2 Purpose of the study

The purpose of this study is twofold. Firstly, it seeks to establish to what extent factors considered as key predictors of acceptance and use of technology contribute to the teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL. Experts in the field have declared that the continuous propagation of ICTs has motivated the exploration of factors that could influence the use of technology through different theories of information technology (IT) in organizational and educational contexts (Thompson *et al*., 1991; Taylor and Todd, 1995a). The factors of interest in this investigation are technology attributes (i.e., performance expectancy and effort expectancy); contextual factors (i.e., social influence and facilitating conditions), and individual characteristics such as attitudes and ICT self-efficacy (Dwivedi *et al.*, 2017).

Factors related to technology attributes focus on task achievement (performance expectancy) and the ease of use of technology (effort expectancy) (Venkatesh *et al.*, 2003). In this sense, people's perception of the benefits they will obtain if they use technology and its low complexity strongly motivates them to use it (Davis *et al.*, 1992; Thompson *et al.,* 1991). Performance expectancy and effort expectancy have been demonstrated to significantly influence the integration and use of ICTs in general education and the teaching and learning of EFL/ESL (e. g., Mumtaz, 2000; Liu, 2013; Cakir and Solak, 2014; Huang, Lin and Villarreal, 2014; Zhao, 2014; Fageeh, 2015; Jung, 2015; Tan, 2015; Dizon, 2016). For example, Dizon (2016) found that technology must have a useful function for EFL students to accept it. Moreover, he said that students are willing to tolerate some complications related to ease of use, as long as the affordances of technology helped them finish the task successfully. In another study, Liu (2013) discovered that EFL students considered *Moodle* as a useful tool. The platform offered students a variety of learning materials that helped them improve their English grammar and reading skills. Besides, Liu points out that a clear and comprehensible interface allowed students to get familiar and carry out the tasks on the platform quickly.

As for contextual factors (social influence and facilitating conditions), these factors may affect the acceptance and use of technology because they are related to the surrounding environment. That is, people's decisions of adopting and use technology may be influenced by the whole social environment (Davis *et al*., 1989; Fishbein and Ajzen, 1975; Thomson *et al.,* 1991). Research studies have given evidence that social influence affects the integration and use of technology (e. g., Liu, 2009; Liu, 2013; Jung, 2015); Yueh, Huang and Chang (2015). For example, Yueh *et al.* declared that 'if students perceive the importance of their own usage of the *Wiki* system to others, such as teammates and teaching assistants, it will motivate them to continue using the

system in the future' (2015, p. 25). Another study conducted by Liu (2009) on social influence and the use of technology obtained similar results. Liu determined that students' parents, friends and classmates' positive attitudes towards ICTs mainly influenced the EFL college students' decision to use technology.

Regarding the facilitating conditions, these provide information related to aspects of the environment in which individuals use new technologies, such as the provision of technical support and institutional regulations (Thompson *et al.,* 1991). Empirical studies have demonstrated that facilitating conditions impact the use of technology (e.g., Liu, 2013; Attuquayefio and Addo, 2014; Fageeh, 2015; Liu and Huang, 2015). Attuquayefio and Addo (2014) found that students expect technical support and training on how to use new technology, which demonstrates that this factor is a necessary condition for students to use the ICTs available for learning. Likewise, Liu and Huang (2015) found that facilitating conditions significantly influenced the integration of *Google Docs* to support peer translation; since students' training on how to use this new tool was essential.

Concerning the individual characteristics (attitudes and ICT self-efficacy) that may be influential in explaining users' behaviours (Dwivedi *et al.*, 2017), previous research shows that the use of ICTs may be positively or negatively influenced by factors that affect the teachers and students' attitudes towards them (Cox *et al.,* 2000). In this respect, several theories related to the uptake of information technology seek to explain why some people use technology and their feelings of affection towards them (i.e., attitudes). In the theory 'Behaviour relating to reasons' developed by Davis *et al.* (1989), the users' attitudes appear as an important determiner of the intention to use and actual use of technology. As for ICT self-efficacy, empirical research shows that EFL teachers are being encouraged to integrate ICTs to support students' learning. However, new technologies continue to be a source of fears and insecurity for many teachers who demonstrate little self-confidence in the use of technology (Dudeney and Hockly, 2007). Due to ICT self-efficacy particularly influences teachers and students' attitudes towards the use of technology (Compeau and Higgins,1995; Sabzian and Gilakjani, 2013), this study also explores the relationship between these two factors.

In addition to the factors described above in this section, the researcher considers it relevant to explore other factors not included in theories that could influence the acceptance and use of technology such as the lack of time, lack of technological literacy, and lack of knowledge of online resources among others. Exploring these factors, also known as barriers (see section 2.5), is necessary because they may affect EFL teachers and students' attitudes towards ICTs, and consequently, their actual use.

The second purpose of this study is to establish EFL teachers and students' actual use and continuance intention to use ICTs in order to develop the four language skills and sub-skills within the blended learning modality at a tertiary context. Examining the actual use and continuance intention to use ICTs is crucial because, as Egbert *et al*. (2011) say, to continue to advance in the field of language learning through technology it is necessary to have a clear idea of where this learning is standing right now. In this sense, knowing whether the teaching of the four language skills and sub-skills with the use of ICTs is being carried out in an integrated way (Oxford, 2001), will provide evidence of the impact of technology on this area and give some insight into the links between expectations of technology use and its current use.

In the present study, the Unified Theory of Acceptance and Use of Technology (UTAUT model) (Venkatesh *et al.*, 2003) will serve as the theoretical framework (see section 2.7). A version of the model adapted to the context of this study (see section 3.3) will be tested to examine the contribution of the factors performance expectancy, effort expectancy, social influence, facilitating conditions, and ICT self-efficacy to the teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL. Moreover, the study also explores the actual use of ICTs as well as whether there is a relationship between teachers and students' attitudes, actual usage, and continuance intention to use.

1.3 Research questions

The following research questions are addressed in this study:

1. To what extent do the constructs included in the adapted version of the UTAUT model (performance expectancy, effort expectancy, social influence, ICT self-efficacy, and facilitating conditions) contribute to EFL teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL?

2. What is the relationship between teachers and students' attitudes, actual use, and continuance intention to use ICTs in EFL teaching and learning?

3. In what ways do the ICTs most frequently used within the blended learning modality impact the teaching and learning of EFL?

    a) To what degree are ICTs being used in both in-class and out-of-class activities?

4. How do EFL teachers and students actually use ICTs within the blended learning modality?

5. What barriers do EFL teachers and students encounter when using ICTs in the blended learning modality?

The above research questions will be explored using a mixed-method approach through a case study conducted in a Mexican university, in which EFL is taught using ICTs within the blended learning modality. Since teachers and students are co-participants in the teaching and learning processes, it may be beneficial to know what ICTs they are using in both in-class and out-of-class activities and how (Papayianni, 2012). Examining EFL teachers and students' attitudes towards ICTs is essential because it might help to better select and use new technologies within the blended learning modality (Gilbert, 2015), and consequently, facilitate the students' development of language skills and sub-skills.

1.4 Context of the study

The present study takes place at the University of Pitic (pseudonym), a public university located in northern Mexico. It has five campuses distributed in the state of Sonora: Seri, Papago, Mayo, Kino, and Esperanza (the names of the campuses are pseudonyms). The University offers twenty-six undergraduate and three graduate degrees through four educational areas such as a) Engineering Sciences and Technology; b) Agricultural Sciences; c) Health Sciences, and d) Administrative-Economic Sciences and Humanities. The institution makes efforts to improve the teaching and learning processes through the use of technology and the teaching of English as a foreign language in all the programmes. The Institutional Development Programme (IDP) 2010-2015 of the University of Pitic states that to consolidate a quality education it is necessary to improve the operation of the educational model by emphasising a) the mastery of a foreign language; b) the use of information and communication technologies, and c) the achievement of competencies in students (IDP, 2010-2015). The actions to enhance the operation of the educational model (see section 1.4.2) resulted in the adoption of the blended learning modality to improve the teaching and learning processes of all the majors offered by the university.

As stated in an unpublished document of the university entitled *Manual de Buenas Practicas* in 2012 (In English: Manual of Good Practices), teaching English as a foreign language falls into the institution's responsibility of helping students develop professional competences and promoting their integration into the labour market at a national and international level. As part of the students' comprehensive education, becoming proficient in the English language is mandatory to achieve the competencies required by the university to finish the program and consequently have more opportunities for international mobility and professional development in the future.

English as a foreign language is a subject included in all the programmes offered by the university, with the exception of the English Language Teaching (ELT) major. The School of English is responsible for the administration of the English courses at the university and these are delivered within blended learning modality. Because of this, all classrooms are equipped with desktop computers and have an Internet connection. English as a foreign language is taught using the Smrt English course (Hereafter Smrt or Smrt English course) (www.smrtenglish.com). It provides a blended learning environment where teaching and learning are carried out in face-to-face and online modes. In this particular case, students receive face-to-face instruction four days a week in which they also work online during class. Electronic devices connected to the Internet (e.g., smart TV and computer) are available for the teacher and students to use. Teachers can project the lesson's topics, interactive exercises, and videos of Smrt as well as a variety of online resources linked to Smrt such as dictionaries, news clips, educational videos, and interactive learning tools among others. Similarly, numerous teaching materials from the Internet can be used by the teachers to enrich the class.

In the classroom, a desktop computer is assigned to each student to work individually or in pairs. However, they are allowed to use their own electronic devices too. In this modality, collaborative work can take place with or without the use of technology. For example, students participate in activities to develop speaking skills (e.g., conversations or role-plays), or in collaborative writing using *Google Docs*. At all times, the teacher or facilitator, monitors the students' work providing scaffolding (Chapelle, 2003). One day a week is dedicated to working online in out-of-class activities assigned by the teacher. In this mode, communication can take place synchronously or asynchronously between teachers and students and among students (Liu and Huang, 2015). Moreover, the availability of Smrt allows students' access to the course in their free time to do homework and dedicate time for self-study (see section 3.4).

1.4.1 The selection of the Smrt English course

Since 2003, the University of Pitic has promoted the national and international mobility of students and teachers through the use of networks and the signing of agreements with foreign and national institutions. Among the opportunities that the International Student Mobility Program offers are English summer courses in Canada and the United States (IDP, 2010-2015). The College of Canada (pseudonym) located in Vancouver, B. C., Canada, was one of the schools selected by the university as a new destiny in the mobility programme in 2009. Students had the opportunity to learn English with the Smrt English course used at the college. In 2012, the

University of Pitic and the College of Canada signed a general collaboration agreement to use Smrt English to teach English at the university (unpublished document).

The selection criteria of the Smrt English course were based on two aspects. First, the College of Canada was working with the Student Media Relevant Training (SMRT), a language teaching method of its own design that includes the use of digital technologies. This innovation in English language teaching encouraged the university authorities to adopt Smrt. Second, the existing relationship between the two institutions facilitated the agreement reached by both parties to use Smrt English in Mexico. This action was carried out by the university to improve students' learning outcomes, increase the quality of English teaching, and respond to employers' demands for professionals competent in the English language and the use of technology, as established in its educational model ENFACE (see section 1.4.2).

1.4.2 Educational Model of the university

The educational model of the university is called *Focused on Students' Learning and Competences* (its acronym in Spanish is ENFACE). ENFACE is grounded in the Tuning project, which serves as a basis of comparison for vocational training based on competences (González and Wagenaar, 2006). It encompasses the teaching process in both face-to-face and online environments. In both cases, it presents the use of technological resources that allow multiple learning experiences and communication (ENFACE, 2007). The educational model ENFACE incorporates three fundamental areas:

a) An educational approach centred on the student and learning. This area is based on constructivist theoretical perspectives such as meaningful learning (Ausubel, 1968) and social constructivism (Vygotsky, 1978). Students have an active role in the search, analysis, and integration of knowledge with the guidance of the teacher (Díaz and Hernández, 2002).

b) The development of competences in vocational training. Competency development occurs through the application of individual and group activities focused on building new knowledge. Contents involve situations that emulate reality for which competencies are considered the solution.

c) Curricular flexibility. This area refers to the flexibility of time and spaces, tasks, and work relationships. It also involves the adaptation to new learning situations and contexts and the mobility to different regions or countries to work with people from other parts of the world (Marcelo and Vaillant, 2009).

Currently, the university provides the faculty with training in educational innovation, information and communication technologies, and knowledge transfer to different situations and contexts within a competency-based approach. As a result of these actions, the entire teaching staff has basic-intermediate training in the use of the educational platform *It's Learning* for all majors and *Smrt* for the teaching of the English language.

1.5 The use of ICTs in Mexican education

Mexico has been implementing actions to enable the use of new technologies in different spheres of society. Proposals, policies, and strategies have been oriented to include new technologies in educational programs (Lopez and Flores, 2010). In 2000, the federal government created the Sistema Nacional e-México (in English, e-Mexico National System) to give ICTs a national character and reduce the digital divide between governments, businesses, households, and individuals (Lopez and Flores, 2010). Hernández (2011) points out that among the objectives of the e-Mexico National System were:

a) To promote Internet connectivity at affordable prices among the low-income population to achieve their integration to the economic and social development of Mexico.

b) To offer training in the use of ICTs in the areas of education, culture, health, and economic development.

Actions to guarantee and facilitate access to technology continue in present times. In 2017, the *National Institute of Statistics, Geography, and Informatics* (its acronym in Spanish is INEGI) reported that in the second quarter of 2016, 59.5% of the population of six years or more used the Internet in Mexico. Internet usage is associated with people's level of studies. For example, of the population with higher education (undergraduate or graduate), nine out of ten people have incorporated the use of the Internet in their daily activities, representing a total of 94.1% (INEGI, 2017).

The National Development Plan 2019-2024 of the Mexican government states that it is necessary to improve the quality of education and make a higher investment in science and technology in order to increase the development of the national human capital. To achieve this goal, the national strategy proposed by the federal government consists of installing wireless Internet throughout the country to ensure the access of all regions of the country to education and productive activity.

1.6 The researcher's point of view

The researcher of this study is interested in examining the factors that may contribute to EFL teachers and students' attitudes towards the use of ICTs in EFL teaching and learning as well as in exploring their actual usage and continuance intention to use ICTs in the future. Her interest started when the University of Pitic, where she works as an EFL teacher, adopted the blended learning modality to teach English as a foreign language in 2012. As often occurs with innovation, the transition from using textbooks and supplemental material in the teaching of English as a foreign language to teaching it with the use of ICTs was not without problems. Some teachers accepted the new modality while others rejected it and openly expressed their disagreement about stopping using the textbook. However, the teaching of English as a foreign language with technology became compulsory at the university, and the EFL teachers were the ones in charge of writing the new didactic sequences using the contents of Smrt. These actions resulted in English courses adapted to a new learning modality that combines face-to-face instruction and online learning.

Given the years since the university adopted the blended learning modality, the researcher seeks to examine in what ways factors related to the attributes of technologies, context, and individual characteristics contribute to teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL. She also aims to explore the uses to which new technologies are put both inside the classroom and outside it, and the teachers and students' intention to continue to use ICTs in the future, since this could serve to guide the selection and improve the systematic use of new technologies, providing some insight into the links between expectations of technology use and its actual use.

1.7 Overview of the study

This thesis consists of six chapters described as follows:

Chapter 1 presents the research problem, research questions, and the purpose of the study. It also includes the context of the study, which comprises aspects related to language learning and technology, the educational model of the university and introduces the Smrt English course. The chapter also presents the use of ICTs in Mexican education, the researcher's point of view and it finishes with an overview of the study.

Chapter 2 highlights the importance of exploring how ICTs are being used in the teaching and learning of EFL within the blended learning modality. It presents definitions of blended learning, learning theories that support the application of ICTs, and explains the importance of understanding their affordances and limitations in educational settings. Additionally, it underscores the importance of attitudes towards ICTs as a factor that may positively or negatively influence their usage in EFL and future use. This chapter also presents the UTAUT model and notes the importance of exploring how technologies are being used. It briefly describes the theories and models in which UTAUT is grounded and gives a short explanation of the role played by attitudes in some of the models. Also, the chapter introduces the constructs included in a version of the UTAUT model adapted to the context of the study.

Chapter 3 includes a broad explanation of the selection of a mixed-methods approach adopted in the study. Besides, it presents the version of the UTAUT model adapted to the context of this study, its constructs and relationships of interest. This chapter explains the functionality of the Smrt English course utilised within the blended learning modality at the university where the study took place. It also presents the instruments, participants, data collection and data analysis procedures, as well as ethical considerations.

Chapter 4 presents the findings of the quantitative data gathered through the following survey instruments: English Teacher Questionnaire (ETQ) and English Student Questionnaire (ESQ).

Chapter 5 reports on the research findings of the focus groups and classroom observations carried out with EFL teachers and students.

Chapter 6 presents the key findings in the light of the relevant literature. Following the triangulation approach (Laws, *et al.*, 2003), this section compares the key findings of the teachers and students´ questionnaires, focus groups, and classroom observations to answer the research questions. This chapter presents the implications, significance, and limitations of the study as well.

Chapter 2 Literature review

2.1 Introduction

This chapter provides an extensive literature review on the use of ICTs in the teaching and learning of EFL within the blended learning modality in higher education. Section 2.2 explains how ICTs have transformed the teaching and learning practices in both general education and language learning. The section includes several definitions of the term blended learning, the ambiguity of the concept, and the different forms it may adopt to introduce the type used in the research site. Furthermore, it explains the concepts of attitudes and self-efficacy regarding the use of ICTs in language learning, as well as describing the relationship between learning theories and new technologies, particularly, cognitive and sociocultural constructivism. Additionally, the benefits and challenges of using ICTs in the blended learning modality are discussed in sections 2.3 and 2.4, respectively.

Afterwards, section 2.5 introduces the theoretical framework of the study, which is the Unified Theory of Acceptance and Use of Technology (UTAUT). It starts out describing some of the theoretical models reviewed by the researcher before selecting the UTAUT model to frame the study. Next, section 2.6 briefly presents the theories and models in which UTAUT is grounded and includes some commentaries on the role played by attitudes in some of the models. This section also explains the constructs and moderating variables of the UTAUT, as well as the constructs added to the model in order to adapt it to the context of this study. Moreover, the chapter provides examples of empirical studies that have used the UTAUT model in the general knowledge area and the field of EFL. Finally, section 2.7 includes a summary of the chapter.

2.2 Information and communication technologies and language learning

The integration and effect of using new technologies in teaching and learning processes have aroused the interest of policymakers, educators, and researchers around the world (Combes *et al.*, 2018). Nowadays, many higher-level institutions seek to obtain the benefits offered by a range of technologies in education. Even so, there is an ongoing need to examine teachers and students' usage of ICTs in terms of their new roles in the digital era, their attitudes towards ICTs, and the

resources provided by universities in a technology-saturated environment (Combes, Pagram and Gulatee, 2018; Forkosh-Baruch and Avidov-Ungar, 2019). As Lawrence and Tar (2018) point out, the implementation of new technologies in education requires institutional conditions that enable the transformation of teaching practices such as institutional policies, workshops, time and funding allocation, and infrastructure among others (Lawrence and Tar, 2018). Moreover, the effective use of ICTs needs the development of skills of the actors involved, as well as pedagogical aspects related to technology usage for teaching and learning (Becuwe *et al.*, 2017). In this regard, monitoring teachers and students' technology ownership and use and holding an adaptive approach to both technology and pedagogy fall into the responsibilities of the 21st-century university (Combes *et al.,* 2018).

Information and communication technologies (ICTs), on which distance learning, e-learning and online learning are dependent, are used in blended learning to integrate them into traditional teaching (Norberg, 2017). The research literature shows that blended learning makes an extensive use of ICTs to increase EFL learners' interest and motivation, promote interactions with teachers and peers, provide multiple sources of authentic and relevant language learning materials, and the means for organizing course content and interacting with students (Ushida, 2005; Scida and Saury, 2006; Motteram and Sharma, 2009; Arteaga, 2011; Pop and Slev, 2012; Golonka *et al.*, 2014).

ICT (or ICTs) is a generic term that encompasses many computing devices and technology tools (Sumalatha and Ramakrishnaiah, 2007; Zuppo, 2012). The number of applications of ICTs in different contexts makes it difficult having a universal definition of the term since it 'revolves around the devices and infrastructures that facilitate the transfer of information through digital means' (Zuppo, 2012, p. 13).

In the area of language learning through technology, Tri and Nguyen (2014) say that ICTs involve the usage of desktop computers, laptops, handheld computers, and the Internet tools associated with them (e.g., email, websites, and social networking sites) by EFL teachers for class preparation and delivery. Similarly, Davies and Hewer (2012) contend that in the context of language teaching and learning, where the computer plays a central role, ICTs comprise a number of different software applications for general use (e.g., word processors and presentation software), for modern language learning (e.g., programs especially designed for language learning), and communication (e.g., email, software, and Web browsers) among others.

For the purposes and scope of this study, the term ICTs will be understood as those communication devices such as computers, laptops, smartphones, cellular phones, and tablet computers that use Internet tools (e.g., e-mail, videos, video conferencing, social networks, chats, blogs, websites) for the teaching and learning of English as a foreign language within the blended learning modality (Tri and Nguyen, 2014).

At the time of writing, the area of language learning with technology has diversified into many fields such as interactive and collaborative technologies, corpora and data-driven learning, computer gaming, and tailor-designed tools among others; thus, the teaching and learning of foreign languages has become a more complex area (Farr and Murray, 2016). The gradual change of students' interaction with software took place through the following stages: from the 50s to 70s, learning activities consisted of repetitive language drills and computers were conceived as mechanical tutors (Warschauer and Healey, 1998). From the 90s onwards, students' interaction with software became more focused on the social and pragmatic aspects of language (e.g., as in the task-based approach) allowing for the integration of language abilities and ICTs in the teaching and learning processes (Torsani, 2016).

Nowadays, EFL teachers and students interact with software in a variety of ways. For example, a) teachers may use *Automatic Speech Recognition* to help students enhance pronunciation (Golonka *et al.*, 2014); b) EFL students can improve their oral presentation abilities by using *Google Earth* and *Wiki tools* (Awada and Diab, 2018); c) *3D Virtual Worlds* programs such as *OpenSimulator* can enhance learner presence through the use of avatars and other artefacts (Wang *et al.*, 2017); d) students may use *Video Composing* or *Audio Podcasting* to produce texts by combining images, words, and soundtracks (Lianjiang, 2017); and e) students' oral abilities can be developed through *Online Discussion Forums* (Jacobi, 2017) (see section 2.4.1). Still, technological innovations demand a significant redesign of the existing pedagogy and curriculum and a sustained collaborative leadership; which implies overcoming the challenges that blended learning faces such as institutional policies, resources, action plans, and faculty support (Garrison and Vaughan, 2008; Joosten *et al.*, 2013; Riley *et al.*, 2013; Vaughan *et al.*, 2013).

The importance of adopting technologies for pedagogical purposes is widely recognized in the area of language teaching (Whittaker, 2013). In this regard, some reflective practitioners have used the phrase 'pedagogy before technology' (Beetham and Sharpe, 2007, p. 03). Researchers highlight the importance of understanding the actual use of new technologies since there has been a tendency to focus only on technology and not on how it is being used in teaching and learning. Simply adding technology to the educational process is not enough; teachers should

know how to incorporate the new technologies into their teaching (Mishra and Koehler, 2006). In the same vein, Hubbard (2009) says that because computers have become part of society's everyday life and the educational field, 'the question is no longer whether to use computers but how' (p. 1).

However, despite researchers' interest in investigating the actual use of ICTs, few studies have examined the teachers and students' actual use and continuance intention to use ICTs in the teaching and learning of EFL, particularly within the blended learning modality in higher education. Hence, this study aims to fill in this gap in the existing research literature and provide some insight into the use and future use of ICTs in the field of language learning with technology.

2.2.1 Blended learning: the ongoing integration of ICTs into education practice

Researchers have explored the 'sustainable integration of ICTs into mainstream education, which is sometimes referred to as [blended learning] BL' (Norberg, 2017, p.iii). Among the different names given to the combination of traditional and online modes of instruction (e.g., blended learning, mixed-mode, hybrid, or online-supplemented), blended learning is maybe the most commonly used (Skrypnyk *et al.*, 2015). Blended learning, or 'a mixing of online activities with face-to-face classes' (Owston, 2018, p. 66), has been widely adopted in higher education (Dziuban *et al.*, 2018) and some authors have referred to the term as the 'new traditional model' (Ross and Gage, 2006, p. 167) or the 'new normal' in education (Norberg *et al.,* 2011, p. 207).

Because of the overabundance of blended learning definitions, researchers have attempted to identify in the literature a broad definition of the term that encompasses its two central elements, namely online and face-to-face instruction (e.g., Mayadas and Picciano, 2007; Garrison and Vaughan, 2008). In the context of traditional education, Skrypnyk *et al.* (2015) say that 'face-to-face classes refer to the cohorts of students able to commit to on-campus instruction presented in conventional brick and mortar classrooms' (p. 58). The course content is presented orally or in writing with little or no online components. That is to say, face-to-face instruction may include traditional and web-facilitated courses, wherein the latter ones use technology to facilitate what is essentially a face-to-face course (Allen *et al.*, 2016).

Online learning is the other mode of instruction in blended learning. In educational settings, the term online learning is commonly used to refer to the Internet or the World Wide Web (WWW) to improve the teaching and learning processes (Gedik *et al.,* 2013). Online learning is understood as the learner's interaction with content, people, and resources over the Internet without the

presence of a teacher (Means *et al.,* 2014). This learning mode may take place synchronously when students interact in real-time (e.g., web conference, voice over Internet protocol -Skype, chat, instant messaging), or asynchronously when students communicate through email or participate in online discussion forums (Watson *et al.*, 2013; Stein and Graham, 2014). Concerning online and distance learning, it is essential to make it clear that they are not similar. The latter one includes other technologies since it dates back to when teaching was given by exchanging letters before the spreading of computers and the Internet (Means, Bakia and Murphy, 2014; Gorbani, 2015; Kentnor, 2015).

These two learning modalities are not necessarily opposed at the tertiary level teaching and learning (Szeto, 2014). On the contrary, through the combination of the face-to-face and online modes students can benefit from enhanced instruction, opportunities for collaboration, and timely interactions within a more productive learning environment (Garrison and Kanuka, 2004; Singleton, 2013; King, 2016).

2.2.2 Blended learning definition

The term blended learning started to be used in the business world in the late 1990s. Since then, it has gained importance in higher education (Friesen, 2012). The meaning of blended learning has changed over time; nonetheless, from 2006 onwards, the concept is accepted as '… systems [that] combine face-to-face instruction with computer-mediated instruction' (Graham, 2006, p. 05). Graham points out that this definition better reflects the meaning of blended learning because it includes two modes of instruction historically separated (face-to-face and online learning). Besides, it highlights the central role of computer-based technologies in this learning modality (Graham, 2006).

More recent definitions reflect the evolving nature of ICTs and the blended learning modality. For Laurillard (2016), blended learning is 'a mix of traditional and digital technologies that are blended together in a way that helps learners learn more productively' (para. 1). Laurillard acknowledges the different forms blended learning may adopt by saying the way digital technologies and traditional instruction are combined is what helps learners use their time better and achieve more. She asserts that the main properties of digital technologies such as storing information, immediate access, presentation of learning materials in a variety of media formats, and feedback are crucial for learner's success (Laurillard, 2016).

As in Laurillard's definition, Norberg (2017) focuses on the properties of information and communication technologies, but also on their affordances to create new ways to access higher education. He proposes a time-based strategy for blended learning that offers students learning opportunities in synchronous and asynchronous modalities with a de-emphasis on teaching and learning places. Norberg (2017) defines blended learning as 'the ongoing long-term integration of ICTs into the normality of education practice which may also affect how this normality is perceived and constructed' (p. 26). He considers that this is a way of freeing thought from the limitations represented by a physical place or technology used in other interpretations of blended learning.

In the area of language learning with technology, early definitions of blended learning were very similar. Experts on the topic said that a blended language course combined a face-to-face classroom component with computer-assisted language learning (CALL) (Neumeier, 2005; Dudeney and Hockly, 2007; Sharma and Barrett, 2007; Stracke, 2007). The term 'technology' substituted CALL because it covers a wider range of recent technologies (Fitzpatrick, 2004). However, the term most commonly used in current times is 'information and communication technologies', as it better reflects the potential of new technologies to facilitate the participation of teachers and students in worldwide exchanges and communication (Hockly, 2016).

Hockly (2018) says that researchers and practitioners have reached a consensus on what the term might mean in the area of ELT. For Whittaker (2013), for example, blended learning in ELT symbolises a change in what is being blended currently in terms of online or offline activities and materials through computer technology, instead of denoting a whole new approach to teaching and learning. In the context of this study, blended learning refers to any combination of face-to-face instruction with information and communication technologies. It may take place on campus or off-campus to facilitate and enhance the teaching and learning of EFL (Whittaker, 2013).

2.2.3 Differences in the interpretation of the concept of blended learning

To obtain accurate information of the growth of blended learning and explore the use of digital technologies in higher education, in 2016 the Campus Technology magazine administered the 'Teaching with Technology' survey to faculty members of different universities across the United States, revealing that among fully online, blended, or exclusively face-to-face courses, blended learning is the teaching modality that prevails in higher-level institutions (Schaffhauser and Kelly, 2016). Similarly, Allen *et al.* (2016) stated that chief academic officers are in favour of blended learning courses and consistently rate them as superior to purely online courses. Furthermore,

the 2017 New Media Consortium Horizon Report indicated that blended learning and collaborative learning are essential to driving technology adoption in higher education in the short term (i.e., one to two years) (Adams Becker *et al.*, 2017).

As seen in the above paragraph, general education research on blended learning can be overwhelmingly positive in reporting the benefits of this still emergent learning modality (Harrington, 2010); nevertheless, blended learning is more complex in practice since its conceptualisation continues to be ambiguous and controversial (Oliver and Trigwell, 2005; Hofmann, 2011). On this, Oliver and Trigwell (2005) point out that the term blended learning is meaningless and suggest that it should be redeemed. They contend that 'without a common conception of its meaning, there can be no coherent way of synthesising the findings of studies, let alone developing a consistent theoretical framework with which to interpret data' (p. 24).

In contrast, Driscoll (2002) says that 'blended learning means different things to different people' (p.1) and that it is precisely the variety of definitions that gives the term potential. Sharpe *et al.* (2006) appear to agree with Driscoll's assertion. They contend that the lack of a consensus definition of the term may be one of its strengths, as 'it allows institutions to adapt and use the term as they see fit, and to develop ownership of it' (p. 18). Nevertheless, the lack of a universally accepted definition of blended learning has made tracking its growth a difficult endeavour (Driscoll, 2002; Sharpe *et al.*, 2006; Graham, Woodfield and Harrison, 2013; Picciano, Dziuban and Graham, 2014; Porter *et al.*, 2014). The issue becomes complex due to the current lack of systematic documentation of who the faculty are and what they actually do in blended learning courses in higher education (Dziuban *et al.*, 2016; Dziuban *et al.*, 2018).

On this subject, Graham *et al.* (2013) say that the lack of information of teaching practices in blended environments is because the adoption of this modality has occurred with individual faculty, and not at an institutional level. Another reason given by the authors is that, perhaps, many institutions are in the initial stages of blended learning adoption. These stages were classified by Graham *et al.* (2013, p. 07) in the Blended Learning Adoption Framework as:

a) Awareness/exploration (stage 1), were individual faculty explore the use of blended learning techniques in their classes, but there is no institutional strategy toward blended learning.

b) Adoption/ early implementation (stage 2), characterized by the institutional adoption of blended learning strategy and practices to support its implementation.

c) Mature implementation/growth (stage 3), in which well-established blended learning strategies, structure, and support are essential to university operations.

In addition, the variety of configurations blended learning can adopt may lead to erroneous interpretations of its effectiveness. Dziuban *et al.* (2015) analysed the meta-analyses conducted by Means *et al.* (2010) and Means *et al.* (2013) that compared students' learning outcomes in fully online or blended learning courses and face-to-face instruction. Although the results of both studies slightly favoured blended courses, the researchers expressed concerns about the generalizability of findings because the configurations of the blends were not equivalent, and this could lead to confusing conclusions about the impact and effectiveness associated with blended learning environments. The conclusions of Dziuban *et al.* (2015) coincide with the assertions of Waha and Davis (2014) and Akkoyunlu and Soylu (2008) regarding the existence of different blends in different learning contexts. Waha and Davis (2014) concluded that 'the "right blend" is different for each student, dependent on their learning style, and circumstances' (p. 179). Therefore, the researchers agree that the 'right blend' is contextual, and it depends on different areas of content, different proportions of online and face-to-face instruction, and on different students (Akkoyunlu and Soylu, 2008; Ryan *et al.*, 2016).

In the context of this study, blended learning holds an unusual blend within a multi-modal environment. Multi-modal delivery uses more than one mode either as a requisite to access the program or as an option for students (Smith *et al.,* 2006). This particular blend includes online and offline work with the teacher in the classroom, as well as synchronous or asynchronous interaction online outside the campus. Although the physical seat time has been reduced the lead mode is face-to-face (see section 3.4.)

Regardless of the ambiguity of the term blended learning (Oliver and Trigwell, 2005), the lack of precise information about its growth and the lack of knowledge of what factors may lead to improved learning outcomes (Graham, 2013; Moskal *et al.*, 2013), there is a continuing interest among researchers in exploring how blended learning is impacting teaching and learning (Dziuban *et al.*, 2018). This dynamic process demands significant changes in curricular content, pedagogy, ICT infrastructure, student behaviour, faculty attitudes, and organizational conditions (Brown, 2016).

Investigators continue to explore the relationship between blended learning and cognitive, affective, and behavioural components of students as well as its transformative potential for the faculty. In this sense, blended learning leads researchers and practitioners to reflect on the

properties of information and communication technologies and the factors that affect their implementation and use (Dziuban *et al.*, 2018).

2.3 The importance of attitudes in language learning with ICTs

Empirical research shows that some factors impact the use of ICTs in educational settings. Hockly (2016) classifies these factors as 'micro' (i.e., at the individual level) and 'macro' (e.g., government educational policies). Among the micro factors, the teachers and students' attitudes towards the use of ICTs in language learning top the list. Hockly says that the influence of attitudes on other elements related to the use of ICTs is challenging since they can positively or negatively affect the use and future use of technology. Bouchefra and Baghoussi (2017) and Gilakjani and Leong (2012) went further and argued that the teachers' positive attitudes towards the use of ICTs not only impact their teaching practice but their students' opinions, and in turn, their future decisions about adopting those technologies.

Numerous studies give evidence that attitudes influence an individual's use and continuance intention to use ICTs. According to Khine (2001), an 'attitude' is a mental state of preparation based on an individual's experience that influences their response to a situation. For example, Hue and Ab Jalil (2013) found that university lecturers recognized the potential benefits of using multimedia presentations, web browsers, computer projection devices, course management tools, and email after having incorporated them into their teaching practice. Lecturers developed positive attitudes towards ICTs and expressed their willingness to continue using them. In the same vein, Alzahrani and O'Toole (2017) assert that students' adoption and use of a new learning approach such as blended learning may be affected by their attitudes towards the use of the Internet, which in turn are influenced by previous positive or negative learning experiences.

Research in the field of language learning with technology has obtained similar results. Al-Seghayer (2016) found that understanding ESL/EFL instructors' attitudes towards computer-assisted reading (CAR) could allow them to use computer technology more effectively; conversely, factors like instructors' negative attitudes toward computers, the lack of resources and support, and insufficient training were impeding the use of CAR in the language classroom.

However, there is evidence that the proper use of ICTs and training can transform negative attitudes into positive. Park and Jung (2016) examined the effectiveness of using video clips such as TED talks, sitcoms, TV news reports and movies as part of a training course to EFL Korean students. They observed that proper training has the potential to eliminate students' rejection of

EFL. Moreover, visual materials foster students' motivation by increasing their interest in language, culture, and participation.

As for the effect of attitudes on the EFL teachers and students' continuance intention to use ICTs, Albirini (2006) highlights the importance of stakeholders that sustain and promote teachers' positive attitudes towards ICTs as they usually foretell their use and future use. On this, Lee (2010) proposed a model to predict users' intentions to continue to use an e-learning system that included constructs from the expectation-confirmation model (ECM), technology acceptance model (TAM), and the theory of planned behaviour (TPB). Results showed that after the satisfaction construct, attitudes significantly predicted the users' intentions to continue to use technology over perceived usefulness, concentration, and subjective norm.

Research has demonstrated that attitudes play a central role in the achievement of educational goals related to the use of new technologies for language learning (Sabzian and Gilakjani, 2013; Kia and Ahmadi, 2015). Yang and Chen (2007) assert that EFL teachers feel motivated to use technologies because the great variety of online resources available to students may help them improve their listening, speaking, reading, and writing skills through real-world situations. Dörnyei (2001) asserts that attitude is one of the main components of motivation in second and foreign language learning. He says that language learning is more complex than merely learning new information and acquiring knowledge, since its study includes factors from different areas of psychology, such as environmental and cognitive, personality features, and social characteristics (Dörnyei, 2001). In this respect, Ushida (2005) states that attitudes and motivation are crucial factors for students to succeed in the blended learning context. She says it is essential to investigate what factors influence the students' attitudes and motivation that could affect their success in blended language courses. In a similar way, Alzaidiyeen (2017) suggests examining the factors that affect individuals' attitudes towards the use of ICTs for English language learning since these factors may influence behaviour for technology acceptance, use, and future use.

The lack of current information on the factors that may potentially contribute to EFL teachers and students' attitudes towards the use of ICTs provides a rationale for inquiries on the subject. That information, along with examining the relationship between EFL teachers and students' attitudes, actual use and continuance intention to use technology, can fill in the gaps in the literature and provide insight into these topics.

2.3.1 Relationship between attitudes and self-efficacy in teaching and learning with ICTs

The research literature shows evidence of factors that influence individuals' attitudes towards technology integration and use. One of those factors is self-efficacy, and represents the main concept in Bandura's Social Cognitive Theory (1982; 1986). This theory remarks the reciprocal relationship between behavioural patterns, cognition, personal factors, and environmental influences that shape human psyche (Bandura, 1982). Self-efficacy is defined as 'people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances. It is concerned…with judgments of what one can do with whatever skills one possesses' (Bandura, 1986, p. 391). In this conception, people possess self-directive capabilities that enable them to exercise some control over their thoughts, feelings, motivations, and behaviours (Bandura, 1999). Perceived self-efficacy is a cognitive factor that influences personal control over motivation. It affects people's confidence or insecurity to perform certain behaviours (Bandura, 1989; Cahyono and Mutiaraningrum, 2016).

Investigation indicates that the concepts of self-efficacy and attitude affect each other and are influenced by each other (Bandura, 1977; Perepiczka, Chandler and Becerra, 2011). For instance, a high sense of self-efficacy contributes to the individual's positive attitude (Demirtas, Comert and Ozer, 2011; Tarkin and Uzuntiryaki, 2012; Ozkal, 2013). Empirical studies in general knowledge and the area of ELT demonstrate that perceived self-efficacy and attitudes have a significant relationship (e. g., Zheng *et al.*, 2009; Al Dafaei *et al.*, 2013; Celik and Yesilyurt, 2013; Akbari, Pilot and Simons, 2015; John, 2015; Hernandez, Hueck and Charley, 2016; Yesilyurt, Ulas and Akan, 2016; Ngo, 2017). The following are cases in point:

Celik and Yesilyurt (2013) conducted a study with pre-service teachers from three universities in Turkey. They concluded that enhancing pre-service teachers' perceived computer self-efficacy is essential for them to acquire positive attitudes towards the implementation of computer-supported education. In another study based on Roger's Diffusion Theory, John (2015) investigated the factors that influence the adoption of ICTs among Asian university teachers. He discovered that factors such as computer self-efficacy, relative advantage, compatibility, and prior computer experience significantly influence teachers' perceived ease of use and attitudes towards ICTs.

Al Dafaei *et al.* (2013) explored the relationship between attitudes, self-efficacy, and use of instructional computer technology. Findings revealed that teachers' attitudes significantly predict the use of technology. However, the researchers suggested that regardless of this, it is necessary

to take into account their perceptions of their ability to use technology to encourage them to use it more frequently. In another study, Yesilyurt *et al.* (2016) affirm that the knowledge, beliefs, and skills that a person possesses regulate his or her tendency to behave in a specific manner and determine their attitude. Their investigation on the relationship between university teachers' computer self-efficacy, academic self-efficacy, and attitudes towards the use of technology revealed that a positive or a negative change of teachers' attitude and self-efficacy would affect each other reciprocally.

Ngo (2017) conducted a study with EFL university students in Vietnam, he found that perceived self-efficacy and learner autonomy strongly influence the students' attitudes towards the use of ICTs. Moreover, Ngo observed that EFL students with a high sense of efficacy or autonomy are more likely to have positive attitudes towards the use of technology. Similarly, Zheng *et al.* (2009) explored affective factors in learning EFL in a 3D game-like virtual world, in which non-native English speakers interacted with native speakers to solve problems related to online quests. Results showed that self-efficacy and attitudes towards English language learning are related to future behaviours, persistence, and continuous engagement with English language learning.

Modern society demands that teachers and students be skilful in the use of ICTs for them to be able to keep pace with change. Hence, the researcher of this study considers it is essential to have a clear understanding of the attitudes and ICT self-efficacy beliefs of the main actors in the teaching and learning of EFL.

2.3.2 Learning theories and ICTs

The creation of instructional environments is founded on theories of learning developed before information and communication technologies transformed how people live, communicate, and learn (Mechlova and Malcik, 2012). Cognitive and sociocultural constructivism provides the theoretical foundation for the use of ICTs in EFL (Levy, 1998; Yang, Song and Sun, 2010; Gilakjani, Leong and Ismail, 2013; Rubio and Thoms, 2014).

2.3.2.1 Cognitive constructivism

According to Piaget's (1954) cognitive constructivism theory, knowledge is actively constructed through learner's personal experience, and not passively received from the environment (Levy, 1998). The theory states that when a learner faces a new experience, this is first adapted (or assimilated) into his or her mental schema (Piaget, 1954). Moreover, if the new information

contradicts or conflicts with the learner's cognitive structures, this has to be adjusted for it to be accommodated in his or her mind (Piaget, 1983).

Cognitive constructivism theory has importantly influenced the teaching and learning of EFL. The language teacher has a new role as a facilitator, who provides students with opportunities to participate in "meaningful and communicative activities" (Lamy and Hampel, 2007, p. 20). Likewise, students actively participate in trying to make meaning comprehensible to them (Kramsch, 1986) through simplification, elaboration, confirmation, comprehension checks, and clarification requests and recasts. Students construct their own knowledge of the English language, and this is reflected in their language development (Blake, 2000).

From this theoretical perspective, EFL teachers look to relate students' prior knowledge and experience with new knowledge to facilitate their learning process. EFL students have the opportunity to learn and work at their own pace (Hoang, 2015). In this sense, the use of ICTs in EFL teaching and learning provides students with access to authentic language resources in a variety of forms including textual, verbal and visual (Woo and Reeves, 2007). The use of technology meets the different students' learning needs and allows them to manage their learning process (Vaughan *et al*., 2013; Woo and Reeves, 2007).

2.3.2.2 Socio-cultural constructivism

Unlike cognitive constructivism, which proclaims that students' learning development is the result of individual experiences, socio-cultural constructivism is a learning theory that emphasises the collaborative nature of learning. According to Vygotsky (1978), the development of cognitive abilities is based on the process of cultural socialisation. In socio-cultural constructivism, knowledge is built in a human-interactive environment where external social influences promote the formation of internal mental structures shaped by social, cultural, and contextual factors. Therefore, from a socio-constructivist perspective, the use of language with others is the essential mediating tool for cognitive development (Halliday, 1993).

Vygotsky (1978) pointed out that higher psychological functions (mental processes) are mediated by the use of social tools and sign systems such as language, writing, and number systems that transform behaviour and lead to individual growth within a process of socialization. Socio-cultural constructivism is learner-centred and experience-based with emphasis on meaning making. Its proponents claimed that language needs to be studied in its socio-cultural context, which involves participant interactions, the conveying of meaning, and vocabulary selection (Richards and Rodgers, 2001). In this study, ICTs constitute social instruments that mediate different types of

interaction that take place in the teaching and learning of EFL within the blended learning modality.

2.3.2.3 ICTs as mediating instructional tools

One of the main concepts in Vygotsky's theory is that of mediation. Humans use symbolic tools or signs to interact with the world. Tools can be physical or psychological artefacts created and passed by a specific culture to future generations, which in turn, can rework those artefacts before they are inherited by the next generations (Lantolf, 2000). Pachler points out that 'digital technologies can be seen to have mediatory potential in the Vygotskyan sense as the idea of social negotiation includes the internalisation of the pre-given world of cultural resources, which, in a digital age, are fundamentally bound up with technology' (Pachler, 2014, p. 09). From this perspective, ICTs such as desktop computers, electronic boards, Smartphones, laptops, iPads, digital cameras, and digital projectors, among others, (Davidson *et al.*, 2014) enter in the socio-cultural educational environment as mediating instructional tools and bring about changes in the shape of activities, content, and methodology of language learning courses (Charbonneau-Gowdy, 2015). Therefore, in the socio-cultural approach, EFL/ESL learning is the result of individual cognition acquired through the use of relevant social tools that shape the nature of human behaviour within a specific cultural context (Thorne and Smith, 2011).

Altogether, both constructivist theories support the use of ICTs for the teaching and learning of EFL within the blended learning modality. The cognitive and social aspects of language learning with technology can help EFL teachers improve their teaching practices and provide students with opportunities to carry out active and collaborative learning (Rubio and Thoms, 2014). Therefore, since the Smrt English course is informed by the principles of the sociocultural approach (see section 3.4.) and integrated into an educational model grounded in constructivist tenets (see section 1.4.2), the researcher of this study considers appropriate to examine how EFL teachers and students use ICTs in light of these theories.

2.4 Benefits of the use of ICTs in blended learning

Blended learning makes extensive use of ICTs (Norberg, 2017) bringing about benefits at institutional, faculty, and students level (Motteram and Sharma, 2009; Niemiec and Otte, 2010; Pop and Slev, 2012; Garrison and Vaughan, 2013; Golonka *et al.*, 2014; Porter *et al.*, 2014; Tri and Nguyen, 2014). Among the countless advantages provided by digital technologies and online tools is the formation of independent users who have access to a great variety of language learning

materials (Grgurovic, 2010; Lopez-Perez, Perez-Lopez and Rodriguez-Ariza, 2011; Gruba and Hinkelman, 2012; Craig and Williams, 2015). The use of authentic materials offers a valuable source of language input that can improve students' learning, especially for EFL students who have limited exposure to the English language outside the classroom (Hoang, 2015). Furthermore, in this learning environment, students can use different tools such as digital recorders, digital cameras, text-to-speech converters, and automatic speech recognition for self-study and take control of their own learning (Joosten *et al.*, 2013).

The learning opportunities provided by ICTs to EFL students facilitate the acquisition of structural components (e.g., vocabulary and grammar) and reading and listening practise in their self-study time. Hence, face-to-face time can be used to help students develop communicative abilities and not in teaching lexical and grammatical structures (Launer, 2010). Researchers agree that new technologies facilitate interactions between teachers and students and students with other learners beyond face-to-face classes (Aborisade, 2013; Joosten *et al.*, 2013; Taylor and Newton, 2013; Vaughan *et al.*, 2013). As Garrison and Kanuka (2004) pointed out, EFL teachers promote students' use of synchronous and asynchronous tools such as chat rooms, forums, and emails to practice communicating in English. This facilitates the formation of learning communities where students can participate in dialogues, discussions, and agreements, adding a reflective element to higher-level education through multiple forms of communication (Garrison and Kanuka, 2004). Such interactions encourage students to collaborate with each other and enhance their engagement in language learning (Dörnyei, 2001; Gilbert, 2013). In addition, students may develop their high order thinking skills such as critical thinking, problem-solving, project work and reflect on their own learning process, and co-construct knowledge (Olejarczuk, 2014; Hockly, 2016).

Regarding assessment, online evaluation allows teachers to be informed of students' progress and offer them timely support to scaffold learning (Grgurovic, 2010). Besides, the online assessment helps pre-service teachers to have a better understanding of the use of new technologies in their future teaching practise (Boyles, 2011; Blackley and Sheffield, 2015).

The benefits offered by ICTs have generated new expectations in teaching and learning in higher education (Gardiner, 2015). For this reason, identifying their affordances and limitations is important to have a clear understanding of how they can be successfully integrated into language learning classrooms (Sharp, 2011). The following section presents a conceptualization of the affordances of ICTs, and examples of their impact on the teaching and learning of EFL.

2.4.1 Affordances of ICTs

Hammond (2010) defines the term affordance as 'the perception of a possibility of action... [which] is relative to something and, in the context of ICT, relative to desirable goals or strategies for teaching and learning' (p. 12). Regarding language learning through technology, the concept of affordance includes both the positive and the negative aspects of the new technologies used in learning and teaching English (Viitanen, 2014).

Floridi (2014) observes that, nowadays, the affordances of digital ICTs allow them to process information as humans and transmit this information to other ICTs, but following processes designed by humans. In this respect, Norberg (2017) says that ICTs have the potential to take burdens off teachers so that they can focus on important work (e.g., problem-solving, feedback). Likewise, students expect to be immersed in an educational experience where they learn through exploration, interaction, and collaboration rather than in the traditional face-to-face lectures (Jukes *et al.,* 2010), which is possible because, in the present time, the affordances of ICTs allow for more flexible learning environments (Smith *et al.*, 2012; Gordon, 2014).

Pachler *et al.* (2009) say that teachers should be aware of the affordances and limitations of ICTs for them to know when it is more adequate to use them. They proposed the concept of 'Moments of Contingency' (Pachler *et al*., 2009, p. 02), which are those in which learners gain an understanding of complex processes that underpin cognitive activity. To make the most of these moments, they state that teachers need to be aware of the learning possibilities offered by individual technologies. They identify five generic affordances of ICTs that add value to traditional assessment such as a) speed to accelerate many of the processes related to learning, b) capacity to store and access enormous amounts of data, c) processing responses automatically and provide immediate feedback, and d) facilitating the construction and representation of concepts and ideas in a more understandable way (e.g., using screen recording technology).

In the same vein, Fisher *et al.* (2006) categorised the affordances of digital technologies as 'clusters' of purposeful activity of teacher learning such as a) *knowledge building:* adapting and developing ideas, modelling, and representing understanding in multimodal and dynamic ways; b) *distributed cognition:* accessing resources, finding things out, writing, composing, and presenting with mediating artefacts and tools; c) *community and communication:* exchanging and sharing communication, extending the context of activity, and extending the participating community at local and global levels, and d) *engagement:* exploring and playing, acknowledging risk and

uncertainty, working with different dimensions of interactivity, and responding to immediacy (p. 20).

Research studies demonstrate that although ICTs may have limitations that affect their nature (Fisher *et al.,* 2006), the successful integration of their affordances identified by investigators may lead to more effective technology usage and positively impact the learning outcomes. The following are cases in point:

In a general knowledge study, Jacobi (2017) explored North American university students' perceptions of the usefulness and structure of *online discussions*. Results revealed that the affordances of online discussions allow students to belong to a community in which they feel engaged and motivated, enable them to construct meaning, as well as provide teachers with opportunities to address authentic and relevant topics.

In the field of language learning through technology, Awada and Diab (2018) examined the effectiveness of *Google Earth* and *Wiki* tools to improve the EFL university students' oral presentation skills. The researchers concluded that these online tools promote collaborative learning, facilitate students' problem solving and decision making, increase research and oral presentation skills, and improve learning outcomes within an anxiety reduced environment. Wang *et al.* (2017) demonstrated that *3D virtual worlds* programs like *OpenSimulator*, through the use of two artefacts called *chatbot* (designed as 'little pet' avatar) and *time machine* (teleports learners virtually), have the potential to increase the learners' sense of immersion and presence in the 3D virtual world, which in turn may determine to what degree the learner could transfer the knowledge acquired in the virtual environment to real-life interactions. Similarly, Lianjiang (2017) explored the affordances of *Digital Multimodal Composing* (DMC) with university EFL teachers and students in China. DMC incorporates the use of video composing to produce texts by combining images, words, and soundtracks. Findings revealed that, at the macro level, the use of video composing allows students to do real-time replay and self-paced revision, develop a sense of relevance related to English learning, and eliminate the sense of lack of recognition. At the micro level, video composing offers students a way to raise a sense of autonomy, experience a sense of meaningful purpose, and become part of a community of EFL learners.

2.4.2 The use of ICTs to develop English language skills and sub-skills

Learning a second or foreign language requires to develop reading, writing, listening, and speaking skills. Language skills do not exist in isolation but are interrelated to each other when

language is taught. Speaking and listening skills, for example, most of the time occur together (Vance, 2015). However, research in language teaching generally focuses on one skill to offer a broad explanation of the phenomenon under study (Hubbard, 2009; Vance, 2015). The use of several technical tools may have a significant effect on the learning process of each area of the language (Motteram and Sharma, 2009).

The following paragraphs in this subsection briefly present some examples of research studies in which ICTs have been used to develop listening, speaking, reading, and writing as well as grammar, vocabulary, and pronunciation in EFL teaching and learning.

Nowadays, listening and speaking skills can be developed using *videoconferencing software* (e.g., Adobe Connect, Big Blue Button, Blackboard Collaborate, Skype, Google Hangout, and Zoom). Videoconferencing allows learners to exchange video, images, and text in real-time and promotes speaking practice (Blake, 2016). For instance, *Skype* is a useful tool to exchange language knowledge and information by engaging in meaningful conversations (Long and Doughty, 2009). Romaña Correa (2015) investigated the influence of Skype conference calls to enhance EFL students' speaking skills. Findings suggested that online conference calls through *Skype* seemed to help students develop their language skills, and at the same time, expand their social relationships. Also, Tíscar (2015) found that the implementation of a blog (*Treasure Hunt*) in his English class improved students' oral speaking skills, but also their listening abilities and some aspects of pronunciation such as stress and intonation.

Concerning listening skills, Drigas and Charami (2014) affirm that learners can develop these skills through a variety of multimedia instruments such as digital stories, MP3 recordings, or podcasts. Al Qasim and Al Fadda (2013) assessed the influence of *podcasting* on the listening comprehension of Saudi EFL students in higher education. They found that authentic conversations help students improve their listening skills, learn new vocabulary, and feel less anxious about language learning since they had the opportunity to listen to the episodes (recordings) multiple times.

On pronunciation, it is well known that non-native speakers struggle to understand or produce language. Nevertheless, ICTs can motivate language students to take a dynamic role in their learning and help them overcome these problems (Nachoua, 2012). Golonka *et al.* (2014) reviewed over 350 research studies searching for evidence of the effectiveness of new technologies in foreign language learning. *Automatic Speech Recognition* (ASR), stood out for its potential to enhance students' pronunciation. ASR allows students to compare their

pronunciation acoustically with the target pronunciation, develop speaking abilities individually at their own pace, and obtain immediate feedback.

Concerning strategic reading instruction, Dreyer and Nel (2003) said that although there is insufficient preparation on reading strategies, students can use technology-enhanced reading to have access to a great variety of text formats. In this regard, Huang (2013) carried out a study about the use of *e-books* to develop reading skills on EFL students from a university in Taiwan. Results demonstrated that they had positive attitudes towards e-books. Moreover, students declared that they preferred e-books to improve their reading skills as they were more readily available, easily portable, and more eco-friendly than print-based texts. In the same vein, Yagci (2015) used the social network *Facebook* and the educational platform *Edmodo* to improve EFL students' language skills, especially reading skills. Through Edmodo, students had access to links of videos and audio tracks. The researcher observed that students developed positive attitudes towards reading activities as they read before class to participate in the discussion. Also, they enhanced their listening skills.

Reading texts may also serve as a bridge to connect students with writing. The use of blogs and wikis are examples of tools that motivate students to practice reading and writing and offer the possibility of multiple audiences (Hubbard, 2009; Kelly and Safford, 2009; Hughes and Tulimirovic, 2015). Alghasab (2016) found that a *wiki* is a powerful tool for student-centred collaborative writing. Nevertheless, the teacher's intervention is crucial to promote collaborative behaviours like collective interest in the activity, peer correction, and participation in collaborative dialogues. Equally, Lin and Yang (2013) assessed the writing process and progress of Taiwanese students who used *Google Docs* and received feedback from e-tutors in an EFL class. Results showed that Google Docs open new opportunities for social interaction, English language learning, and increases students' motivation.

On the subject of vocabulary learning, EFL students may consider it a boring activity, especially those who grew up in the digital age. Online games in vocabulary learning may alleviate this situation and make it a fun activity (Yip and Kwan, 2006). Franciosi (2017) found that computer game-based approaches applied to foreign language education can improve the Japanese EFL students' transferability of learned vocabulary. A study conducted by Yunus *et al.* (2013) discovered that Malaysian EFL teachers strongly believed in the potential of new technologies to attract students' attention and improve vocabulary learning. According to Frolova (2017), a major trend in the use of technology is *cloud computing*. Cloud computing provides learners with media storage that can be instantly shared by links and found by keywords. Regarding this, Mansouri

(2015) evaluated which technologies worked better for vocabulary retention. The study found that the experimental group, who used the *word cloud*, obtained better results than the control group who worked with *software flashcards*. Results indicated that teachers should know which technologies are better to facilitate language learning (Mansouri, 2015).

Currently, software (e.g., *Hot Potatoes*) facilitate teaching and learning of grammar. EFL teachers can create their grammar exercises such as short-answer, jumbled-sentence, crossword, matching/ordering and gap-fill exercises (Hubbard, 2009). Türkmen and Aydin (2016) explored how online concordancers foster the learning of grammar in EFL. Online concordancers and authentic texts have been shown to increase the students' understanding of grammatical structures, help them make creative sentences, and diminish grammatical mistakes. Additionally, concordancers promote corpus consultation in the areas of vocabulary acquisition and increase students' awareness of syntactic patterns (Yavuz, 2014; Türkmen and Aydin, 2016).

Tomlinson (2012) points out that teaching materials should be selected according to the learners' needs, based on the teaching tasks, and adapted if necessary. In this sense, Cruz and Velasco (2016) observed how Colombian EFL teachers used a variety of online resources and the textbook to teach the four language skills. The teachers used *Edmodo* to share grammar and vocabulary exercises, webpages such as *English File Elementary Online* for the learning of phonetics, *Stress Monster* to practice pronunciation, *inglesdivino.com* to learn by singing, and *La Mansion del Ingles* to develop the four skills. The researchers observed that the way teachers integrate ICTs in their teaching practices is crucial to facilitate students' language learning and increase their motivation.

2.5 Challenges of the use of ICTs in blended learning

Today, it is widely accepted that digital technologies must be integrated into all educational levels and that they play an essential role in the lifelong learning process (Selwyn, 2014). Nevertheless, their implementation necessitates overcoming the challenges that technological innovations bring with them, such as institutional policies, resources, action plans, and faculty support among others (Joosten *et al.*, 2013; Riley *et al.*, 2013).

At a personal level, factors such as attitudes influence other elements that contribute to the effectiveness of language learning. Gardner (1985) says that when it comes to studying attitudes, 'a major question is attitudes towards what … and why' (p.39). Gardner points out that it is important to focus the attention on all attitudes and on how they are related to the factors involved in the learning process, due to the possibility that some attitudes may correlate better to

certain aspects of language learning than others, such as learners' persistence or actual behaviour (Gardner, 1985).

Users' attitudes constitute a challenge to the integration and use of ICTs in education. Alexander *et al.* (2009) state that teachers should be committed to using the technology tools available to them in the present century. Nontheless, negative attitudes towards technology can hinder the integration of an online or blended program. In the same vein, Masalela (2009) affirms that reliability, convenience, and effectiveness of a technology tool may strongly influence the teachers and students' attitudes towards blended instruction. Therefore, stakeholders must be well informed of their attitudes, perceptions, and possible apprehensions towards the use of technology. In a study of the general knowledge area, O'Connor *et al.* (2011) assessed the outcomes of a blended learning course of Business Academic Skills. Students used 'MyWritingLab' to enhance their written production. One of the main problems was that the lack of connection between the two learning modes made teachers feel confused and disappointed, developing negative attitudes toward blended courses. Wang (2010) observes that the lack of self-confidence combined with external and personal factors can potentially affect teachers' attitudes towards ICTs (Wang, 2010).

The socio-cultural context may also influence the integration of technology in educational settings. An example of this can be observed in a study conducted by Madawi and Tariq (2016), which revealed that although EFL teachers had positive attitudes towards the use of social networks in language learning, a general subconscious fear about students misusing or getting distracted with social media was delaying their adoption. Park and Son (2009) found that even in the presence of feelings of affection towards ICTs, internal and external factors teachers experience can affect the integration and use of technology. The researchers concluded that Korean EFL teachers had positive attitudes towards computers, but factors out of their control such as lack of time, lack of computer literacy, sufficient computer facilities, inflexible curricula, textbooks, and lack of administrative support negatively affected their attitudes.

In the present study, EFL teachers and students cannot decide whether or not to use ICTs since their use is mandatory at the university. On this subject, Ajzen (1991) states that when a person does not have volitional control to adopt a given behaviour, internal or external factors may hinder his or her performance on the intended behaviour (Ajzen, 2005). The literature shows a number of factors, also referred to as barriers, which hinder the uptake of ICTs. They have been categorised in a variety of ways. For example, Ertmer (1999) classified the barriers that affect teachers' attitudes towards integration and use of technology in first-order barriers (incremental,

institutional), and second-order barriers (fundamental, personal) that interfere with technology implementation. Ertmer (1999) states that first-order barriers, also known as extrinsic (Lim *et al.*, 2012), are those obstacles that are out of teacher's control. For example, the absence or insufficient provision of equipment, time, training, and support, and points out that dealing with several institutional barriers at the same time may result frustrating for teachers. Moreover, Ertmer (1999) says that second-order barriers, also called intrinsic (Lim *et al.*, 2012), are teacher-related and have to do with teachers' personal beliefs about how teaching and learning should be, personal experience and awareness, including attitudes, practices, and resistance. Ertmer contends that these barriers may be unnoticeable for others or the teachers themselves, but they constitute major factors in the integration of technology.

In 2004, the former British Educational Communications and Technology Agency (Becta), conducted a study to know the teachers' perceptions of the barriers that affect the integration and use of ICTs. The barriers found are: a) lack of teacher confidence and teachers' computer anxiety, b) lack of teacher competence, c) lack of time, d) lack of training, e) lack of access to resources, f) lack of hardware, g) inappropriate software, h) lack of technical support, i) resistance to change and negative attitudes, j) no perception of benefits, k) impact of public examinations, l) age differences, and m) gender differences (Becta, 2004). The research findings suggested that the factors that affect the teachers' successful use of ICTs are complex. Regarding this, Ertmer (1999) says that teacher-level barriers are the most difficult to remove since teachers are the ones who need to change their attitude and approach to ICTs. They also need to receive support and guidance from institutions to implement technology in the classroom. Furthermore, the fact that teachers from different countries perceive the same barriers differently indicates that contextual factors importantly influence the degree to which ICTs are used (Law *et al.*, 2008).

According to Becta's report, understanding the extent to which these barriers affect the faculty and institutions may be helpful to decide how they are to be removed (Becta, 2004). In a later review, Becta (2007) reported that there had been some improvements in ICTs usage; however, reaching e-maturity, using the full potential of learning platforms, and their integration with management information systems were the remaining challenges for educational institutions.

The international comparative study on pedagogy and ICT use in schools conducted by the Second Information Technology in Education Study (SITES 2006) identified similar barriers to those reported by Becta (2004; 2007). The study sought to understand how teachers teach without and with the use of technology. The study revealed the need to implement policies and strategies that have an impact on teachers' perceptions, beliefs, and professional development, the use of ICTs

to support lifelong learning, technical and pedagogical support, and adequate infrastructure (Law, *et al.,* 2008).

With respect to the barriers teachers and students face when using technology, Lee (2000) said that integrating technology in language teaching is a process that requires time and commitment. That is, for teachers and students to learn how to use new technologies and use them consistently, time is needed. However, Lee said that the next generations of students will feel more confident in the use of ICTs and will be able to use the Internet tools to communicate more effectively, practice language skills more deeply, and solve language learning problems more easily (Lee, 2000). In a more recent study on the use of ICTs in public education in Jordan, Alkhawaldeh and Menchaca (2014) identified fifteen barriers that delay the integration of technology. These barriers are related to a) *the use and affect towards use*: disbelief in ICT benefits and lack of confidence, b) *habit*: resistance to change, c) *social norms*: lack of institutional support and lack of incentives and motivations, d) *facilitating conditions*: infrastructure, lack of sharing of best practices, lack of effective training, lack of time, lack of access to technology, lack of technical staff, and government procedures, and e) *the lack of ICT skills*: difficulty of integrating technology into education, and transferring teachers (Alkhawaldeh and Menchaca, 2014, p. 12). The study revealed that the barriers related to the facilitating conditions were the most significant in delaying the acceptance and use of ICTs in education: unveiling the need for more institutional support in teacher training, benefits for teachers, and infrastructure.

Factors associated with predictors of acceptance and use of ICTs have a close relationship with each other. For example, the teacher's confidence is directly affected by personal access to ICTs, the availability of technical support, and teacher training, and all of them constitute barriers to ICTs (Ertmer, 1999). Jung (2015) examined the factors that influence the Korean EFL teachers' acceptance and use of mobile learning (m-learning). Results showed that perceived usefulness and perceived ease of use had significant positive effects on the intention to use m-learning, which proved that the more m–learning is useful and easy to use, the higher EFL teachers' intention to use it. In turn, the intention to use m-learning had a significant positive effect on actual usage. In another study, Dashtestani (2014) found that Iranian EFL teacher trainers perceived themselves without sufficient computer knowledge to prepare EFL teachers for using technology, and consequently, they were not motivated to use ICTs since they did not know how to find and use software tools (Dashtestani, 2014).

As for the use of social media in academic tasks, Venkatesh *et al.* (2016) found that although social networks can be used to create and share content online, Canadian university students

preferred not to use social media for academic purposes. They showed a lack of enthusiasm to transfer their competence in the use of technology if it is for educational purposes. Similarly, Bueno-Alastuey and López Pérez (2014) found that students from a language course that is fully integrated with ICTs gave less value to the use of technologies than students from a language course with less ICTs integration. They concluded that, perhaps, the students from the technology-rich group became aware of the barriers related to the use of ICTs such as work overload, more control of work progress, and lack of computer abilities.

The wide variety of barriers the literature presents may influence EFL teachers and students' use of ICTs. However, these barriers affect teachers and students from all disciplines. On this, Harrington (2010) emphasises the importance of identifying problematic areas specific to the field of language learning through technology. She argues that in online discussion boards, some students tend to self-mute as they would do in face-to-face interactions because of feelings of anxiety. Moreover, Harrington points out that issues related to cultural differences are also present in online work. Previously, Lai and Kritsonis (2006) listed some issues that EFL teachers and students encounter when using CALL programs like cost increase, the lack of technical knowledge, imperfections of CALL's software, and computers' incapacity to handle learning problems. Harrington (2010) disagrees with the issues presented by Lai and Kritsonis (2006) since they are not specific to ESL/EFL fields, but all areas of knowledge. On this subject, Villalva (2006) says that 'while writing studies often explore what a person can do under particular circumstances, the circumstances themselves often are neglected' (p. 32). Like Villalva, Harrington (2010) asserts that the positive or negative effects of teaching and learning English in two delivery modes have been ignored.

Because of the challenges and barriers teachers and students face when using ICTs, the researcher of this study considers relevant to investigate the factors or barriers that particularly affect their attitudes, actual use, and continuance intention to use ICTs in the area of EFL in addition to those already identified in the literature.

2.6 The theoretical framework of the study

Upon evaluation of existing theories and models that seek to explain the acceptance and use of technology, the researcher selected the Unified Theory of Acceptance and Use of Technology (UTAUT model) to frame this study (see section 2.7). The UTAUT model is one of the most salient models that has been employed and tested for predicting system usage and making decisions related to the integration and use of technology in different areas (Chao, 2019). It provides a

framework that not only describes the acceptance of ICTs but explains the actual use of new technologies (see section 2.7). Besides, it has been successfully applied in both organisational and educational institutions in voluntary and mandatory settings (Venkatesh *et al.,* 2003).

Because the use of ICTs is obligatory in the teaching and learning of EFL in the university where this study takes place, the researcher considers that the UTAUT model is particularly useful to explain the relations of interest in this study. The factors it contains incorporate a broad range of situations that may be present in language learning with technology. For instance, the factors related to the attributes of technology, such as the usefulness and ease of use, can help better understand what motivates EFL teachers and students to use technology to enhance their teaching and learning practices. The contextual factors included in the model, such as social influence and facilitating conditions, allow having a clear understanding of the complexities of combining language learning and the use of ICTs (Kern, 2006) in terms of the effect that the whole social environment exerts on the learning process, and the support provided by the university for teachers and students to work with ICTs in the blended learning environment. Moreover, the UTAUT model can explain not only the actual use and continuance intention to use technology, but provide information about participants' characteristics about their feelings of affection towards the use of ICTs and perceptions of their capability to use them in the teaching and learning of EFL (Dwivedi *et al.*, 2017).

Since the use of technology in language learning began for the first time in the university in 2012, the researcher considered this model could explain where the research site, teachers, and students are situated now within a continuum ranging from patchy use or no use of ICTs up to full acceptance and integration of new technologies, as suggested by Graham *et al.* (2013) in their classification of the stages of blended learning adoption (see section 2.2.3).

As previously mentioned in this chapter, despite the fact that ICTs have a ubiquitous presence in society and education (Marek and Wu, 2014), there is still scant research on the factors that contribute to the EFL teachers and students' attitudes towards their use within the blended learning modality, which may be related to their actual use and future use. Furthermore, numerous investigations that have sought to explain the use of ICTs have not provided detailed information on how they are actually used by EFL teachers and students or their intention to continue to use those technologies in the future. Therefore, this study seeks to address these gaps in the literature.

In looking for a theoretical model suitable for the present study in the technology-related literature, the researcher consulted other models or frameworks that attempt to explain the use of technology within the blended learning modality. In the section below, she presents the characteristics of these models and explains why they were not selected to frame the study even though they are useful to explore the use of ICTs in technology-enhanced learning environments.

2.6.1 Theoretical models that aim to explain the use of ICTs within the blended learning modality

This subsection briefly describes the purposes, constructs, and relative merits of the models or frameworks consulted by the researcher before selecting the UTAUT model as a theoretical framework of this study (see sections 2.6.2 to 2.6.4).

2.6.2 The Five Pillars of Quality of Online Education

The researcher considered that the Sloan Consortium's Five Pillars of Quality Online Education (Lorenzo and Moore, 2002) could serve as a useful framework to explore aspects related to technology usage as well as factors that may contribute to teachers and students' attitudes towards the actual use and continued use of new technologies in the area of EFL. The framework includes five dimensions, namely, learning effectiveness, access, cost-effectiveness, student satisfaction, and faculty satisfaction as the values, principles, and goals of asynchronous learning networks. Although it was designed to measure and improve the quality of online education, its dimensions can also be used in blended learning research (Laumakis *et al.*, 2009). The five pillars or principles are a) *Learning effectiveness* refers to the quality of courses when 'learning outcomes meet or exceed institutional, industry, and/or community standards' (Moore, 2012, p. 92); b) *Cost effectiveness* '...improve services while reducing cost to achieve capacity enrollment' (Moore, 2012, p. 92). Though, Picciano *et al.* (2012) point out that the initial investment can be a barrier to program implementation; c) *Access* is the availability of online instruction enables schools to offer courses that otherwise may be inaccessible to students (Picciano and Seaman, 2010), and d) *Faculty satisfaction* includes aspects such as a person´s gratification with teaching online and with the institutional work environment. Hence, it considers elements such as 'a) impact on learning, b) impact on workload, and c) recognition that faculty efforts are valued' (Graham and Dziuban, 2008, p. 272).

The Five Pillars of Quality Online Education is a valuable framework that seeks to enhance the quality of teaching and learning through technology. However, the researcher decided not to

adopt it to guide the present study for several reasons. Firstly, issues related to the cost-effectiveness dimension and access dimension, though they represent important topics of investigation, are beyond the scope of this case study. Secondly, one of the purposes of the study consists of exploring teachers and students' actual use of ICTs in the area of EFL, which implies an examination of teaching and learning practices with the use of digital technologies rather than measuring learning effectiveness basing on students' outcomes. Finally, through the faculty satisfaction and student satisfaction dimensions, the researcher could collect valuable information related to types of interactions, collaborative work, and communities of inquiry among others; however, measuring the faculty and student satisfaction is not within the purposes of this study.

2.6.3 The TPCK Model (Technological Pedagogical Content Knowledge)

The researcher found interesting the Technological Pedagogical Content Model (TPCK) because it focuses on the effective integration of ICTs in the teaching and learning process. The TPCK is grounded in Shulman's (1986) notion of Pedagogical Content Knowledge (PCK), which represents the blending of content and pedagogy for good teaching. Shulman affirmed that PCK occurs when a teacher interprets particular aspects of a subject matter and represents it in different ways to make it accessible to learners. Mishra and Koehler (2006) extended the PCK by adding the domain of *knowledge of technology*. They argue that, in current times, new technologies are widely used in education (e.g., computers, educational games, and the Internet and numerous applications supported by it), and although not all teachers have accepted them, it is a fact that their use will prevail in the future.

The TPCK framework highlights the complex interaction among three bodies of knowledge: Content, Pedagogy, and Technology. The authors asserted that part of the problem of technology not provoking great changes in education might be attributed to the tendency of focusing on technology and not on how it is used. In their framework, Mishra and Koehler (2006) observed that teachers need to get familiar with the affordances and constraints of particular technologies in order to know how to use them to meet specific goals. For example, discussion boards facilitate collaboration and communication among students, while simultaneously inhibiting the participation in the community of individuals outside the course without the instructor's permission (Freidhoff, 2008).

The TPCK model emphasises the complex interplay of different kinds of knowledge, such as technological knowledge, technological content knowledge, and technological pedagogical

knowledge. Mishra and Koehler (2006) affirm that when teachers integrate these types of knowledge into their teaching practice, it can be effectively enhanced; for this reason, this model is considered as the basis for effective teaching using ICTs in academic settings (Mishra and Koehler, 2006; Graham, 2011). However, despite the fact that it could be a useful model to explore EFL teachers and students' actual use of ICTs, the researcher decided not to apply it as a framework for this study. The reason for this is that the TPCK model would limit the scope of the investigation as it does not take into account other factors beyond the ones included in the model. For example, it fails to take into consideration the teachers' beliefs and values about teaching (Graham, 2011), which are important factors to consider when examining teaching and learning with technology. Since one of the purposes of this study is to know to what extent factors may contribute to EFL teachers and students' attitudes towards the use of ICTs for the teaching and learning of EFL, the researcher decided to look for a framework whose constructs could meet these goals.

2.6.4 The Technology Acceptance Model (TAM)

The researcher found the Technology Acceptance Model (TAM) introduced by Davis in 1985, particularly relevant to her study. The TAM was primarily designed to predict users' acceptance and use of information technology in a social context (Jung, 2015). The model's constructs explain to what extent influence factors affect users' attitudes towards acceptance and use of technology. The TAM identifies the relationships between system design features, perceived usefulness, perceived ease of use, attitude towards using, and actual usage behaviour (Davis, 1993).

According to the model, design features directly influence the individuals' perceived usefulness and ease of use of a given system. These two beliefs, in turn, influence the individual's attitude towards using the system. Additionally, perceived ease of use has an effect on perceived usefulness. The model hypothesises that the individual's overall attitude towards using the system determines whether or not he or she will use it (Davis, 1985). The TAM continued to evolve; the original model has been refined several times and enhanced to include more constructs.

The researcher considered adopting the TAM to frame the investigation because it appeared well-suited to the present research purposes. The model explains the motivational linkages between system characteristics, users' beliefs, attitudes, and resulting behaviour (Davis, 1985). Hence, the researcher thought it could be an appropriate tool to obtain useful information about the research topic. However, the TAM was not selected either for several reasons. First, in further

revisions, researchers Davis *et al.* (1989) eliminated the attitude construct from the model, lessening the importance of people's affective feelings towards the intention to use and actual use of technology. Second, the factors 'perceived usefulness' and 'perceived ease of use' may not mediate all influences from external environment factors; hence, other factors may have a direct influence on system usage (Chuttur, 2009). Third, in further readings, the researcher found that the TAM is one of the models in which the Unified Theory of Acceptance and Use of Technology (UTAUT) model is grounded (see more information about the TAM in section 2.7.1). Therefore, the UTAUT model was finally selected to frame the study as explained in the following section.

2.7 The Unified Theory of Acceptance and Use of Technology (UTAUT)

Exploring individuals' acceptance and use of technology is essential as these factors indicate the success or failure of a system (Wahdain and Ahmad, 2014). In this respect, Brown *et al.* (2002) assert that the relationship between the acceptance and use of technology seems more complex in mandatory settings, since the user may not have the intention to use technology, but still, he or she is obligated to do it. Regarding the process of technology acceptance, a variety of models have examined this process in an attempt to predict use, and to some extent, future use (Engelbert and Graeml, 2013). In educational settings, for example, new technologies represent the spearhead of blended learning; hence, their acceptance by teachers and students is vital to the success of their use (Khechine *et al.*, 2014).

The research literature shows evidence that investigators give great importance to examine the actual use of technology in educational settings. For example, (Webb, 2014, Pp. 70-71) points out:

> ICT is changing all the time so to understand the full story it is important to continually examine the pedagogical potential of new technological innovations, to think forward and to try out new approaches as well as to learn from the findings of previous research.

Cox (2014) highlights the importance of learning from previous experiences documented in the research literature to know what types of technologies the teachers are using, in what areas of the curriculum, and the actual usage of those technologies. She reviewed evidence from more than 40 years of research in the general knowledge area about the effect of ICT usage in the teaching and learning processes. Although the study focused on the impact of ICTs in teaching and learning on secondary schools, its findings may be useful to understanding the impact of technology use in higher education as well. Cox argues that the use of ICTs largely depends on teachers' beliefs of what is worth teaching, their selection of technology tools, and their way to integrate ICTs into the lessons, among others. She provides three examples of what students

might experience when interacting with software as a) *Tutorial-style interaction.* Students respond to questions of a specific problem and the program provides feedback of correct or incorrect responses, b) *Simulation software*. It allows students to explore phenomena that are too difficult or dangerous to investigate experimentally. For example, predator-prey systems, satellite motion, and chemical processes, among others (Webb, 2008); and c) *Modelling software*. It allows students to construct their own models, and investigate their relation to theories or real-life experiments (e. g., spreadsheets and databases).

Cox (2014) contends that the most effective uses of ICTs are those in which the teacher and the software can challenge students' understanding and thinking. However, she says that more research is necessary to develop a deeper understanding of the ways teachers select and use technology resources (Cox, 2014). Researchers coincide with Cox's assertion about the importance of understanding technology usage. Venkatesh *et al.* (2016) affirm that 'how students use ICTs to promote their learning is crucial for determining digital technology's added value in higher education settings. There is no one-size-fits-all technology solution ... for higher education institutions looking to integrate ICTs in the academic realm' (p. 534). Hockly (2016) points out that in research on learning technologies (or ICTs) that involves hardware (e. g., computing devices) and software (e. g., programs), it is necessary to consider how teachers and learners interact with these technologies and each other as well as how these technologies support and enhance language learning. Similarly, Kern (2006) says that the relationship between ICTs and language teaching and learning is so complex that it leads to the search for specific responses to what people do with technology, how they use it, and how relevant it is for them.

Given the importance of understanding technology usage in educational settings, specifically for the teaching and learning of EFL within the blended learning modality, the researcher considered appropriate to select the Unified Theory of Acceptance and Use of Technology (UTAUT), as it seeks to understand technology use behaviour. Technology acceptance theories have been the basis for the development of models that examine its acceptance and use, since they focus on a) technological aspects of electronics (e.g., technical features, easiness or complexity of use); b) sociological aspects (e.g., obligatory or mandatory use), and c) psychological aspects (e.g., perceived usefulness, perceived ease of use) (Radovan and Kristl, 2017). The creators of UTAUT, Venkatesh *et al.* (2003), stated that there was a need for an integrated theory that synthesized the existing models in a unified view of user acceptance, avoiding researchers having to choose among constructs from different models or select a 'favoured' one and disregard the contributions of others. Therefore, the ultimate goal of their empirical study was to create a

unified theoretical model of user acceptance of new information technology (IT), which was more robust than pre-existing ones to explain and predict an individual's use of IT and intention to use IT as a predictor of future behaviour.

Venkatesh *et al.* (2003) analysed and compared eight competent pre-existing theories and theoretical models, all of them with origins in psychology, sociology, and information systems (IS). They were the Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM/TAM2), Motivational Model (MM), Theory of Planned Behavior (TPB), the Combined TAM and TPB (C-TAM-TPB), the Model of PC Utilization (MPCU), Innovation Diffusion Theory, and Social Cognitive Theory (SCT). The subsection below presents the theories and models in which UTAUT is grounded.

2.7.1 Theories and models of acceptance and use of technology used to create UTAUT

The present subsection shows a brief description of the eight prominent theories and models used by Venkatesh *et al.* (2003) to create the UTAUT model.

The *Theory of Reasoned Action* (TRA) was the earliest model used to explain technology acceptance. The TRA is a theory of human behaviour developed in the social psychology field by Ajzen and Fishbein in 1980. According to this theory, a person's behaviour is determined by his or her intention to perform the behaviour. In turn, behavioural intention is determined by two factors. The first one is the person's attitude towards a specific behaviour, which is based on the positive or negative evaluation of the behaviour (Ajzen and Fishbein, 1980). The second factor is the subjective norm, defined by the authors as 'the person's perception that most people who are important to him think he should or should not perform the behaviour in question' (Fishbein and Ajzen, 1975, p. 302). As may be observed in figure 1, attitude appears as one of the two constructs that directly determine the person's behavioural intention. As noticed by Davis *et al.* (1989), this theory studies human behaviour to implement appropriate interventions; however, it has been applied to explore the individual acceptance and use of technology. An important limitation of TRA is that it assumes that behaviour is under volitional control (Ajzen, 1991). That is, the theory only applies to behaviour that is consciously planned; otherwise, it cannot be explained by this theory. This aspect of the TRA differs from the present study, in which the use of ICTs for teaching and learning EFL is mandatory (see figure 1).

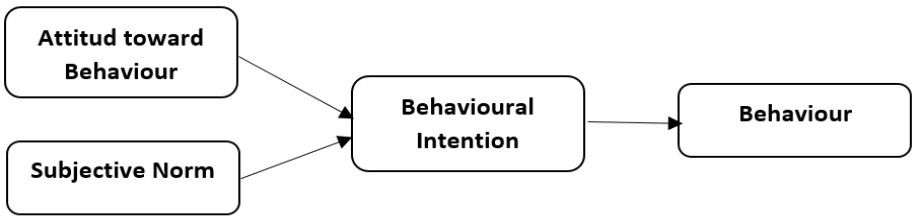


Figure 1: Theory of Reasoned Action. Ajzen and Fishbein (1980). Understanding Attitudes and Predicting Social Behavior. Englewood Cliffs, N.J: Prentice-Hall.

The *Theory of Planned Behaviour* (TPB) is an extension of the TRA (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980). The authors observed that the original model had limitations in dealing with behaviours in situations where people had incomplete volitional control. The TPB was extended by adding perceived behavioural control as an additional determinant of intention and behaviour. Ajzen said that 'perceived behavioural control refers to people's perception of the ease or difficulty of performing the behaviour of interest' (Ajzen, 1991, p. 183). The idea of perceived behavioural control, however, is very similar to Bandura's (1982) notion of perceived self-efficacy, which he defines as the personal judgments of how capable an individual is to deal with challenging situations (Bandura, 1982). In the TPB, attitudes towards behaviour and subjective norm are core constructs that combined with perceived behavioural control and subjective norms predict a person's behaviour (see figure 2).

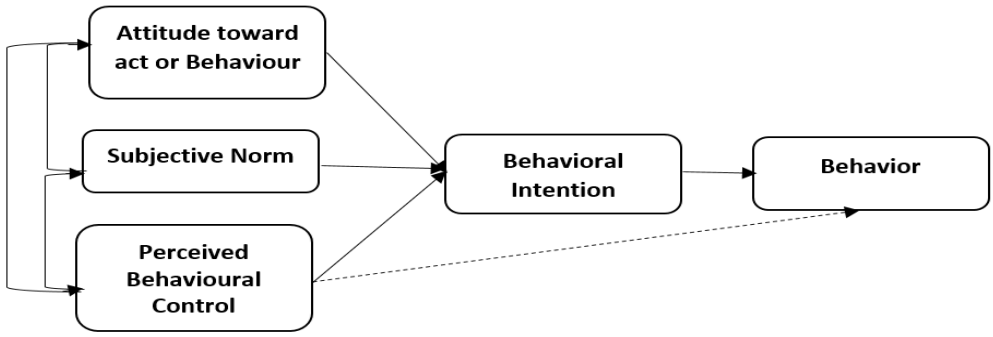


Figure 2: Theory of Planned Behaviour. Ajzen (1991). Theory of Planned Behaviour. *Organizational Behavior and Human Decision Processes*, 50, pp. 179-211.

Researchers Taylor and Todd (1995a) criticised the TPB for using one variable (i.e., perceived behavioural control) to anticipate all non-controllable elements of the behaviour, since this may lead to biases due to the lack of identification of factors that may influence behaviour (Taylor and Todd, 1995a). Even so, the researcher finds similarities between some of the relationships of interest in the present study and the TPB, since the latter one considers attitudes and perceived behavioural control (self-efficacy) as predictors that directly affect behavioural intention and posterior behaviour (use). Moreover, these constructs are interrelated, meaning that these factors are mutually influenced by each other (Perepiczka *et al.,* 2011).

The *Technology Acceptance Model* (TAM) was created by Davis in 1985 to study individuals' acceptance and usage of IT (Jung, 2015). 'The main goal of the TAM is to describe the influence of users' beliefs and attitudes on their intention to use technology and, subsequently, the usage of technology itself' (Teo, 2009, p. 1139) (see figure 3). In the original model, attitudes appear as a major determinant of a person's acceptance or rejection of a system. Attitudes, in turn, was influenced by the two salient beliefs: perceived usefulness and perceived ease of use (Chuttur, 2009).

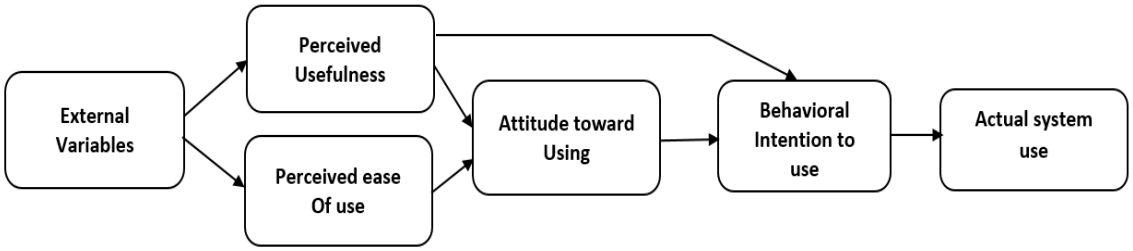


Figure 3: The Technology Acceptance Model (TAM). *Davis et al.* (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, 35, pp. 982-1003.

In an empirical study conducted by Davis, Bagozzi, and Warshaw in 1989, they determined that perceived usefulness and perceived ease of use directly influenced behavioural intentions, and the attitudes were eliminated from the model (Davis *et al.*, 1989). However, other investigations have demonstrated that attitudes significantly influence the behavioural intention and use behaviour; for example, López-Bonilla and López-Bonilla (2017) conducted a study in which they used the original TAM, including the attitude construct and the revised TAM without it, to examine whether the methods used in different studies could have influenced the results. They used two approaches of structural equation modelling: a) covariance-based SEM (CB-SEM), and b) variance-based SEM (PLS-SEM). The researchers concluded that the significance of attitudes to predict use behaviour depends on the SEM approach chosen (López-Bonilla and López-Bonilla, 2017).

The *Technology Acceptance Model 2* (TAM 2) is an extension of TAM. The authors added to the model key determinants of the TAM, perceived usefulness and user intention, in terms of social influence and cognitive instrumental processes (Venkatesh and Davis, 2000). TAM 2 incorporates new constructs relative to social influence processes such as subjective norm, voluntariness, and image. As well, TAM 2 has new constructs related to cognitive instrumental processes, namely job relevance, output quality, result demonstrability, and perceived ease of use. The model also includes experience as a moderating variable to explore how perceived usefulness and usage

intention change when the users' experience with technology increases (Venkatesh and Davis, 2000). It postulates that, in a mandatory setting, the subjective norm will directly influence the intention to use in early stages of implementation, and therefore, the usage of the system. Conversely, the influence of subjective norm on the intention to use will decrease over time and be substituted by experience. In addition, the effect of subjective norm on perceived usefulness, perceived ease of use, and intention to use will only occur in mandatory settings (Venkatesh and Davis, 2000). Although TAM 2 does not include attitudes as an explicit construct to explain intention to use, attitudes are implicit in the underlying belief structure within the technology adoption constructs (Gilbert, 2015) (see figure 4).

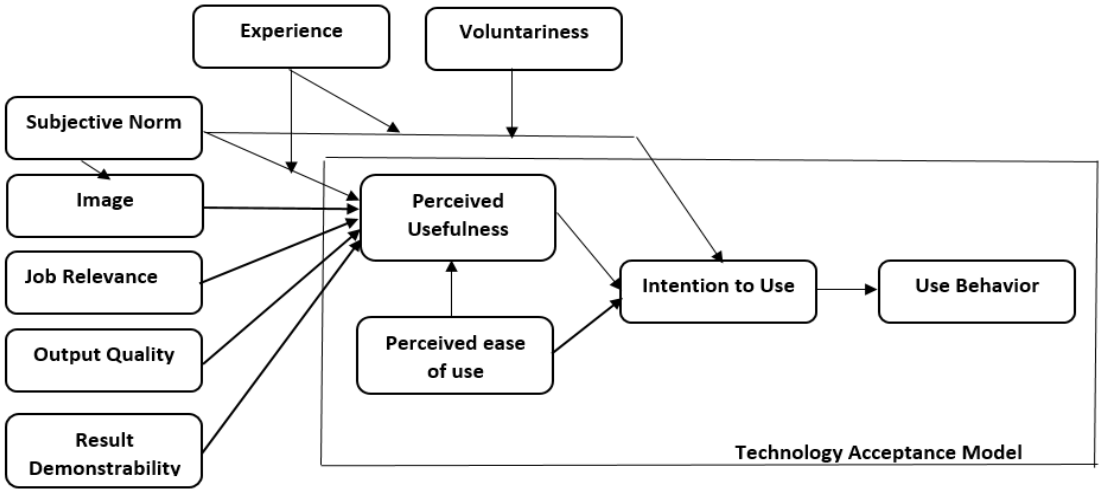


Figure 4: Technology Acceptance Model 2 (TAM 2). Venkatesh and Davis (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, 46(2), pp. 186-204.

Venkatesh *et al.* (2003) commented that the *Model of PC Utilization* (MPCU) aims to predict individual acceptance and use of a variety of information technologies as it predicts use behaviour rather than intention. However, they kept the theory's roots to examine the impact of its determinants on the intention to use when created UTAUT. According to the MPCU, the core determinants of technology usage are complexity, job-fit, long-term consequences, affect towards use, social factors, and facilitating conditions. As may be observed, the attitude factor appears under the name *Affect towards PC use* in this model, exerting a direct influence on the use of technology (see figure 5).

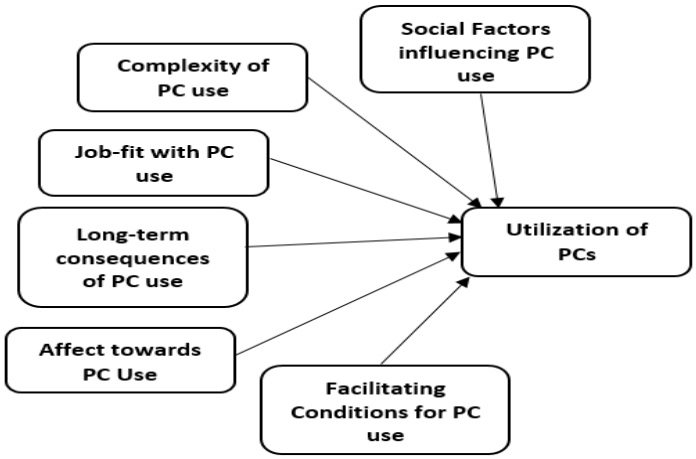


Figure 5: Model of PC Utilization. Thompson *et al.* (1991). Personal Computing: Toward a Conceptual Model of Utilization, *MIS Quarterly*, 15, pp. 124-143.

The *Motivational Model* (MM) is grounded in the area of psychology. The research literature has found that motivation can explain human behaviour. Ryan and Deci (2000), assert that 'people can be motivated because they value an activity or because there is strong external coercion' (p.70). Researchers have adapted the motivational theory to different contexts. Davis *et al.* (1992), used the motivational theory to examine the acceptance and use of new technology. According to this theory, intrinsic and extrinsic motivation predicts behaviour. Extrinsic motivation is defined as the desire to perform an activity 'because it is perceived to be instrumental in achieving valued outcomes' (Davis *et al.,* 1992, p. 1112). Examples of extrinsic motivation are perceived usefulness, perceived ease of use, and subjective norm. Contrarily, intrinsic motivation refers to the desire of performing an activity 'for no apparent reinforcement other than the process of performing the activity per se' (Davis *et al.,* 1992, p. 1112).

The *Combined TAM and TPB* (C-TAM-TPB), is a hybrid model that combines predictors of TPB such as attitude towards behaviour, subjective norm and perceived behavioural control with perceived usefulness of TAM to explain individual's use behaviour and intention to use technology (Taylor and Todd, 1995b).

The *Innovation Diffusion Theory* (IDT) explains how innovations spread through society and how organizations and individuals respond to those innovations (Rogers, 1983). Rogers defines the concept of innovation as 'an idea, practice, or object that is perceived as new by an individual or other unit of adoption' (Rogers, 1983, p. 11). In IDT, diffusion of an innovation is the process through which the members of a social system receive information about the novelty in question. Rogers (1983) says that the adoption of an innovation is difficult to achieve; hence, the interest of organizations and individuals is to accelerate its diffusion. According to Rogers (1983), innovations

have some characteristics that are perceived by individuals and influence their decisions in the adoption process. If an individual perceives that an innovation has a greater relative advantage, compatibility, trialability, observability, and low complexity, it is more likely that the person will adopt the innovation. On the other hand, Moore and Benbasat (1991) commented that 'Rogers' definitions are based on perceptions of the innovation itself and not on perceptions of actually using the innovation' (Moore and Benbasat, 1991, p. 196). They elaborated an instrument to measure the individuals' perceptions of adopting information technology innovation by refining and extending the core constructs of IDT presented in Rogers to explore individual technology acceptance. The constructs they included in IDT are: relative advantage, ease of use, image, visibility, compatibility, result demonstrability, and voluntariness of use.

The *Social Cognitive Theory* (SCT) is a theory of human behavior (Bandura, 1986) that was extended and applied by Compeau and Higgins in 1995 to examine the utilisation of computers using core constructs such as outcome expectations, personal outcome expectations, self-efficacy, affect, and anxiety (Compeau and Higgins, 1995). Self-efficacy represents the individuals' judgments about their capability to perform a required behaviour (Bandura, 1978). The individuals' emotional reactions towards computers (affect and anxiety) and their actual use are altered by their self-efficacy perceptions, further affecting (or liking) the individuals' expectations of the outcomes of using computers. Regarding the construct of anxiety, the SCT model measures the negative effect of anxiety on computer usage since people usually avoid behaviours that provoke anxious feelings (Compeau and Higgins, 1995).

As previously mentioned at the beginning of this section, upon examination of the eight theories and models described above, Venkatesh *et al.* (2003) formulated the Unified Theory of Acceptance and Use of Technology (UTAUT model). The researchers carried out field studies in four organizations, in which they examined the user's acceptance and use of technology in voluntary and mandatory settings from the time of its initial introduction to stages of greater experience. The data were collected through a questionnaire administered to employees in three points in time (post-training, after one month, and after three months), containing items from the eight prominent models (Venkatesh *et al.,* 2003).

The research was based on conceptual and empirical similarities of the eight models and their extensions, which involved with-in subjects, longitudinal validation, and comparisons of the models under study. In one or more of the eight individual models reviewed and empirically compared in the study, seven constructs seemed to be significant direct predictors of intention or usage, namely performance expectancy, effort expectancy, social influence, facilitating

conditions, self-efficacy, attitudes, and anxiety (Venkatesh *et al.*, 2003). The researchers theorized that four of these constructs (performance expectancy, effort expectancy, social influence, and facilitating conditions) would play an important role as predictors of user intention to use IT and usage behaviour, and removed self-efficacy, attitudes, and anxiety from the model. In addition, four variables, namely age, gender, experience, and voluntariness would moderate the user intention to use technology (see figure 6).

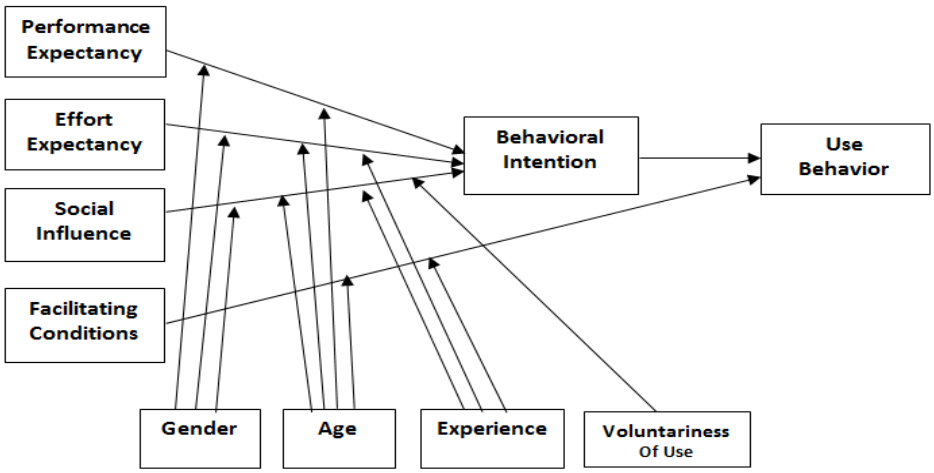


Figure 6: Unified Theory of Acceptance and Use of Technology (UTAUT). Venkatesh *et al.* (2003). User acceptance of information technology: Towards a unified view. *MIS Quarterly*, 27(3), pp. 425-478.

The first predictor of acceptance and use of IT in UTAUT is *performance expectancy,* which is defined as 'the degree to which an individual believes that using the system will help him or her to attain gains in job performance' (Venkatesh *et al.,* 2003, p. 447). Performance expectancy includes five constructs, namely perceived usefulness (TAM/TAM2 and C-TAM-TPB), extrinsic motivation (MM), job-fit (MPCU), relative advantage, and outcomes expectations (SCT). Performance expectancy is focused on task achievement and is the strongest predictor of intention in both mandatory and voluntary settings among adult employees (Venkatesh *et al.*, 2003). This predictor measures people's beliefs that their job performance will be improved because of the usefulness of new technologies (Davis 1989; Davis *et al.,* 1989). Apparently, people's perception of the benefits they will obtain if they use technology (e.g., better job performance, better pay, or promotions) strongly motivates them to use it (Davis *et al.,* 1992; Thompson *et al.,* 1991). As well as the beliefs that using a technological innovation will allow them to have better outcomes than before using it (Thompson *et al.*, 1991; Moore and Benbasat, 1991).

Effort expectancy is the second strongest predictor of the model. It is defined as 'the degree of ease associated with the use of a system' (Venkatesh *et al.*, 2003, p. 450). That is, it assesses the individuals' beliefs that using new technology will be easy, clear, and understandable to them (Davis, 1989; Davis *et al.,* 1989). In contrast, if individuals think that the use of technology is too complicated, they may refuse to use it (Thompson *et al.,* 1991; Moore and Benbasat, 1991). Effort expectancy involves three constructs, namely perceived ease of use (TAM/TAM2), complexity (MPCU), and ease of use from the information Diffusion Theory. The constructs of this predictor are significant in both mandatory and voluntary settings, but according to the creators of the UTAUT model, their influence tends to decrease and become unimportant after a time of continued usage (Venkatesh *et al.*, 2003).

Performance expectancy and *effort expectancy* have proven to be important determinants in the integration and use of ICTs in general education and teaching and learning of EFL/ESL. For example, Van De Bogart and Wichadee (2015), examined the acceptance of LINE chat app for classroom-related activities and explored the factors that might affect their intention to use it. One hundred and forty-four undergraduate students from an EFL course of a university in Thailand participated in the study. Findings revealed that perceived usefulness and attitude towards usage had positive relationships with the intention to use. In another study, Cakir and Solak (2014) used TAM to examine the factors that influence EFL students' academic achievement when using ICTs. The researchers recommended taking into account the ease of use factor during the designing phase of the program so that students could find it user-friendly. Results showed that while anxiety negatively affected the students' academic achievements, factors such as perceived ease of use, attitudes, satisfaction, and self-efficacy had a positive effect on students' outcomes. Nonetheless, Tan (2015) says that the fact that perceived ease of use results was significant, it does not mean that learners want to use technology. The importance of ease of use is in relation to web designers, who are in charge of improving interfaces for students, finding them easy to use. Tan used TAM to study the factors that influence Taiwanese EFL learners' adoption of e-learning websites. Findings showed that EFL learners believe that using open tools available on the Internet is more convenient and helpful than using traditional methods. New technologies provide students with immediate feedback and automated scores that help students monitor their learning progress. They are also useful for conducting language assessment after students have practised and done assignments. In this regard, Fageeh (2015) conducted a study with EFL Saudi teachers and students to explore their perceptions towards web-based assessment. Results showed that perceived usefulness, self-efficacy, enjoyment, behavioural intentions to use, system satisfaction, and system challenges were significant predictors of web-

based assessment usage. In another study, Huang *et al.* (2014) examined EFL Taiwanese students' perceptions and attitudes towards using Facebook as a learning platform to facilitate their writing skills. Findings revealed that, though Facebook was not an educational platform, students found it as an easy-to-use online open tool to share knowledge and class experiences since students were already proficient in the use of social networks.

The third predictor in the UTAUT model is *social influence*. Social influence is defined as 'the degree to which an individual perceives that important others believe that he or she should use the new system' (Venkatesh *et al.*, 2003, p. 451). Thomson *et al*. (1991) declared that people may decide to adopt new technology due to the influence of the whole social situation; likewise, as said by Moore and Benbasat (1991), individuals could decide to use technology to gain prestige or status among their peers. Social influence as a direct determinant of intention has received different names in different models. For example, in TRA, TAM2, and TPB/DTPB it has been referred to as subjective norm, social factors in MPCU, and image in IDT. Regardless of the name, the constructs of social influence (subjective norm, social factors, and image) involve the degree to which an individual is influenced by important others' opinions as a result of having used technology. The authors of UTAUT observed that social influence is not significant in voluntary settings, but it becomes important in mandatory contexts (Venkatesh *et al.*, 2003).

A number of studies show that social influence affects teachers and students' attitudes towards the adoption and usage of ICTs. Moreover, some investigations have found that social influence is one of the most influential factors in predicting use behaviour. On this subject, Karahanna and Straub (1999) contended that social presence is a critical factor in individual users perceiving computer-based communication as a useful medium. They asserted that, in a *Wiki* system, students need to communicate with each other in collaborative tasks and sometimes with students from different colleges. They concluded that a high social presence significantly influences their usage of this learning tool.

The fourth predictor in the UTAUT model involves *facilitating conditions*. This predictor is defined as 'the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system' (Venkatesh *et al.*, 2003, p. 452). The facilitating conditions inform about aspects that could affect the whole situation where new technologies are used such as technical support, adequate equipment, and Internet access, among others which may accelerate or delay individuals' acceptance of new technology (Thompson *et al*., 1991). Other components of this predictor are the compatibility of the innovation with existing values, needs,

and experiences of potential adopters (Moore and Benbasat, 1991), as well as perceived behavioural control.

As in TPB/DTPB, the facilitating conditions are seen as direct antecedents of usage and not fully mediated by intention (Venkatesh *et al.*, 2003). Nevertheless, empirical research has found that this predictor has the potential to positively or negatively affect the EFL teachers' intentions to use ICTs. For instance, Alresheed and Leask (2015) conducted a study about the overt and covert factors that influence the acceptance and use of ICTs by EFL Saudi Arabian secondary school teachers. They found that a combination of lack of computers and software, insufficient Internet access in the classrooms, students' low access to computer laboratories, lack of computer training, and negative attitudes towards ICTs contributed to the failure in integrating CALL in school settings, even though it was well known that most teachers and students had smartphones and tablets. Hubbard (2004) contends that facilitating conditions are crucial to the students' acceptance and use of innovative technology, since at the beginning they are not familiar with the new technology and need adequate training to gain familiarity (Hubbard, 2004). For example, in 2015, Liu and Huang used the UTAUT model to explore the use of *Google Docs* in peer translation from Chinese to English. The study was carried out in a technical university in Taiwan with 27 participant students. Findings showed that when technology is integrated into teaching, the facilitating condition is the most important determinant of students' intentions to use synchronous collaboration. In this study, training was essential for students to learn to use *Google Docs* because they were working with this tool for the first time. In another study, Murat (2012)explored prospective EFL teachers' perceptions of ICT implementation in teaching EFL. The study found that the majority of prospective EFL teachers had negative ICTs perceptions. The researcher proposed that to provide teachers with positive technological experiences, some problems should be solved first such as the lack of computer laboratories for distance learners, poor technical support, insufficient access to ICT tools, and lack of empirical research in this field.

The UTAUT model includes two endogenous variables: a) *behavioural intention to use*, which measures the degree of a person's intention to perform a specified future behaviour; and b) *use behaviour*, which refers to the actual usage of the information system in question (Davis *et al.,* 1989). In this study, use behaviour refers to the actual use of ICTs made by EFL teachers and students within the blended learning modality.

2.7.2 Moderating factors

In addition to the main predictors of acceptance and use of technology, the UTAUT model includes four moderating variables such as gender, age, experience, and voluntariness, which are factors that influence the main constructs affecting the user's intentions to use and technology usage, consequently. The moderating variables are:

a) *Gender* moderates the constructs performance expectancy, effort expectancy, and social influence. According to UTAUT, men tend to have higher performance expectancy than women because they are inclined to be task-oriented (Saleh Mahdi and Sa'ad Al-Dera, 2013). Venkatesh *et al.* (2003) said that effort expectancy is more significant to women than to men, and regarding the social influence construct, women tend to be more sensitive to others' opinions.

b) *Age* is an important moderating factor as it can impact all the main constructs (Venkatesh *et al.*, 2003). The performance expectancy factor is more significant for younger people, who tend to be more attracted to rewards than older people. Equally, effort expectancy is a more significant factor in adopting technology among older people than younger people. As well, social influence is more significant for older people; withal, its effect diminishes with experience. Regarding the facilitating conditions, they are more salient to older people because their way of learning is more passive and based on experience (Venkatesh *et al.*, 2003).

c) *Experience* is a factor that moderates effort expectancy, social influence, and facilitating conditions. It refers to the practical knowledge or skills derived from using technology over a period of time. For people who have little experience with a new system, effort expectancy is a salient factor in predicting behavioural intention. Similarly, social influence is moderated by experience and impacts behaviour intention to use technology, but only during early stages of using technology; when the user gains more experience with technology, its effect fades (Venkatesh *et al.*, 2003). As for the facilitating conditions, they become the most influential factor with innovative technology when users have no experience with the new system (Hubbard, 2004).

d) *Voluntariness of use* only moderates the predictor social influence affecting the behavioural intention to use technology. Social influence is a significant factor only in mandatory contexts because it has a direct effect on intention, while is not significant in voluntary contexts (Venkatesh *et al.*, 2003).

2.7.3 Constructs added to the UTAUT model in this study

The creators of the UTAUT model said that it consists of '…a useful tool for managers needing to assess the likelihood of success for new technology introductions … targeted at populations of users that may be less inclined to adopt and use new systems' (Venkatesh *et al.*, 2003). However, they recognized its limitations and suggested that in future research, new constructs to assess behavioural intention and use should be added to extend its application to other contexts. Hence, in this study, the UTAUT model was adapted to be used in an educational setting in a Mexican tertiary context in which the use of ICTs is obligatory. The constructs added to the original model are ICT self-efficacy (see section 2.7.3.1), attitudes (see section 2.7.3.2), and continuance intention to use (see section 2.7.3.3) described as follows:

2.7.3.1 ICT Self-efficacy

In terms of technology integration and use, self-efficacy is defined as 'the Judgment of one's ability to use a technology (e.g. computer) to accomplish a particular job or task' (Bandura, 1986, p. 391). That is, the belief that an individual has of his or her capability to use new technology to achieve specific goals (Chuttur, 2009). Computer self-efficacy is an important predictor of individuals' decision to use computers. In this respect, Karsten and Roth (1998) stated that when people have high computer self-efficacy beliefs, it is more likely that they will visualize themselves as capable to use computer technology. Conversely, people with lower computer self-efficacy beliefs become more stressed using computers and hesitate to continue using them when they have a problem (Karsten and Roth, 1998). Behaviour results would be useless if the individual doubted about his or her capability to successfully perform a task.

The authors who created UTAUT removed self-efficacy from the model since they determined that it was not a direct predictor of behavioural intention to use technology; however, empirical research has given evidence that it is a crucial predictor of acceptance and use of ICTs in numerous studies. For example, in a study conducted by Yang (2012) in a technical university in Taiwan with 58 EFL participant students, computer self-efficacy and attitudes were essential factors affecting the successful use of mobile learning in English learning. In another study, Yang *et al.* (2016) explored how the *badge* mechanism in digital game-based learning (DGBL) enhances learners' self-efficacy in English as a foreign language, and how self-efficacy could influence English learning performance. Results revealed that the *badge* mechanism increased students' self-efficacy, and in turn, positively influenced their performance. Moreover, in a subsequent analysis conducted by these researchers, it was observed that students with higher self-efficacy

outperformed those with lower self-efficacy. Tai (2016) examined the effects of collaborative writing instruction on undergraduate nursing students' writing performance and self-efficacy beliefs in an online learning system. Findings showed that although students did not achieve the level expected to approve the overall language test required for graduation, they improved their writing abilities. In another study conducted by Cakir and Solak (2014) to understand EFL students' attitudes towards the use of technology (*Facebook*) and its impact on academic achievement, self-efficacy along with perceived ease of use, attitude, and satisfaction had a significant positive effect on the academic achievement of Turkish students of English as a foreign language. Fageeh (2015) explored EFL students and faculty's perceptions of and attitudes towards the use of online assessment and practice in the tertiary context. Results revealed that perceived self-efficacy and perceived enjoyment were the most attractive characteristics of the assessment system that formed positive attitudes towards e-testing and helped build intrinsic motivation towards using technology.

In a study not related to the use of ICTs, Tabrizi and Saeidi (2015) examined the relationship between Iranian EFL students' self-efficacy, autonomy, and listening comprehension skill. Results showed a positive correlation between listening self-efficacy beliefs, listening autonomy, and listening comprehension. Even though this research did not examine the use of ICTs in EFL, it serves to show the influence of self-efficacy as a predictor of students' performance. Researchers suggested that building self-efficacy and autonomy in listening comprehension skill is crucial to ensure a successful performance in EFL students' listening comprehension (Tabrizi and Saeidi, 2015).

Regarding the impact of self-efficacy on the use of technology, Sahina *et al.* (2013) assert that individual capabilities in the application of new technologies influence their use, and consequently, the quality of education when using technology in educational settings. Furthermore, some studies have found that self-efficacy has to be increased for the behavioural intention to use technology to increase as well (Padumadasa, 2012). Previously, Compeau *et al.* (1999) declared that the use of technology (i.e., computer) is the result of beliefs and affective responses towards ICTs. Likewise, affective responses are usually measured by attitudes towards use and users' assessment of the behaviour as positive or negative, and there is a solid relationship between self-efficacy and individual reactions towards acceptance and use of computers (Compeau *et al.,* 1999). In this sense, Al-Alwan and Mahasneh (2014) point out that 'When teachers create a learning environment in which students feel comfortable and confident, it will enhance positive attitudes towards school' (p. 172). Kumar, Rose and D'Silva (2008)

commented that the greater self-efficacy teachers have, the more positive the attitude they possess towards technology, and the greater the likelihood they will use it. Conversely, Pan and Franklin (2011) argued that when the teacher's self-efficacy is low, it is very likely that he or she does not have a positive attitude, and therefore, not a favourable desire to use technology in the classroom.

In the present study, the teachers and students' judgment of their abilities to use ICTs in the teaching and learning of EFL will be measured through the *ICT self-efficacy* construct added to the UTAUT model (see section 3.3).

2.7.3.2 Attitudes

Fishbein and Ajzen (1975) defined attitudes as 'an individual's positive or negative feelings (evaluative affect) about performing the target behavior' (p. 216). They pointed out that attitudes are related to a stimulus object (e.g., a person, place, event, or idea), and they show the individual's feelings or affect towards that object (Fishbein and Ajzen, 1975). In the present study, attitudes refer to EFL teachers and students' positive or negative feelings towards using ICTs in the teaching and learning of EFL. The authors of UTAUT removed attitudes from the model because they determined that they would have a non-significant influence on the behavioural intention to use technology and due to the strength of association between performance expectancy, effort expectancy, and behavioural intention to use. For this reason, the attitude construct was eliminated from the original UTAUT model as a direct predictor of behavioural intention. Nevertheless, there is evidence in the literature that attitudes may influence the user's behavioural intention and usage of technology (e.g., Sang *et al.*, 2010; Tzeng, 2011; Aydin, 2013; Cakir and Solak, 2014; Fageeh, 2015; Madawi and Tariq, 2016; Park and Jung, 2016).

Fageeh (2015) asserts that using a new tool or system is challenging for both teachers and students. He points out that individuals' emotional reactions should be seriously considered to enhance the teaching and learning processes. Moreover, a change in the faculty and learners' behaviours and attitudes is essential for the acceptance, implementation, and diffusion of technology in the future (Fageeh, 2015). In a study conducted by Sang *et al.* (2010) on student teachers' thinking processes and ICT integration, findings revealed that among the variables explored, namely, constructivist teaching beliefs, teaching efficacy, computer self-efficacy, and attitudes towards computer use in education, the latter one was the strongest predictor of prospective computer use. The researchers concluded that a successful ICT integration is related to the thinking processes of classroom teachers, and highlighted the importance of an integrated

and concurrent understanding of teachers' thinking processes. Tzeng (2011) explored prospective users' acceptance of the e-portfolio system. Results showed that attitudes had the strongest direct effect on intentions to use, and factors such as perceived epistemic value (i.e., the sense of newness derived from a number of meaningful improvements that a system offers to users) and perceived contextual value (i.e., organizational support for technology implementation) had a stronger influence on intention if mediated by attitudes.

The importance of attitudes in acceptance and use of technology is such that it appears as a construct in six of the eight models in which UTAUT is grounded in constructs related to the enjoyment or pleasure of using technology. The attitudes construct appears as *attitude towards behaviour* in TRA, TPB, C-TAM-TPB, *intrinsic motivation* in MM, *affect towards use* in MPCU, and *affect* in SCT (Gilbert, 2015). However, the role of attitudes in technology acceptance investigations has been a matter of debate among researchers. Teo (2009) conducted a study to reconsider the role of attitudes as a predictor of technology usage in the Technology Acceptance Model (TAM). He compared two TAM models, one including attitudes and the other without attitudes. Findings revealed that the presence of attitudes did not contribute to the overall variance in usage. Hence, he concluded that the attitude construct in the TAM was unnecessary. Like Teo (2009), some researchers favour the omission of attitudes from the TAM model (e.g., Nistor and Heymann, 2010; Teo and Noyes, 2011). Yet, others are in favour of the inclusion of attitudes since they have demonstrated to play a significant role as a predictor of the intention to use technology in TAM (López-Bonilla and López-Bonilla, 2011; Ursavaş, 2013). For example, Kim *et al.* (2009) re-examined the role of attitudes to explain their effect on individuals' behavioural intention to use technology. They found that regardless of the strength of the attitude construct, it was the most important determinant of behavioural intention.

In this study, the adapted version of the UTAUT model includes key predictors of use behaviour (performance expectancy, effort expectancy, social influence, ICT self-efficacy, and facilitating conditions) to examine their contribution to EFL teachers and students' attitudes towards the use of ICTs in language learning. However, it is unknown whether teachers and students' attitudes towards ICTs can predict their actual usage and continuance intention to use ICTs in the teaching or learning of EFL. As Bagozzi *et al.* (1992) pointed out, even though individuals develop affective reactions towards objects, it does not mean that such attitudes will lead them to perform an action. They contend that '... attitudes towards objects do not cause behaviors but rather specific motives to act do' (p. 660). That is, people are more inclined to use new technologies because of the benefits they expect to obtain from it. For these reasons, the present study seeks to establish

whether there is a relationship between attitudes, actual usage, and continuance intention to use instead of considering attitudes as a direct predictor of these variables.

2.7.3.3 Continuance intention to use

Consumer behaviour, specifically user satisfaction and post-purchase behaviour, has been studied in marketing research using the Expectation-Confirmation Theory (ECT). Oliver (1980) asserts that satisfaction influences the consumers' attitude change and their purchase intention. That is, consumers have expectations before being exposed to usage (attitude prior to use) and, depending on how those expectations are met, they may be satisfied or dissatisfied. If users are satisfied, it is very likely that they have a repurchase intention. Conversely, a dissatisfying product may reduce users' intention to repurchase (Oliver, 1980). Bhattacherjee (2001) used ECT (Oliver, 1980) and theoretical and empirical findings from the IS usage field to create a model of IS continuance behaviour. He referred to continuance intention as the 'intention to continue using the information system' (Bhattacherjee, 2001). Bhattacherjee (2001) examined how cognitive beliefs (perceived usefulness) and affect (satisfaction) influenced users' intention to continue to use online banking services of a large national bank in the United States. Findings revealed that confirmation of expectations and satisfaction can explain the continuance intention among online banking users.

Different to the original ECT that explores pre-consumption and post-consumption variables, the ECT model of IS continuance behaviour focuses only on post-acceptance expectations; since, as Bhattacherjee (2001) points out, '…expectation may change with time, as is often the case with IS use' (p. 355). That is, users' pre-acceptance attitude is only grounded in cognitive beliefs such as perceived usefulness or ease of use and formed with information received from different sources, namely people, media, sellers, and so forth. This information could be biased, and therefore, it may lead to forming erroneous and unrealistic users' attitude. Conversely, post-acceptance satisfaction is based on users' direct experience on IS; thus, it is more realistic and unbiased (Fazio and Zanna 1981, as cited in Bhattacherjee, 2001).

In a further study, Bhattacherjee and Premkumar (2004) conducted a mixed-method research to understand the beliefs and attitude change during a period of IT usage. They focused on user perceived usefulness and attitude because these two constructs are considered key determinants of initial IT usage and long-term usage intention and behaviour (continuance) (Bhattacherjee, 2001). They examined the computer-based tutorial (CBT) usage in end-user training contexts in three points in time and rapid application development (RAD) system usage in two points in time.

Results showed that for both CBT and RAD subjects usefulness and attitude decreased, indicating that there were more dissatisfied subjects than satisfied after a period of usage. Findings suggested that IT users' usefulness and attitude perceptions tend to change with time, especially during the initial phases as users get familiar with IT usage and gain experience. Additionally, results of the qualitative study revealed the existence of new constructs such as usability, compatibility, and resource limitations that could also serve to explain the beliefs and attitude change (Bhattacherjee and Premkumar, 2004).

Venkatesh *et al.* (2011) extended the Bhattacherjee and Premkumar's (2004) Two-stage Model of Cognition Change to study the variation in cognitive beliefs (i.e. perceived usefulness and disconfirmation) and affect (i.e. satisfaction and attitude) towards technology usage, to have a better understanding of users' post-adoption behaviour. They assert that UTAUT itself does not provide information when a negative disconfirmation of its predictors occurs; hence, the possible effect of disconfirmation on use behaviour and future use is not explained. Bhattacherjee and Premkumar (2004) define disconfirmation as the degree to which the user's initial cognition is in agreement or disagreement with actual experience. Venkatesh *et al.* (2011) added the constructs social influence, effort expectancy, and facilitating conditions of the UTAUT model to the Bhattacherjee and Premkumar's (2004) model, which contains the perceived usefulness (performance expectancy) construct, to study the pre- and post-adoption of an e-government Web site (GovWeb) and a Smart Identity Card (SmartIDs) of users from Hong Kong in two periods. The construct of trust was also added as a contextual belief because the authors recognized the influence of different contexts in usage. Results showed that the UTAUT predictors added to the ECT model explained the moderating variables of disconfirmation, attitude, and satisfaction, and consequently, IS continuance intention. Additionally, the extended model of Venkatesh *et al.* (2011) enhanced the understanding of the variations of pre-usage beliefs and attitudes, as well as the relevance of trust on individuals' pre- and post-usage attitudes and on satisfaction in a context where personal and sensitive information is required (Venkatesh *et al.*, 2011).

A variety of studies have explored the continuance intention to use technology in the area of EFL (e.g., Murat, 2012; Chang *et al.*, 2013; Huang *et al.*, 2014; Zhao, 2014). Regardless, whether there is a relationship between teachers and students' attitudes towards the use of ICTs and their continued use of those ICTs for the teaching and learning of EFL has not been investigated. Therefore, the present study examines their possible relationship.

2.7.4 Literature review of studies conducted with the UTAUT model

Venkatesh *et al.* (2016) conducted a theoretical analysis of the literature on UTAUT and its extensions from September 2003 to December 2014 as a basis for further improvement of the model. They say that UTAUT has prospered as new information technologies have emerged. In their analysis, they found that the UTAUT model has been used in a variety of areas such as business organizations, educational institutions, government agencies, and hospitals among others (Venkatesh *et al.*, 2016). For example, Cianciotta (2016) used the UTAUT model to examine the relationship of determinants of small business owners' decision to adopt the *office tools* and productivity category *Software-as-a-Service* as a viable solution to get benefited from cost savings and the flexibility of IT. Findings showed that performance expectancy, effort expectancy, and social influence explained 63% of the variation in behavioural intention, and behavioural intention and facilitating conditions explained 59% of the variation in use behaviour. Researchers concluded that providers should attempt to influence potential small business owners' behavioural intention since it is a direct predictor of use behaviour (Cianciotta, 2016).

In another study, Madigan *et al.* (2016) examined how users' acceptance variables might influence their use of a public automated transport system (ARTS) as part of the European project *CityMobil2*. Results indicated that all three UTAUT constructs explored in the study influenced the users' behavioural intention to use ARTS. Performance expectancy was the strongest predictor, which suggests that people's decision about using ARTS is determined by their perceptions of how well it performs over other types of public transport systems. Social influence and effort expectancy also had an impact on behavioural intentions, suggesting that other people's opinions of the system and their perceptions of how difficult using it is influences the decision to use ARTS (Madigan *et al.*, 2016).

In the educational field at a higher level, Ouedraogo (2017) used the UTAUT model to assess the factors of acceptance and educational use of ICT. A survey was administered to 82 teachers from the University of Ouagadougou in Africa. Findings revealed that the construct performance expectancy of ICT, understood as the expected utility and expected results, positively affected the teachers' acceptance of ICT. Furthermore, it was found that the acceptance of ICT and Internet experience influenced the educational use of ICT. On the other hand, facilitating conditions had a negative effect on these purposes (Ouedraogo, 2017). In another study on technology usage in education, Radovan and Kristl (2017) combined the UTAUT model with the elements of the Community of Inquiry model (Garrison *et al*., 2000) such as *social presence*, *teaching presence*, and *cognitive presence* to develop a conceptual model that described the determinants of CoI to

predict the readiness to use and the actual use of learning management systems (LMS) among teachers at the University of Ljubljana. Most of the faculty at the university uses Moodle LMS as the preferred system, but there are other LMS platforms or tools that are also used. Results showed that the usefulness of LMS (measured as performance expectancy) was the main predictor of its acceptance, and LMS acceptance largely depended on the characteristics of the system. In addition, they discovered that social presence (teachers' participation, emotional expression, communication, and group cohesion) was strongly influenced by teaching presence (Radovan and Kristl, 2017). In the same vein, Torres *et al.* (2011), carried out a study with 47 schools of Peru to validate the UTAUT model by adding the e-learning motivation construct. Findings showed that factors like e-learning motivation and social influence had a positive impact on the behavioural intention of Peruvian students to adopt and use an educational portal.

Concerning the use of UTAUT in continuance intention to use technology, an investigation conducted by Yueh *et al.* (2015) on the factors that affect Taiwanese university students' adaptation and continued use of a *Wiki* system for collaborative writing tasks in a general education course revealed that factors of social influence have direct and significant influence on students' actual usage of the Wiki system, and in turn, actual usage influenced their intentions of future use (Yueh *et al*., 2015). Similarly, Lwoga and Komba (2014) used an amended version of UTAUT, to which they incorporated the *self-efficacy* and *continued usage intention* constructs, to investigate the factors that influenced actual usage and continued usage intentions of an e-learning system. Additionally, they examined the challenges of using the e-learning system. Participants were 300 undergraduate students from the School of Business of the University of Mzumbe. Findings showed that actual usage was determined by self-efficacy, while continued usage intentions of web-based learning system were influenced by performance expectancy, effort expectancy, social influence, self-efficacy, and actual usage. Regarding the challenges students face when using the e-learning system, results revealed that they are related to ICT infrastructure, unfriendly LMS interface, weak ICT policies, management and technical support, limited skills, lack of awareness, resistance to change, and lack of time to prepare e-content and use the e-learning system (Lwoga and Komba, 2014).

Researchers have also used the UTAUT model to explore the role of attitudes towards technology acceptance. Thomas *et al.* (2013) compared the utility of modifying the version of the original UTAUT model to examine the students' adoption of mobile learning in higher education in a developing country; data collection methods included an online survey. Results suggested that culture and country differences moderated the UTAUT effects; therefore, taking into account the

context of the study was essential to obtain reliable outcomes. The researchers concluded that including the attitudes construct to the model was an appropriate modification since it increased its explanatory power.

Regarding the area of English as a foreign language, Liu (2013) used the UTAUT model as a framework to examine the factors affecting ESL college students' acceptance and use of the educational platform Moodle in a mandatory setting. Results showed that performance expectancy, effort expectancy, social influence, facilitating conditions, and former practice significantly demonstrate students' acceptance and use of Moodle. Concerning the social influence construct, many students said that they used Moodle because it was mandatory; therefore, their acceptance process of this tool was involuntary at the beginning, since they also informed that in the process of accepting Moodle they were mainly influenced by their instructors of grammar and reading classes, who encouraged them to use the platform and explained to them about the benefits of using technology.

2.8 Chapter summary

This chapter reported on the central role of ICTs in modern education. The review of the literature showed the need for doing more research about how new technologies are being used in the teaching and learning of EFL within the blended learning modality, the importance of developing an awareness of their affordances and limitations, and the need to examine to what extent factors related to the acceptance and use of technology may contribute to teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL. Furthermore, some of the barriers that hinder the use of ICTs were described; however, since those barriers may apply to all educational contexts, the importance of identifying ones that may particularly affect the current and future use of ICTs in the area of EFL is essential.

The chapter presented the Unified Theory of Acceptance and Use of Technology (UTAUT) selected as a theoretical framework in terms of the constructs and moderating variables it has, as well as the constructs that were added to the model (attitudes, ICT self-efficacy, and continuance intention to use) to adapt it to the context of the study. Moreover, empirical studies that provide examples of the predictive power of the different constructs of UTAUT were included in this chapter.

Chapter 3 Methodology

3.1 Introduction

This study seeks to test an adapted version of the UTAUT model, to determine to what extent factors considered as key predictors of acceptance and use of technology such as performance expectancy, effort expectancy, social influence, ICTs self-efficacy, and facilitating conditions contribute to the teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL. Equally, it explores whether there is a relationship between their attitudes, actual usage, and continuance intention to use ICTs. Furthermore, the study seeks to establish the EFL teachers and students' actual usage and continuance intention to use ICTs to develop the four language skills (listening, reading, speaking and writing) and sub-skills (grammar, vocabulary, and pronunciation) within the blended learning modality, to understand the links between expectations of technology use and its current use, as well as its impact on language teaching and learning. To achieve these aims, the following research questions were addressed:

1. To what extent do the constructs included in the adapted version of the UTAUT model (performance expectancy, effort expectancy, social influence, ICT self-efficacy and facilitating conditions) contribute to the EFL teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL?

2. What is the relationship between teachers and students' attitudes, actual use, and continuance intention to use ICTs in EFL teaching and learning?

3. In what ways do the ICTs most frequently used within the blended learning modality impact the teaching and learning of EFL?

    a) To what degree are ICTs being used in both in-class and out-of-class activities?

4. How do EFL teachers and students actually use ICTs within the blended learning modality?

5. What barriers do EFL teachers and students encounter when using ICTs in the blended learning modality?

The present chapter has five sections. Section 3.2 presents the mixed-methods research approach adopted in the study. It starts out providing several definitions, characteristics, and some of the strengths and weaknesses of this approach, as well as the reasons why the researcher decided to use mixed methods. Section 3.3 presents an adapted version of the Unified Theory of Acceptance

and Use of Technology model proposed for this study. This contains the constructs: ICT self-efficacy, attitudes, and continuance intention to use added to the model. Additionally, it provides a justification for the selection of this model to frame the study. Section 3.4 offers a brief description of the theoretical foundations, design, and functionality of the Smrt English course. Section 3.5 presents the quantitative and qualitative methods for data collection used in the study: surveys, focus groups, and classroom observations. It offers a detailed explanation of the procedures followed to design the instruments, and the strategies implemented to ensure their validity and reliability. The piloting study of the survey instrument is included in this section as well; a broad explanation of the data collection and data analysis procedures of each instrument and demographic information of participant teachers and students. Finally, section 3.6 presents the ethical considerations observed in the study.

3.2 Research approach

Dörnyei (2007) asserts that doing research essentially means to find answers to questions. He points out that good research implies to be methodical so that the findings at the end of it are valid. Hence, evidence has to be collected systematically and the investigation has to be methodically planned independently of the research methods selected.

On one hand, according to the literature, there are two major research approaches in research, namely quantitative and qualitative. The research approach considered most suitable for an investigation and the methods of data collection selected will be determined by the nature of the investigation and the type of information needed (Dörnyei, 2007). Quantitative research is an approach in which relationships among variables are examined with the purpose of testing objective theories (Creswell, 2014). It involves the use of procedures to collect information that leads to the analysis of numerical data by using statistical software (e.g., SPSS), to provide answers to structured and predetermined research questions (Dörnyei, 2007; Bell, 2010).

On the other hand, qualitative research is an approach that focuses on understanding individuals' perceptions of the world (Bell, 2010). This type of research examines the meaning people give to a social or human issue. Data analysis is done inductively from particular to general, and the researcher makes interpretations of the data collected (Creswell, 2014). Dörnyei (2007) points out that the procedures used to collect information consist of open-ended non-numerical data, such as interviews, analysed qualitatively and not statistically as occurs with quantitative data. Each research approach has strengths and weaknesses, and they are not necessarily incompatible (Hernández *et al.*, 2010).

The present study utilized a mixed methods approach under a post-positivist paradigm. Post-positivist researchers reject the absolute truth of knowledge and accept that when studying individuals' behaviour and actions, they cannot be positive of their assertions of knowledge (Creswell, 2014). Post-positivists recognise that all observation is fallible due to individuals' perceptions of reality are always biased because of their cultural context and personal views. Therefore, post-positivist research emphasises assigning probabilities to observed findings (Johnson *et al.,* 2007). Within this position, numeric measures to observations and individuals' behaviour are examined to verify and refine existing theories (Creswell, 2014).

3.2.1 Mixed methods approach

From the combination of quantitative and qualitative approaches has emerged a third approach called mixed methods (Hernández *et al.,* 2010). Creswell (2014) defines mixed methods as '… an approach to an inquiry involving collecting both quantitative and qualitative data, integrating the two forms of data and using distinct designs that may involve philosophical assumptions and theoretical frameworks' (p. 32). According to Creswell, the core assumption is that mixing these two approaches allows a deeper understanding of a research problem than when only one is used. On the same subject, Hernández *et al.* (2010) understand mixed-methods research as a systematic process that involves the collection, integration, and analysis of quantitative and qualitative information to make inferences that serve to attain a better understanding of the phenomenon under study.

After analyzing nineteen definitions provided by leading mixed methods research methodologists Johnson *et al.* (2007, p. 123) defined mixed methods research as follows:

> Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative or quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration.

Authors agree that from the combination of qualitative and quantitative approaches is possible to have a better understanding of the research problem than with a single method. Since using mixed-methods allows the analysis of phenomena in depth in terms of contextual dimension, patterns, different perspectives, the whole and its parts (Greene and Caracelli, 1997; Dörnyei, 2007; Johnson, Onwuegbuzie and Turner, 2007; Cohen, Manion and Morrison, 2011; Creswell, 2014).

At a procedural level, Creswell (2014) points out that a mixed-methods approach is helpful in order to have a better understanding of research problems and/or questions. He contends that the use of mixed-methods enables researchers to a) compare diverse points of view based on

quantitative and qualitative data, b) explain in-depth quantitative outcomes, by adding information from qualitative data, c) develop better tools to gather and measure quantitative data, by previously collecting and analysing qualitative data, d) incorporate subjects of study's opinions to comprehend in-depth experimental results, e) better understand the changes needed for a marginalized group, and f) collect quantitative and qualitative data in longitudinal studies.

On the other hand, challenges exist when researchers choose to follow a mixed-methods approach. For example, the analysis of large amounts of quantitative and qualitative data may constitute a time-consuming activity. Furthermore, the use of mixed methods demands the researcher to be well versed in both methods; since their complexity require the use of visual aids (e.g., flow diagrams) to understand processes and details (Creswell, 2014). Hesse-Biber (2010), points out that the weaknesses of the mixed methods approach are not commonly mentioned in the literature; however, one of the disadvantages of this type of research is its high cost, since it requires a lot of time and energy from the investigator. Another potential issue that may diminish the effectiveness of mixed methods is the marked emphasis that researchers give to the quantitative method. In addition, the use of mixed methods can have negative effects when the researcher is not skilful enough in the application of both methods, or unnecessary methods are used to answer a research question (Hesse-Biber, 2010).

3.2.2 Selection and justification of the research approach

The research problem and the nature of the information sought determine the selection of the research approach (Dörnyei, 2007) as previously mentioned in section 3.2. In that respect, the researcher selected a mixed-method approach to achieve the purposes of the investigation and answer the research questions for several reasons. Firstly, she used a case study method to collect and analyse the information. Since 'Cases are primarily people ...' (Dörnyei, 2007, p.151), the researcher considered important to hear the participants' voices to make more sense of statistical data. Secondly, she thought that a mixed-methods approach would be appropriate to triangulate the information collected through surveys, focus groups, and class observations to corroborate or contrast the findings of these methods (Laws *et al.*, 2003). Thirdly, she considered that the use of multiple methods would be beneficial to improve the validity and credibility of the findings (Dörnyei, 2007).

This multi-method study conducted quantitative and qualitative methods concurrently. The researcher collected and analysed in-depth different EFL teachers and students' perceptions and opinions regarding the use of ICTs in EFL teaching and learning at a tertiary level. Qualitative

information served to better understand the quantitative one, facilitating the comprehension of the relationships under study. Dörnyei (2007) says that a mixed methods approach allows researchers to have a better understanding of complex issues; since words (qualitative) can be used to add meaning to numbers (quantitative) and vice versa. Both methods, qualitative and quantitative, have their own strengths and weaknesses; this is why the combination of them in a mixed-methods approach has become the preferred approach in the research field (Creswell, 2003). Similarly, Dörnyei (2007) said that '… certain issues are best researched using either QUAL [qualitative] or QUAN [quantitative] methods but I have also come to believe, that in most cases a mixed methods approach can offer additional benefits for the understanding of the phenomenon in question' (p. 47). Moreover, although the creators of UTAUT used a quantitative method when elaborated the model, they encourage researchers to use mixed methods in investigations related to information systems to provide valuable insights of the phenomenon under study through the development of a meta-inference analysis (Venkatesh *et al*., 2013). Therefore, for these reasons, a mixed-methods approach was chosen by the researcher to achieve research purposes and answer the research questions.

3.3 The UTAUT model adapted for this study

The UTAUT model was designed to explore individuals' acceptance and use of technology in private organizations within mandatory and voluntary settings (see figure 7). This study employs an adapted version of the model according to the educational context where it takes place. Following the distribution of the model from left to right, at the beginning are the independent variables including factors like performance expectancy, effort expectancy, social influence, facilitating conditions, and ICT self-efficacy to explore their contribution to the EFL teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL. The dependent variables are attitudes (placed at the centre) as well as actual use and continuance intention to use (placed at the right side) to examine whether there is a relationship between these variables.

Performance expectancy can be assumed as the degree to which EFL teachers and students believe that using ICTs can help them improve their EFL teaching and learning skills. It can also be conceived as the teachers and students' perceived usefulness of ICTs, and the teachers and students' interest in learning outcomes that can be obtained through the use of technology.

Effort expectancy has demonstrated to have a positive relationship with attitudes in several studies under the ease of use construct (e.g., Cakir and Solak, 2014; Dizon, 2016). Similarly, the

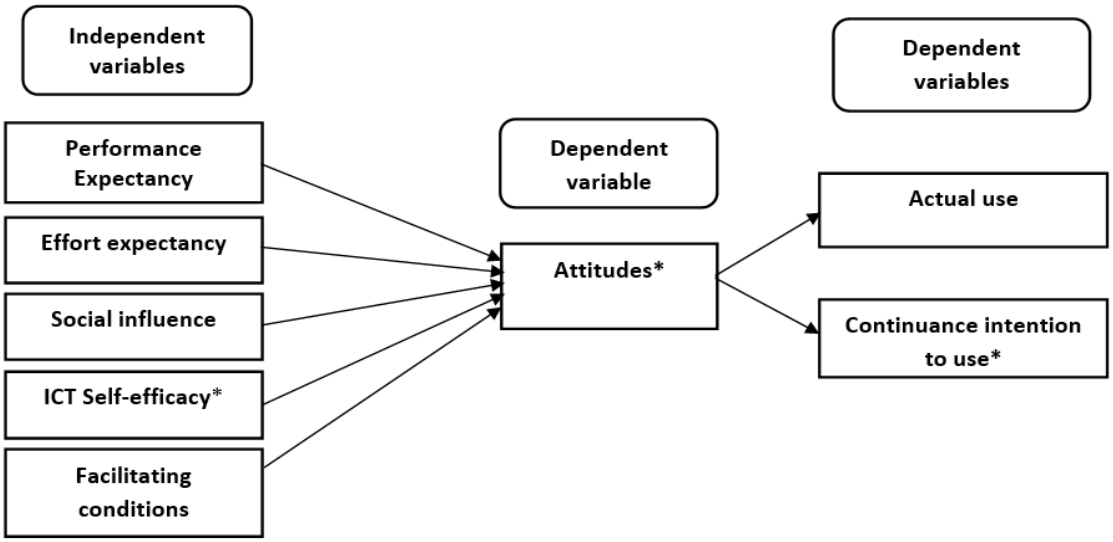


Figure 7: Adapted version of the UTAUT model proposed for this study.
Note: New constructs appear with an asterisk.

present study examines the contribution of effort expectancy to EFL teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL, by exploring aspects such as how easy or difficult they find the use of technology in EFL, and if they consider they can become skilful in the use of technology.

Social influence in an educational setting may affect the individual's attitudes towards the use of ICTs. That is, if important others believe that the person should use ICTs, he or she may perceive its use as more beneficial. Important others can include teachers, colleagues, university administrators, students, peers, or family members. For instance, if a teacher believes that using ICTs will make him or her more valuable for the administration of the university, it will be more likely that the teacher will use technology. In the same way, Liu (2009) pointed out that the social environment, which includes parents and teachers' attitudes towards technology and the support students receive to work with computers, has a great influence on students' attitudes.

Facilitating conditions explore the EFL teachers and students' perceptions of the degree to which the institution supports the use of technology (Venkatesh *et al.*, 2003). Different to the original UTAUT model, in which facilitating conditions were found to be a direct predictor of use behaviour (actual use) of technology, this study examines their contribution to teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL. The higher the teachers and students' beliefs are about having the necessary knowledge to use ICTs, well-equipped classrooms, and technical support, the better their attitudes will be towards technology usage (Radovan and Kristl, 2017).

One of the major changes made to the UTAUT model was the inclusion of the *ICT self- efficacy* construct. The research literature mentions that ICT self-efficacy is a personal factor that particularly influences the teachers and students' attitudes towards the use of technology (see section 2.3.1). Bandura (1977) states that people may develop self-efficacy in different ways; for example, through their own experiences when dealing with difficult situations. Also, if individuals observe others successfully performing actions, they may think that they can do it too. Likewise, listening to other people's opinions about their capacity to achieve the desired level of competence may contribute to reinforcing individuals' beliefs in their own potential (Bandura, 1977). Because of the importance of people's perceptions of their ability to use technology, the present study explores the contribution of ICT self-efficacy to the EFL teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL.

Another major change made to the UTAUT model was the incorporation of the *attitudes* construct. In this study, attitudes refer to the EFL teachers and students' positive or negative feelings towards using ICTs in the teaching and learning of EFL. The attitudes construct was added to the adapted version of the UTAUT model, replacing the behavioural intention construct of the original model (see figure 6); since it was not relevant in the context of this research for several reasons. Firstly, one of the purposes of the study is to explore the contribution of predictive factors to teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL. This implies that new technologies were already used by EFL teachers and students before the conduction of this study, and 'a behavioural intention…refers to a person's subjective probability that he [or she] will perform some behaviour' (Fishbein and Ajzen, 1975, p. 288). Secondly, Ajzen and Fishbein (1980) assert that people are aware of the consequences of their actions before deciding to perform a given behaviour; however, in the case of this study, this is not possible because the use of ICTs is mandatory. Lastly, the constant repetition of action eventually becomes a habit or routine. Therefore, the everyday use of ICTs may become habitual for both teachers and students, and not the result of a conscious plan (Venkatesh *et al.,* 2000; Ajzen, 2005).

Use behaviour is the EFL teachers and students' *actual use* of ICTs either in-class or out-of-class activities. Since teachers' role is central in the classroom (Ertmer, 1999), the way they use ICTs is crucial to improve students' language learning with technology (Motteram, 2013). Bax (2003) points out that the use of technology has taken place through different phases such as restricted, open, and integrated, referring to the 'normalization' of the use of technology in modern society. In this respect, Motteram (2013) argues that although this information is valuable; it is still more important to know how teachers use new technologies in the classroom and how they facilitate language learning.

The last major change to the original UTAUT model was the addition of the construct *Continuance intention to use*. This construct is used to explore the willingness of EFL teachers and students to use ICTs in future teaching and learning experiences and its possible relationship with their attitudes towards the use of ICTs. Focusing on continuance intention to use ICTs is appropriate in the context of this study, considering that digital technologies were already in use in the University of Pitic before the conduction of this research.

The research literature shows that individuals' affective feelings change over time as users get familiar with new technologies (Venkatesh *et al.*, 2011; Bhattacherjee and Premkumar, 2004). In this study, the dynamics of the continued usage of ICTs is not explored because data collection takes place at the same point in time. In addition, due to the fact that the mediating role of attitudes between perceived usefulness and behavioural intention (Davis *et al.,* 1989) is stronger in the pre-acceptance phase than in the post-usage phase (Bhattacherjee, 2001), it is uncertain whether EFL teachers and students' attitudes towards the use of ICTs can determine their continuance intention. Moreover, it is unknown if the teachers and students' affective feelings towards the use of ICTs would influence their future use in the event that their motivation ends (Bagozzi *et al.,* 1992). For example, once the students finish their English courses, or if teachers work for other institutions where the use of ICTs is not mandatory. Therefore, the present study examines whether there is a relationship between teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL and their continuance intention to use those technologies, instead of considering that attitudes are a direct predictor of continuance intention to use.

3.3.1 Moderating factors not explored in this study

The original UTAUT model contains four moderating factors, namely voluntariness of use, experience, gender, and age. These factors moderate the relationship between performance expectancy, effort expectancy, social influence, and the behavioural intention to use technology. However, these factors may not apply in all contexts (Dwivedi *et al.,* 2017). For example, in institutions where the use of technology is mandated, the moderating effect of voluntariness of use may have no variation. Venkatesh *et al.* (2012) made a similar observation of this fact, pointing out that most studies generally use a subset of the model and the use of moderators is omitted. In the present study, the effect of moderating factors will not be examined for several reasons. First, one of the aims of the study is to investigate the contribution of predictive factors of the UTAUT model to EFL teachers and students' attitudes towards the use of ICTs, not the

intervening effect of attitudes between these moderators and behavioural intention to use ICTs. Second, the use of ICTs in the university is mandatory; therefore, the moderating factor voluntariness of use does not apply in this context since it is considered a social influence. In addition, teachers and students' demographic information (see tables 3 and 4) shows that age and experience in the use of ICTs in the teaching and learning of EFL are very homogeneous, suggesting that there might not be any variation in the actual use of ICTs due to the moderating effect of these factors. However, even though this research does not examine the effects of moderating factors, they represent valuable data that help understand the context of the study.

3.3.2 Selection and justification of the UTAUT model

In addition to the explanation given in section 2.6 concerning the reasons why the researcher decided to select the UTAUT model as a framework of this study, numerous investigations that have utilised self-reported data, as in the present study, show evidence that this model is able to account for 70 per cent of the variance in usage intention; representing an important improvement surpassing all the pre-existing models where the maximum was around 40 per cent (Venkatesh *et al.*, 2003). This information reinforced the researcher's decision of using the UTAUT model to frame this case study research. Furthermore, the creators of the UTAUT recognised its limitations and recommended for future research to develop and validate appropriate scales for each construct in different contexts. Also, they suggested examining alternative measures for behavioural intention and actual use of technology (Venkatesh *et al.*, 2003). In this respect, it is important to note that the UTAUT model was formulated and tested in non-academic settings in the United States. For this study, the model was adapted to be used in a higher education setting, in which language learning with technology takes place in a blended learning environment in a Mexican context.

The next section presents the Smrt English course, the online course selected by the university (see section 1.4.1) when the blended learning modality for the teaching and learning of EFL was adopted.

3.4 The Smrt English course

This subsection presents a brief description of the theoretical foundations, design, and functionality of the Smrt English course. It begins with an explanation of the steps that teachers and students follow to work with Smrt, and includes an example of the structure of its units. The information was taken from the Smrt website at *http://www.smrtenglish.com,* section *Theory and practice*. Some images were included to illustrate Smrt's content and functionality.

Smrt consists of a form of blended learning that combines face-to-face interaction with the teacher in the classroom and online content. In the case of the University of Pitic, the students are assigned to a desktop computer to work online during class (Monday to Thursday). Fridays are scheduled for the students to work online outside the classroom. Smrt is an electronic textbook designed on a website that works with the applications of *Google* such as *YouTube, Google Docs, Google Drive, Blogger,* and *Gmail* among others.

At the beginning of the semester, the teacher types in 'My classes' section the students' emails and sends the class code for them to join the course. Once the students joined the course, they can edit their profiles and upload a picture. Students need to make a copy of the activities of Smrt to have a document where they can edit (see figure 8). To do this, in the 'File menu' they click on the 'Make a copy' button (In Spanish: Crear una copia). This copy is automatically stored in their *Google Drive*.

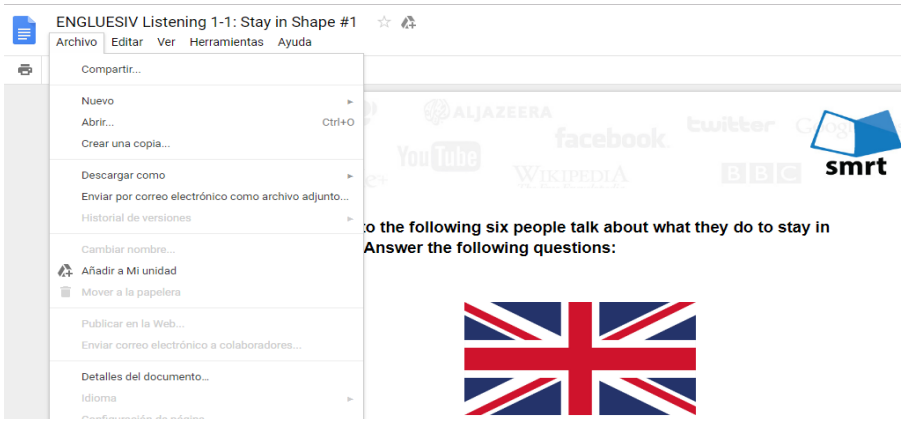


Figure 8: Making a copy of activity 1, unit 1, level IV of Smrt (example).

To send an activity for revision, the students share the document stored in *Google Drive* with the teacher and click on the button 'Can edit' to authorise the teacher to write in the document. The teacher receives the activity in his/her *Gmail* inbox and sends them feedback (see figure 9).

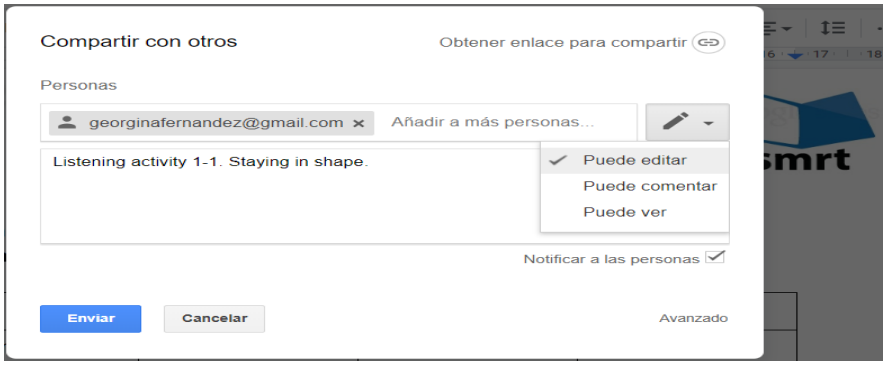


Figure 9: Sending an activity to the teacher's email.

The content of the unit has a non-linear organisation. That allows teachers and students to focus on areas of their interest. Each section is hyperlinked to lessons and exercises (see figure 10).

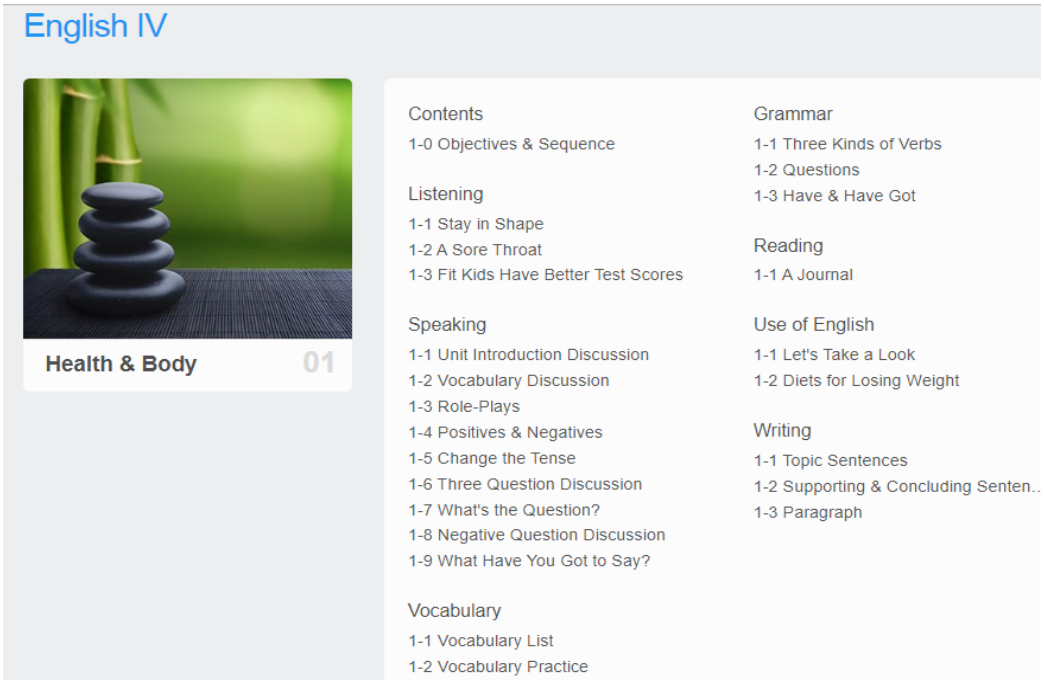


Figure 10: Unit contents. From Smrt Library, n. d., Retrieved May 25th, 2017, from https://www.smrtenglish.com/ues/library/313.

Smrt is based on the principles of the sociocultural approach to language learning involving the importance of context, interaction, scaffolding learning, and mediation of language and culture (see section 2.3.2.2). It pursues to promote collaborative learning as language learning is considered, in essence, a '... collaborative process whereby socially formed knowledge and skills are transformed into individual abilities' (Hall, 2012, p. 48). Teaching practices reflect the communicative approach in language teaching (CLT), whose goal is helping students construct meaning, rather than focusing only on obtaining good grades on tests of grammatical knowledge (Savignon, 1991).

For these reasons, Smrt was designed to encourage interaction between teacher-student, student-student, small groups, and peer editing using *Google Docs* during class or out of it. For example, the *Cafe* section offers a variety of video clips that teachers can use to promote discussion in the classroom, or students can watch the videos out of campus in their self-study time. Students click on the 'Cafe' button and choose a video of their interest or one assigned in advance by the teacher (see figure11).

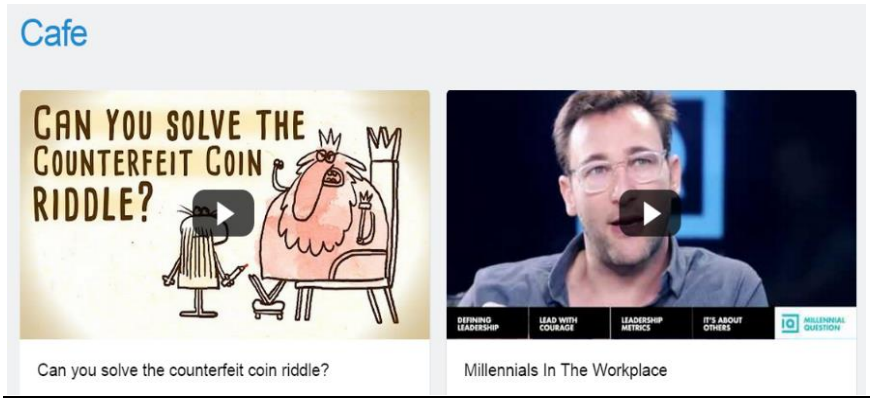
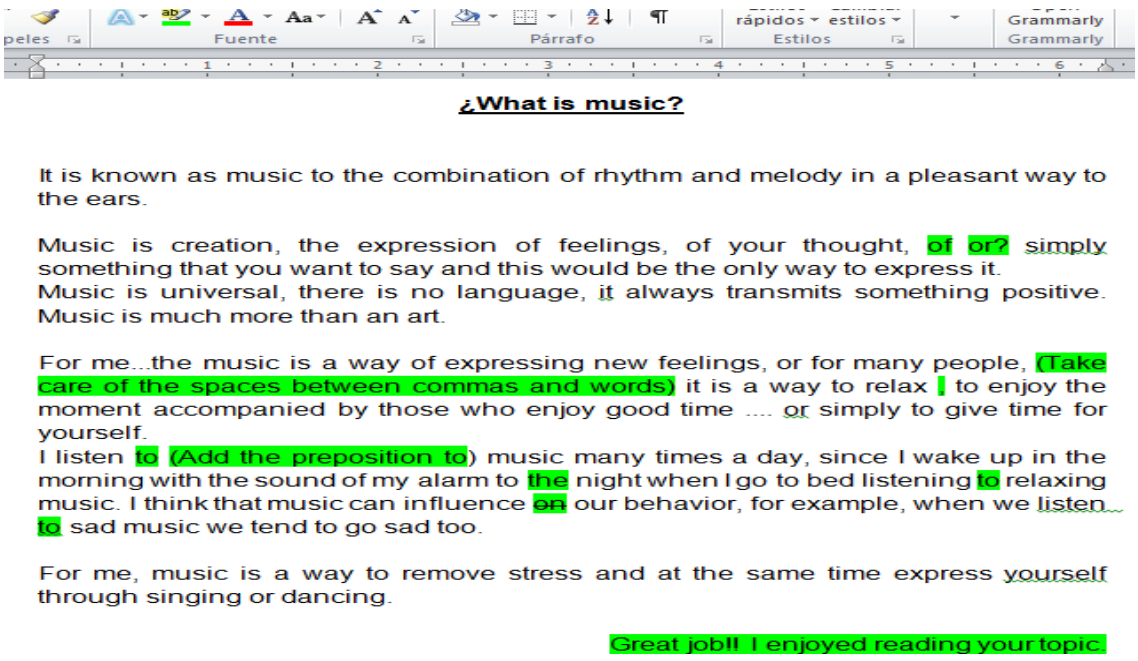


Figure 11: The Cafe section, n. d., Retrieved May 25th, 2017, from https://www.smrtenglish.com/Smrt/cafe.

Peer-editing activities using *Google Docs* are helpful to foster teacher-student and student-student interactions. Students share the document with the teacher, who can write in it synchronously or asynchronously providing feedback. Students may share documents with their peers to work in in-class activities, and also to work in out-of-class activities such as homework assignments and projects. See an example of a small group activity elaborated using *Google Docs* revised asynchronously by the teacher in figure 12.



¿What is music?

It is known as music to the combination of rhythm and melody in a pleasant way to the ears.

Music is creation, the expression of feelings, of your thought, of or? simply something that you want to say and this would be the only way to express it.
Music is universal, there is no language, it always transmits something positive.
Music is much more than an art.

For me...the music is a way of expressing new feelings, or for many people, (Take care of the spaces between commas and words) it is a way to relax , to enjoy the moment accompanied by those who enjoy good time .... or simply to give time for yourself.
I listen to (Add the preposition to) music many times a day, since I wake up in the morning with the sound of my alarm to the night when I go to bed listening to relaxing music. I think that music can influence on our behavior, for example, when we listen to sad music we tend to go sad too.

For me, music is a way to remove stress and at the same time express yourself through singing or dancing.

Great job!! I enjoyed reading your topic.

Figure 12: A written activity elaborated by English IV students using Google Docs.

Similarly, pair work activities included in Smrt encourage collaborative learning. For example, in the activity entitled *Lets' Take a Look* (see figure 13), students are asked to work in pairs to

practice a conversation. They have access to the activity transcript by clicking the button on the top right of the page. They can also listen to the recording to get help with pronunciation and intonation.

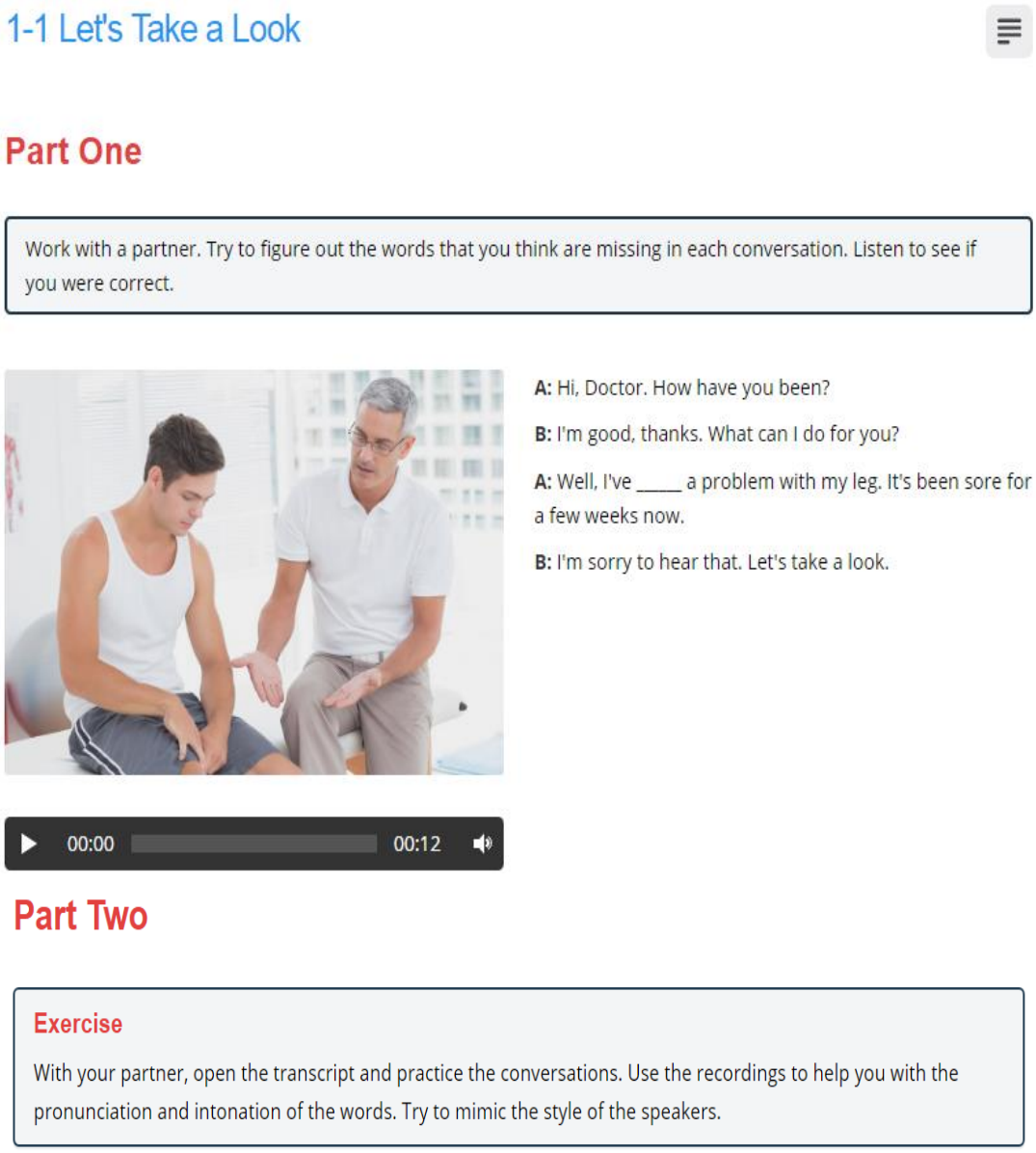


Figure 13: Activity Let's Take a Look. English IV. From Smrt Library, n. d., Retrieved May 25tth, 2017, from http://smrtenglish.com/smrt/lesson/7933

The teacher supports and guides students depending on their individual language needs. The aim is the successful scaffolding of learning, a process by which the teacher assists students academically and emotionally (Harmer, 2007). Smrt includes real-life listening activities taken from the Internet and reading materials from live websites to provide students with authentic context. This allows students to explore new resources, benefit from more practice, and receive immediate feedback (see section 2.3.2.1).

Figure 14: Activity Stay in Shape. English IV. From Smrt Library, n. d., Retrieved May 25th, 2017, from https://smrtenglish.com/smrt/lesson/453#

The example in figure 14 above, shows an activity linked to the website *English Listening Lesson Library Online* (ELLLO). The steps followed by students to work on the activity are: they click on the 'Exercise Two' button on the top right of the page-to access the activity. Then, they make a copy of the material and work on their own document. To listen to the audio, the students click on the 'ELLLO' button. This action opens the ELLLO website on a new page, showing a video of the conversation and additional exercises. When they finish the activity, they send it to the teacher's email for revision.

Open resources support the mediation of language and culture such as *TED talks* (Technology, Entertainment, and Design), *YouTube video clips, news clips, audio clips*, and *Google Apps*. In each unit, activities are worked online. Examples of tasks are cloze exercises, sentence transformation, vocabulary extension, listening comprehension, note-taking, discussions, and task-solving. The speaking activities are mostly carried out in face-to-face instruction, but students are encouraged to use other tools for holding conversations such as their smartphones or *Skype*.

Smrt offers many online resources that teachers and students can use to enrich teaching and learning. Some of these resources are linked to Smrt activities as the one seen in the previous example; while others can be used for self-study. They include world news, dictionaries, educational videos, and learning tools. See some of these resources in Figure 15.

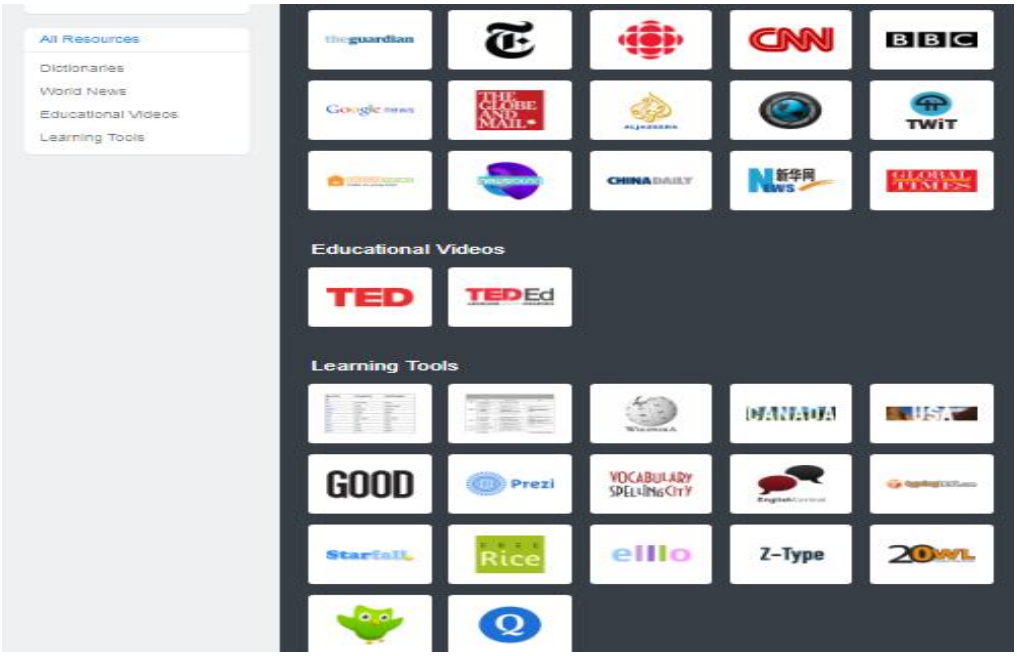


Figure 15: Smrt resources. From All resources section, n. d., Retrieved May 25th, 2017, from https://www.smrtenglish.com

The use of online resources enriches Smrt activities. For example, in the vocabulary section of unit 1, level IV, the students can listen to recordings of sentences that include words related to the unit topic, in this case, 'Health & Body'. This section provides a list of the words used throughout the unit (see figure 16). Students click on the arrow button to listen to the pronunciation. Clicking on the word opens the *Oxford Learner's Dictionaries* linked to the exercise where students can read the meaning of the word. The vocabulary section also contains a *PowerPoint* presentation with images and captions of sentences to learn vocabulary in context.

Vocabulary List

Word	Part of Speech	Example
ache	Noun, Verb	My body has lots of aches.
active	Adjective	An active lifestyle will improve health.
affect	Verb	A person's level of physical activity can really affect their stress levels.
allergic (to)	Adjective	I am allergic to cats.
allergy (to)	Noun	I have an allergy to cats.
aspirin	Noun	Aspirin is popular for headaches.
backache	Noun	My bed gives me backaches.

Figure 16: Vocabulary list. English IV, Unit 1. From Smrt Library, n. d., Retrieved May 25th, 2017, from https://smrtenglish.com/smrt/lesson/8768.

Regarding the teaching of grammar, every unit of Smrt includes the written explanation of grammar structures, exercises, and videos where an English teacher explains the grammar points of the lesson and provides examples. For example, blogs, among other activities, could help students access more advanced grammar activities (see figure 17).

Figure 17: The teacher's blog. An example provided by an English teacher.

Some resources of the course are only available to teachers such as the sections of evaluation, answers, and attendance. That is, the teacher decides whether sending the answers to exercises to the students' email for self-revision or discussing the responses in class. Equally, the teacher is responsible for the application of the tests provided by Smrt. These can be sent to the student's emails or administered on paper. As for attendance, this is taken in an automated way. The teacher clicks on the 'Attendance' button, and the students are registered as 'present', 'excused',

'late', or 'absent' automatically. However, the teacher can also change the attendance status manually (see figure 18).

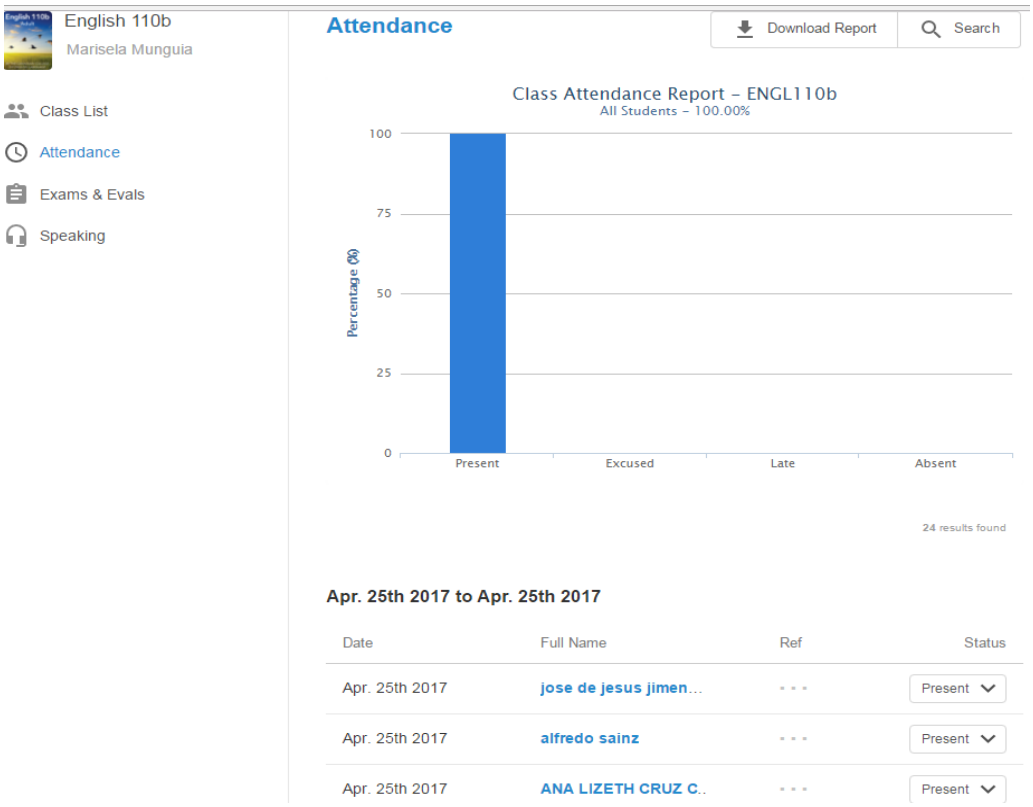


Figure 18: Class Attendance Report. An example provided by a second-level English teacher.

Smrt is based on proficiency levels according to the Common European Framework of Reference for Languages (CEFR). At the University of Pitic, students are expected to achieve the level B1 of the CEFR once they finish the five English courses included in the curriculum. Level B1 has two main characteristics: a) the ability to maintain interaction and express what the learner intends to communicate in a variety of contexts; for example, following the main points of an extended conversation around him or her and keep going comprehensibly, though at this level it is common to make pauses for grammatical and lexical planning and correction, and b) the ability to deal flexibly with everyday life situations; for example, holding unprepared conversations on familiar topics (North *et al.,* 2010).

3.5 Research methods

The quantitative and qualitative methods for data collection applied in this study were surveys, focus groups, and classroom observations. Table 1 presents the links between the research questions and the methods implemented. The researcher performed the triangulation strategy to compare and contrast the data and make an exhaustive analysis of the findings in the interpretation chapter.

Table 1: Links between research questions and data collection methods

Research questions	Methods
1. To what extents do the constructs included in the adapted version of the UTAUT model (performance expectancy, effort expectancy, social influence, ICT self-efficacy and facilitating conditions) contribute to the EFL teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL?	EFL teachers' Questionnaire –ETQ EFL students' Questionnaire –ESQ Focus group interviews (teachers) Focus group interviews (students) Classroom observations
2. What is the relationship between teachers and students' attitudes, actual use, and continuance intention to use ICTs in EFL teaching and learning?	EFL teachers' Questionnaire –ETQ EFL students' Questionnaire –ESQ
3. In what ways do the ICTs most frequently used within the blended learning modality impact the teaching and learning of EFL? a) To what degree are ICTs being used in both in-class and out-of-class activities?	EFL teachers' Questionnaire –ETQ Focus group interviews (teachers) Focus group interviews (students)
4. How do EFL teachers and students actually use ICTs within the blended learning modality?	EFL teachers' Questionnaire –ETQ Focus group interviews (teachers) Focus group interviews (students) Classroom observations
5. What barriers do EFL teachers and students encounter when using ICTs in the blended learning modality?	EFL teachers' Questionnaire –ETQ EFL students' Questionnaire –ESQ Focus group interviews (teachers) Focus group interviews (students) Classroom observations

As seen in Table 1, depending on the nature of the research question, this is addressed using one method or more. In the case of the English teachers, instruments for data collection were written in English. They responded to the ETQ questionnaire in English and participated in focus groups interviews conducted in English too. As for participant students, instruments for data collection were written in Spanish to collect accurate information. Hence, students responded to the ESQ questionnaire in Spanish and participated in focus groups interviews conducted in Spanish, and later translated into English.

Figure 19 shows the flow of research activities followed in this mixed-methods study. Due to the complexity of the design of multi-method research, detailed information on the procedures used in each method is presented separately in the following sections.

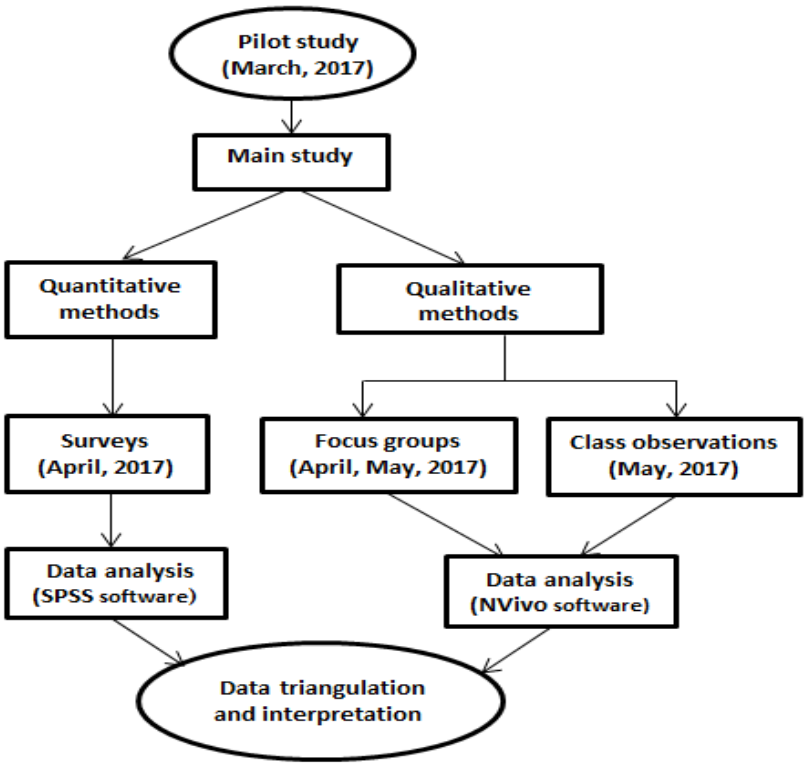


Figure 19: Research Design for the Study.

3.5.1 Quantitative methods: surveys

A survey instrument uses a written questionnaire or formal interview to collect different kinds of information such as demographic, behavioural, or attitudinal to a large number of participants (Neuman, 2014). Brown (2001) says that questionnaires are 'any written instruments that present respondents with a series of questions or statements to which they are to react either by writing out their answers or selecting from among existing answers' (as cited in Dörnyei, 2007). Dörnyei (2007, p. 102) asserts that questionnaires can measure the following three types of data from participants:

a) *Factual questions* which are used to find out certain facts about the respondents, such as demographic characteristics.

b) *Behavioural questions* which are used to find out what the respondents are doing or have done in the past, focusing on actions, life-styles, habits, and personal history.

c) Attitudinal questions which are used to find out what people think, covering attitudes, opinions, beliefs, interests, and values.

Regarding this study, the researcher was interested in collecting information about what participants do (ICT usage) and what they think. Hence, she decided to use surveys as part of the

methods for data collection; since face-to-face and online surveys would facilitate to contact potential respondents on-campus and outside it, ensuring the effectiveness of the data gathered. The researcher administered two questionnaires, one to participant EFL teachers and the other to participant EFL students. The purpose was to explore aspects related to the use of technology in language learning. As well as to examine to what extent factors included in the UTAUT model contributed to their attitudes towards the use of ICTs in the teaching and learning of EFL, and the possible relationship between their attitudes, actual usage, and continuance intention to use ICTs.

To design the questionnaires, the researcher examined existing surveys in the field of technology acceptance and use and attitudes towards the use of technology (see section 3.5.2). See the *EFL Teachers questionnaire* (ETQ) and the *EFL Students questionnaire* (ESQ) in appendices A and B. As well, the Consent Form and Information Sheet used for surveys responded on paper are in appendices D and E.

3.5.2 Design of survey instruments

The design of the ETQ and ESQ questionnaires was based on instruments for data collection previously used in investigations related to the acceptance and use of technology, attitudes towards ICTs, and barriers that hinder the uptake of technology (e.g., Isleem, 2003; Venkatesh *et al.*, 2003; Tri and Nguyen, 2014; Hughes and Tulimirovic, 2015). That is, existing items already validated in those studies were adapted to the context of this research to formulate the questionnaires.

The EFL Teachers Questionnaire (ETQ) has 4 sections and the EFL Students Questionnaire (ESQ) has 3. The first section in the ETQ includes six questions related to the use of information and communication technologies. This section was only included in the ETQ because in this study it was assumed that teachers are the leaders and facilitators of the learning process; therefore, they decide which technologies to use inside or outside the classroom, frequency of use, and time dedicated to using ICTs in the teaching and learning of EFL. The above because the Smrt English course consists of a form of blended learning in which the teacher delivers the class mostly in the classroom using technology (see section 3.4.3). Regarding this, Chapelle (2003) points out language teachers are responsible for selecting the software they consider most suitable to facilitate students' learning. Chapelle (2001) says that the selection and integration of adequate software into the learning tasks demands a careful design of the lesson activities on the teachers' part to provide additional benefits to the students. On the same subject, Hubbard (2006) says that language teachers are responsible for evaluating aspects related to the environment in which the

software will be used such as classroom settings, electronic devices, supplementary materials, students' characteristics, course structure, learning objectives, and their own beliefs about how language is learned.

In section I of the ETQ questionnaire, question 1 asks *How often do you use the following electronic devices and online resources in your teaching practice?* The *Technology Level of Use* questionnaire, developed by Isleem (2003) to determine teachers' level of use of new technologies for instructional purposes in Ohio public schools, served as a basis to elaborate the frequency scale and item statements of this question. Isleem's provides a five-point Likert scale ranging from *never* to *very often* to assess the level of use of a variety of online resources. Some items from the *Current Level of Use* section were adapted to the context of this study and included in the ETQ, as well as online resources and electronic devices that Smrt teacher trainers recommend using. This generated an inventory of electronic devices (desktop computer, laptop, smartphone, tablet computer, and cellular phone) and online resources (videos, e-mail, computer games, Google Docs, presentation software, online translators, online dictionaries, wikis, chats, social networks, blogs, the Smrt English website, e-portfolios, Internet to search for extra activities, and the teacher's own webpage). EFL teachers indicate how often they use those electronic devices and online resources in their teaching practice, by responding to a frequency scale (1=never, 2=rarely, 3=sometimes, 4=usually, and 5= always). For teachers to have the opportunity to enter any electronic device and/or online resource not listed in the inventory, questions 6 and 17 give an '*Other?*' option so that they have additional space in case they want to include another type of ICT.

Questions 2 through 6 provide information to understand in-depth to what degree ICTs are used in in-class and out-of-class activities. In this set, questions 2 through 4 were adapted from an instrument developed by Tri and Nguyen (2014) in a study on ICT use in English language learning among EFL university students in Vietnam. The section entitled *Weekly hours of ICT use for English language learning,* which measures the frequency of ICT use for English language learning purposes, served to develop the following questions for the ETQ: Question 2 *In a 60-minute class, how many minutes do you spend using ICTs?* Question 3 *How many hours per week do you expect students to use ICTs in out-of-class activities?* Lastly, question 4 *Overall, how many hours per week do you use ICTs in activities related to English teaching?*

Question number 5 is *What do you use ICTs primarily for?* It was adapted from a study conducted by Gilbert in 2015 in which she used the UTAUT model to explore teachers and students' use of and attitudes towards technology in the area of Music. The researcher of this study considered it important to include this question in the ETQ because it would allow understanding teachers'

main uses of ICTs to develop language skills and sub-skills. After that follows the question: *Other?* This question allows teachers to mention another use not included in the options.

Question 6 was adapted from a questionnaire developed by Hughes and Tulimirovic (2015), to examine EFL students' digital habits and their perceived usefulness of online computer-assisted language training in an official language school for adults in Spain. Their questionnaire was designed as a five-point Likert scale (1=never, 2=rarely, 3=sometimes, 4=usually, and 5= always) to assess the frequency of use of ICTs (inside and outside the classroom) to improve language skills and sub-skills. In the ETQ, question 6 asks EFL teachers *How often do you assign out-of-class activities (e.g., homework/projects) that imply the use of ICTs to develop the following language skills and sub-skills per week?* Teachers mark on a frequency scale how often they assign out-of-class activities to develop reading, listening, writing, speaking, grammar, vocabulary, and pronunciation that require students' use ICTs.

Section II in the ETQ questionnaire and section I in the ESQ include statements (items 1-12) related to the barriers that EFL teachers and students have encountered when using ICTs within the blended learning modality. The statements in both questionnaires are the same, but the wording varies slightly depending on the group of participants they refer to (teachers or students). Different investigations about the barriers individuals face when using technology in general and in the ESL/EFL field set the basis for the elaboration of these statements in the context to this study (see section 2.5). Participants classify these barriers as follows: 'Not a barrier', 'Important barrier', and 'Very important barrier' (Alshehri, 2012). Even though all barriers are important issues that the university administration or teachers should solve, the adverb 'very' was added to differentiate which barriers to remove first. Examples of these statements in the ETQ are *1) Lack of technological literacy, 2) Lack of knowledge of easy-to-use online resources, 3) Creating or searching for online materials is time-consuming,* and *4) Resistance to change. I feel comfortable without using ICTs to teach English.* The classification of the statements comprised in this section will allow the researcher to gain insights into the EFL teachers and students' interpretations of the barriers or obstacles that affect their use of ICTs. In addition, this section offers the respondents the opportunity to contribute with their own information in the '*Other?*' option.

Section III in the ETQ questionnaire and II in the ESQ include questions related to the UTAUT model proposed for this study. The statements were adapted from items used by Venkatesh *et al.* (2003) when they created the model. Only the statements relative to actual use were adapted from the questionnaire developed by Tri and Nguyen (2014) section *Learners' Perceptions of ICT*

Use in English Language Learning. This is because Venkatesh *et al.* (2003) measured actual use behaviour as the duration of use via system logs, and this study examines actual use through self-reported questionnaires and qualitative methods such as focus group interviews and classroom observations. Regarding the questionnaire format, Venkatesh *et al.* (2003) used a seven-point scale questionnaire, in which 1 is the negative end of the scale and 7 is the positive end. Tri and Nguyen used a five-point scale questionnaire to measure the actual use of ICTs. To make the item format consistent, the researcher decided to use a five-point Likert scale ranging from strongly disagree = 1 to strongly agree = 5.

As previously mentioned, the statements in the ETQ and ESQ questionnaires are the same. Only the wording varies slightly depending on the group of participants addressed (i.e., teachers or students). Therefore, to avoid repeating the statements of both questionnaires, this section only presents examples of items included in the ETQ questionnaire.

Constructs in this section of the ETQ and ESQ questionnaires are a) performance expectancy, b) effort expectancy, c) social influence, d) ICT self-efficacy, e) facilitating conditions, f) attitudes, g) actual use, and h) continuance intention to use. Each construct has five item statements, and most of them include one item worded negatively to enhance the reliability of the instrument.

The first construct is *performance expectancy*, defined by Venkatesh *et al.* (2003) 'as the degree to which an individual believes that using the system will help him or her attain gains in job performance' (p. 447). Examples of performance expectancy statements included in the ETQ are *1) Using ICTs helps me better teach the reading, writing, listening, and speaking skills, 2) Using ICTs enables me to accomplish teaching tasks more quickly.*

The second construct is *effort expectancy,* or 'the degree of ease associated with the use of the system' (Venkatesh *et al.*, 2003, p. 450), in this study is understood as the degree of ease that teachers and students associate with the use of ICTs. Examples of effort expectancy statements comprised in the ETQ are 6*) Using ICTs to teach English is easy for me; 7) It would be easy for me to become skilful in the use of all kinds of ICTs.*

The third construct is *social influence,* which means 'the degree to which an individual perceives that important others believe that he or she should use the new system' (Venkatesh *et al.*, 2003, p. 451). In this research, important others include people that could influence EFL teachers and students' attitudes towards the use of technology such as university administrators, teachers, students, family, and friends. Examples of social influence statements in the ETQ are 11*) The university administration considers that I should use ICTs to teach English; 12) Using ICTs to teach English makes me more valuable to my coordinator.*

The fourth construct is *ICT self-efficacy*. In terms of technology integration and use, self-efficacy is understood as 'the Judgment of one's ability to use a technology (e.g. computer) to accomplish a particular job or task' (Bandura, 1986, p. 391). In this study, ICT self-efficacy refers to the degree of awareness teachers and students have of their capability to use ICTs in the teaching and learning of EFL. Examples of ICT self-efficacy statements in the ETQ are *16) I can access the Smrt contents and online resources on the Internet without help; 17) I can use ICTs even if there is no one around to tell me what to do as I go.*

The fifth construct involves the *facilitating conditions*, or 'the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system' (Venkatesh *et al.*, 2003, p. 453). Even though facilitating conditions are considered as direct antecedents of usage (Venkatesh *et al.*, 2003), in this study, facilitating conditions are conceived as the teachers and students' perceptions of the support they received from the university to work with ICTs, which may contribute to their attitudes towards technology use. Examples of statements of this construct in the ETQ are 21*) Using ICTs to teach English suits me, 22) I have the resources necessary to teach English in the classroom.*

The sixth construct is *attitudes*. It refers to the EFL teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL. Attitude is defined as 'an individual's positive or negative feelings (evaluative affect) about performing the target behaviour' (Fishbein and Ajzen, 1975, p. 216). Examples of statements of this construct included in the ETQ are *26) I like the idea of using ICTs to teach English, 27) Using ICTs to teach English is enjoyable*.

The seventh construct is *actual use,* which refers to the actual use behaviour of a specific system. In this study, actual use is understood as individuals' use behaviour of ICTs. Examples of statements of this construct comprised in the ETQ are *31) In class, I use ICTs to help students develop their reading, writing, listening, and speaking skills; 32) I generally assign out-of-class activities (e.g., homework/projects) that involve the use of ICTs.*

The eighth and last construct of this section is called *continuance intention to use.* It explores the possible teachers and students' intentions to continue to use ICTs to teach or learn EFL in the future. Examples of statements of this construct included in the ETQ are *36) I predict I will continue using ICTs in the future to help my students develop their reading, writing, listening, and speaking skills, 37) I intend to continue using ICTs in the future to help students develop their grammar, pronunciation, and vocabulary.*

Section IV in the ETQ questionnaire and III in the ESQ have participants' personal information. Participants indicate their gender, age, and educational background. This section also includes questions related to teachers' ICTs experience such as a) *How long have you been teaching English as a foreign language? b) How long have you been using ICTs to teach English as a foreign language?* In the ESQ questionnaire, students indicate their gender, age, the English level they are studying this semester, and the name of the major in which they are enrolled. Questions related to students' ICTs experience include *a) How long have you been studying English as a foreign language? b) How long have you been using ICTs to learn English?*

3.5.3 Validity and reliability of the survey instruments

The last step in the elaboration of the instruments consisted of assessing their accuracy by testing the surveys' validity and reliability. To ensure the content validity of the questionnaires, once they were elaborated, they were given to a panel of experts in the field of technology and English language teaching for revision and feedback. Two professors from the University of Pitic, the first one with a PhD in Multimedia Technology and the second one with a BA in ELT and a PhD in Educational Innovation, were asked to revise and answer the instruments. In addition, two PhD students from the University of Southampton enrolled in the distance program of Modern Languages and two EFL teachers were also asked to respond to the questionnaires and provide suggestions for their refinement.

Suggestions for improvement included minor changes in the wording of items such as to change: *Other (please specify)* to *Other?* They also recommended to only use the word *barriers* instead of *barriers or obstacles* because students could find them confusing. Besides, they indicated that using the word *neutral* in the scales could be difficult to understand by respondents. So, it was changed to neither agree/nor disagree. Two members of the panel commented they had found it confusing some items worded negatively. Hence, they were reformulated. For example, the negative statement *'People who are valuable to me do not agree that I use ICTs to teach English'* was changed to '*People who are important to me disapprove of me using ICT to teach English'* (item 13). Similarly, the negative statement *'I think that using ICTs to help students develop the language abilities is too complicated*' was rephrased and reduced to *'I think that using ICTs to teach English is too difficult'* (item 8).

The members of the panel reported that answering the ETQ questionnaire took approximately 15 minutes and the ESQ 7 minutes. They agreed that the surveys were not too lengthy for a PhD study. Additionally, the validity of the EQT and ESQ questionnaires was ensured by comparing and

contrasting the data collected through these instruments and the ones obtained through focus groups and classroom observations.

3.5.4 Pilot study

In order to assess the reliability of the survey instruments, the piloting of the ETQ and ESQ questionnaires took place in March 2017 with a small group of 15 teachers and 46 students who accepted to participate in the initial phase of the study. The teachers answered the ETQ on paper, and the students responded to the ESQ online in their classrooms. Teachers read and signed a consent and information sheet form on paper, and students read the information of the study and gave their consent to participate online. Besides, the researcher explained the meaning of terminology that could be confusing for participants such as information and communication technologies and the word 'barriers' in the study. Furthermore, the researcher emphasised that their participation was voluntary and they were free to abandon the room in case they did not want to respond to the survey.

As part of the process of assessing the reliability of the instruments, Cronbach's coefficient alphas were calculated using SPSS to measure average inter-item correlations to assess internal consistency. According to (Hinton, 2004), the reliability of a scale is excellent from .90 and above; high from .70 to .90; high moderate from .50 to .70, and low from .50 and below. The Cronbach's coefficient alphas of the ETQ and ESQ were .90, indicating excellent reliability of the instruments.

3.5.5 Survey participants

The study took place at Seri campus of the University of Pitic, located in northern Mexico. After the piloting phase, a total of 93 EFL teachers were invited to participate in the main study. There are 47 EFL teachers in Seri campus. However, to obtain a more considerable amount of respondents, EFL teachers from Mayo campus (11), Papago campus (20), Kino campus (12), and Esperanza campus (3) were invited to respond to the survey. Regarding students, from a total population of 2,398 EFL students in Seri campus, a sample of 571 students enrolled in English level two and four were invited to participate in the study. The researcher selected the Seri campus to carry out the study since it is the largest of five campuses of the university. Therefore, the most representative number of potential participant teachers and students could be reached in this location.

3.5.6 Data collection procedures - surveys

The administration of two questionnaires, ETQ for teachers and ESQ for students, took place in mid-April 2017. The teachers from campuses Mayo, Papago, Kino, and Esperanza answered the survey online. In the case of Seri campus, three students from the major in English Language Teaching (ELT) assisted the researcher in applying the surveys in the classrooms. The researcher trained these students on how to proceed when inviting teachers and students to respond to the survey online. Besides, they took with them a checklist to make sure they explained all the details before the teachers and students answered the survey; for example, the purpose of the study, key terminology, voluntary participation, and so forth. In addition, the assistant students took with them sets of paper surveys, participant information sheets, and consent forms in case the teachers preferred to answer the survey on paper. Moreover, they gave the teachers a little present consisting of a cellophane bag nicely decorated with cookies to thank them for their time and participation. The researcher was responsible for coordinating the administration of the surveys and for applying them too.

3.5.7 Data analysis procedures - surveys

Raw data of the ETQ and ESQ questionnaires were screened before its analysis. Field (2009) says that data screening is an essential step in starting with the analysis to avoid incorrect results. This section includes the procedures followed to deal with missing values, univariate and multivariate outliers, and to test the normality of the data using the software SPSS version 23.

3.5.7.1 Missing values

In the present study, from the 93 EFL teachers that were invited to answer the ETQ questionnaire, 84 teachers responded to it; obtaining a response rate of 90%. As well, the ESQ questionnaire administered to 571 EFL students was answered by 519, reaching a response rate of 91%. Hair *et al.* (2014), say that missing data may occur for various reasons such as errors when collecting or capturing the data, or for responses unanswered by respondents. Therefore, all items of both questionnaires were revised to see if they had been completely answered. Missing values analysis was run using SPSS. It revealed that 4 teachers and 18 students omitted to answer one or several sections of the online questionnaires. Since this represented a significant loss of valuable information, these questionnaires were excluded from the study, reducing the sample size of EFL teachers to 80 and the sample size of students to 501.

In addition, as part of the data cleaning, those questionnaires with more than two questions relative to the UTAUT model unanswered were discarded. In the case of teachers, 10

questionnaires were eliminated, reducing the sample size to 70. As for students, the sample size decreased to 478; since 23 surveys were dropped from the study. On the other hand, when it was possible to associate a missing response to other responses either above or below the case, the questionnaire was considered valid for further analysis.

3.5.7.2 Outliers

Outliers are values that differ from the rest of the data. They can occur for many reasons such as a typo when entering the data, respondent's lack of care when answering the survey, the occurrence of an extraordinary event at the time data were collected, or silly responses on the part of participants (Dörnyei, 2007). Hair *et al.* (2014), say that an outlier is 'an observation that is substantially different from the other observations (i.e., has an extreme value) on one or more characteristics (variables)' (p. 34). They point out that outliers can be identified as univariate, bivariate, and multivariate.

Univariate outliers can be detected by examining the distribution of the observations for each variable, and those observations that lie beyond an established boundary are considered outliers (Hair *et al.*, 2014). Bivariate detection of outliers can be performed through a visual examination of the relationships between two variables in a graph (scatter plot). The case or cases that clearly differ from the general tendency of the data can be considered outliers (Field, 2009). Finally, multivariate outliers are observations with an uncommon combination of scores on two or more variables (Tabachnick and Fidell, 2013). To detect multivariate outliers, it is necessary to use a method such as the Mahalanobis Distance that measures the multidimensional distance of each case relative to some common point. The Mahalanobis Distance is a method in which each observation can be assessed using the X^2 distribution (Tabachnick and Fidell, 2013; Hair *et al.*, 2014).

In this study, all items from the ETQ and ESQ questionnaires related to the UTAUT were transformed into z-scores to search for univariate outliers using SPSS. The z-scores with a positive or negative value that fell within certain limits were considered outliers (Field, 2009). Hair *et al.* (2014) assert that for samples smaller than 80 cases, outliers are identified as observations with standard scores of 2.5 or greater. However, for samples larger than 80 cases, the threshold can be increased up to 4. In terms of the sample of 70 EFL teachers, responses with z-scores equal or larger than the absolute value of 2.5 were the following: the performance expectancy construct had 3 responses on item 1 (z = -2.6) and 3 responses on item 2 (z = -2.6), the social influence

construct had 5 responses on item 3 (z = -2.6), and the facilitating conditions construct had 4 responses on item 2 (z = -2.6) and 4 responses on item 5 (z = -2.7).

Concerning the students' data with a sample of 478 EFL students, the responses with z-scores equal to or larger than the absolute value of 3.29 were considered univariate outliers. The 9 outliers found in the students' data were: the performance expectancy construct had 2 responses on item 4 (z = -3.8), the ICT self-efficacy construct had 5 responses on item 1 (z = -3.3), and the actual use construct had 2 responses on item 5 (z = -3.5). With the univariate outliers identified it is time to decide whether to transform the data or not to pull atypical cases to the centre and improve normality (Tabachnick and Fidell, 2013). However, after revising both data sets several times, the researcher decided not to transform the data or delete the cases with outliers for three reasons. Firstly, all z-scores identified as outliers were slightly larger than |2.5| in the teachers' sample and somewhat superior to |3.29| in the students' sample. Therefore, their removal would reduce the sample size of teachers and students considerably. Secondly, Dörnyei (2007) says that although an outlier can be a different response, it is also a true one. Also, Tabachnick and Fidell (2013) state that some standardized scores greater than 3.29, in the case of large samples, are expected. Thirdly, data transformation makes it more difficult their interpretation since the original data are changed (Field, 2009). Thus, all responses were considered equally important.

Multivariate outliers were detected using the Mahalanobis distance following this route through the SPSS data editor: Analyze > Regression > Linear> Dependent variable > Independent variable > Save > Mahalanobis distance. Hair *et al.* (2014) say that threshold levels for D^2/df measure should be conservative, that is, a p-value < .005 (values of 2.5 for small samples) and a p-value < .001 (values of 3 or 4 for larger samples). Therefore, Mahalanobis distance was calculated with SPSS for a sample of 70 teachers, and the Mahalanobis value obtained was compared to the X^2 distribution table at p < .005 with 40 degrees of freedom corresponding to the number of variables examined, and no outliers were identified. That is, no value less than .005 was found.

As for the sample of 478 students, the Mahalanobis distance was calculated too. The Mahalanobis value obtained was compared to the X^2 distribution table at p < .001 with 40 degrees of freedom corresponding to the number of variables examined. From 478 cases 10 were greater than 73.402; therefore, those cases were considered multivariate outliers and deleted, reducing the students' sample to 468 cases for further analysis (see the complete syntax and multivariate outliers detected in Appendix J).

3.5.7.3 Test of normality

Data is normally distributed when the majority of the observations are spread near the central point, and few cases lie far away from that point (Canning, 2014). As part of the screening process, normality of the 40 items related to the UTAUT model in the ETQ and ESQ questionnaires was examined, by measuring the balance of the distribution (called skewness) and its pointiness compared with the normal distribution (called kurtosis) (Hair *et al.,* 2014). The table that contains the results of kurtosis and skewness statistics at item-level can be seen in appendix K. For practical purposes, only the skewness and kurtosis statistics results at construct-level of the UTAUT model variables in the ETQ and ESQ questionnaires are presented in table 2. This table shows that all the values were within the accepted range of skewness and kurtosis of ±1.96 for .05 error level (Hair *et al.,* 2014).

Table 2: Skewness and kurtosis statistics at construct-level

	Teachers (n=70)		**Students (n=468)**	
Constructs	**Skewness**	**Kurtosis**	**Skewness**	**Kurtosis**
Performance expectancy	.263	-1.071	-.200	-.152
Effort expectancy	-.236	-1.172	-.076	-.560
Social influence	-.220	-.679	.184	-.143
ICT Self-efficacy	-.556	-.233	-.345	-.328
Facilitating conditions	-.279	-.695	-.062	-.441
Attitudes	-.545	-.850	-.582	.358
Actual use	-.435	.005	-.150	-.258
Continuance intentions to use	-.743	-.671	-.140	-.510

Note: SE = standard error. The SE for skewness is .287 and for kurtosis .566 in teachers' data. The SE for skewness is .113 and for kurtosis .225 in students' data.

3.5.7.4 Descriptive statistics

The ETQ questionnaire (section III) and ESQ questionnaire (Section II) have 40 items designed to measure the factors contributing to EFL teachers and students' attitudes towards the use of ICTs

in the teaching and learning of EFL, and whether there is a relationship between attitudes, actual use and continuance intention to use ICTs. In this study, performance expectancy (items 1-5), effort expectancy (items 6-10), social influence (items 11-15), ICT self-efficacy (items 16-20), and facilitating conditions (items 21-25) were used as independent variables (predictors); while attitudes (items 26-30), actual use (items 31.35), and continuance intention to use (36-40) served as dependent variables. Descriptive statistics at the item-level was calculated in both questionnaires using SPSS. For a sample of 70 teachers and 468 students, aspects like clustering, dispersion, and frequency percentage of the responses were examined to describe the data and find the patterns followed by the answers.

3.5.7.5 Multiple linear regression

Multiple linear regression analysis was conducted with the items of predictors, namely *performance expectancy, effort expectancy, social influence, ICT self-efficacy, and facilitating conditions* as independent variables, to examine their contribution to *attitudes* as the dependent variable. Tabachnick and Fidell (2013) point out that multiple regression analysis allows assessing the relationship between a dependent variable and several independent variables. They say that, in multiple linear regression analysis, *B* values represent the change in the dependent variable associated with a one-unit change in an independent variable; all other independent variables remain constant. In this study, multiple regression was run using the enter method in teachers and students' data set. The items with no significant effects were removed from the main study.

3.5.7.6 Bivariate correlations

The terms regression and correlation are used more or less interchangeably. The concept of regression is often employed when the intent of the analysis is a prediction and the term correlation when the purpose is to assess the relationship between the dependent variable and independent variables (Tabachnick and Fidell, 2013). In the present study, the UTAUT model includes factors considered predictors of use behaviour (actual use). Nevertheless, as previously mentioned, it is unclear whether the teachers and students' attitudes towards the use of ICTs can predict or explain the actual use and continuance intention to use of those technologies. Therefore, the Pearson product-moment correlation coefficient was calculated in the ETQ and ESQ questionnaires to examine whether there is a relationship between the constructs; *attitudes, actual use, and continuance intention to use*.

3.5.7.7 Demographic information of the participants

Participant teachers

EFL teachers' demographic information includes the following aspects: gender, age, educational background, years of experience teaching EFL, and years of experience using ICTs to teach EFL (see Table 3).

Table 3: EFL teachers' demographic information

Gender	Male	Female			
Frequency/ (%)	23 (32.8)	47 (67.2)			
Age					
Years	24-35	36-45	46-55	More than 55	
Frequency/ (%)	31 (44.3)	21 (30.0)	8 (11.4)	10 (14.3)	
Educational background					
	Bachelor's degree	Master's Degree		PhD	
Frequency/ (%)	39 (55.7)	27 (38.6)		4 (5.7)	
Years of experience teaching EFL					
Years	1-5	6-10		11-15	More than 15
Frequency/ (%)	16 (22.9)	15 (21.4)		18 (25.7)	21 (30.0)
Years of experience using ICTs to teach EFL					
Years	Less than 1	1-2	3-5	6-10	More than 10
Frequency/ (%)	1 (1.4)	9 (12.9)	54 (77.1)	0 (0.0)	6 (8.6)

Note: n = 70.

Of a total of 70 teachers, the majority were female 47 (67.2%) and 23 (32.8%) male teachers. Their ages ranged as follows: 31 (44.3%) were between 24 and 35 years old; 21 (30%) were between 36 and 45 years old; 8(11.4%) were between 46 and 55 years old, and 10 (14.3%) were more than 55 years old. In terms of their educational level, 39 (55.7%) teachers reported having a Bachelor's degree; 27 (38.6%) a Master's degree, and 4 (5.7%) a PhD, which demonstrates that all the teachers have university studies.

Most of the teachers (77%) declared having more than 5 years of experience in teaching English as a foreign language. Of those, 15 (21.4%) reported having between 6 and 10 years teaching EFL, 18 (25.7%) between 11 and 15 years, and 21 (30%) more than 15 years. These results suggest that the majority of teachers have experience teaching EFL. Concerning the years of experience in the

use of ICTs to teach English as a foreign language, the majority of teachers 54 (77.1%) informed having between 3 and 5 years, and 8 (14.3%) teachers, more than 10 years. The time of experience in the use of ICTs reported by the majority of teachers corresponds to the time (five years) the University of Pitic has been working with technology in language learning, showing that the EFL teachers are not novices in the use of ICTs.

Participant students

EFL students' demographic information includes the following aspects: gender, age, English level, years of studying English as a foreign language, and years of experience using ICTs to learn English (see Table 4). Of a total of 468 students, 223 (47.6%) were male and 245 (54.2%) female. The students reported being between 18 and 23 years old 439 (93.8%), against 22 (4.7%) who said to be between 24 and 28 years old, which indicates that the sample was very homogeneous in terms of age.

Table 4: EFL students' demographic information

Gender	**Male**		**Female**		
Frequency/ (%)	223 (47.6)		245 (52.4)		
Age					
Years	18-23	24-28	29-33	34-40	41 or more
Frequency/ (%)	439 (93.8)	22 (4.7)	5 (1.1)	1 (.2)	1 (.2)
English level					
Level	Second level		Fourth level		
Frequency/ (%)	257 (54.9)		211 (45.1)		
Years of studying English as a foreign language					
Years	Less than 1	1-3	4-6	7-10	More than 10
Frequency/ (%)	50 (10.7)	162 (34.6)	145 (31.0)	54 (11.5)	57 (12.2)
Years of experience using ICTs to learn English					
Years	Less than 1	1-2	3-5	6-10	More than 10
Frequency/ (%)	114 (24.4)	226 (48.3)	93 (19.9)	21 (4.5)	14 (3.0)

Note: n = 468.

Students invited to participate in the study were from the English courses offered by the university in the semester that the data were collected. Participants were 257 (54.9%) second-level students and 211 (45%) from the fourth level. Most students responded to have been learning EFL for a period of 1 to 3 years (36%), followed by those who reported having been

learning English from 4 to 6 years (31%). Moreover, in table 2 it can be observed that 114 students have less than 1 year using ICTs to learn English, and 226 students reported having from 1 to 2 years. These students represented 72.7% of the total sample of participant students, which indicated that the majority of the students had not used ICTs to learn EFL before entering the university.

3.5.8 Qualitative methods: focus groups and classroom observations

Focus groups and classroom observations were carried out with the purpose of understanding in-depth the EFL teachers and students' use of ICTs within the blended learning modality at a tertiary level. These methods also allowed having a deeper comprehension of the different ways in which ICTs impact the teaching and learning of EFL, the factors that may contribute to the EFL teachers and students' attitudes towards the use and future use of ICTs, and the barriers they encounter when using new technologies.

3.5.8.1 Focus groups

Focus groups have been used more frequently over the past two decades in different areas of knowledge (Fischer, 2005). It consists of a group discussion organised in advance by the researcher who acts as a moderator, to obtain an in-depth understanding of the perceptions, attitudes, and opinions of people that share similar experiences related to a specific topic (Krueger, 1994; Fischer, 2005). Dörnyei (2007) says that discussions are expected to emerge during focus group sessions because they are 'based on the collective experience of … participants thinking together, inspiring and challenging each other, and reacting to the emerging issues and points' (p. 144). Thus, focus groups offer a space where the participants are encouraged to express their opinions and listen to different points of view, and they are considered successful when all its members actively participate in the discussion by contributing with ideas or saying if they agree or disagree with someone else's comments (Dawson *et al.,* 1993; Bell, 2010).

3.5.8.2 Strengths and weaknesses of focus group interviews

Fischer (2005) suggests that the researchers who have chosen the focus group method, need to be sure whether this method suits their research's needs, and be informed about its strengths and weaknesses. One of the strengths of focus groups is the useful information that multiple participants may provide the researcher with regarding the phenomenon under study (Hesse-Biber and Leavy, 2006). It is their versatility that allows group interviews to be used in educational contexts as well as in a great variety of areas, producing a lot of verbally expressed information

such as opinions, experiences, feelings, attitudes so forth at lower costs (Berg, 2001; Dörnyei, 2007). People usually do not reject participating in group interviews; on the contrary, they find it a fun and motivating experience through which rich information is gathered (Dörnyei, 2007). Furthermore, focus groups allow the researcher to observe the level of engagement of participants during the discussion (Berg, 2001).

On the other hand, some of the weaknesses or limitations of the focus groups interviews need to be considered by the researcher before and during the group discussion. For example, some arrangements need to be carried out before the interview such as reserving an appropriate venue to conduct the activity (Dörnyei, 2007), and remind participants of the date and time of the meeting (Bell, 2010). During the focus group interview, the moderator has to be ready to improvise, encourage quiet members to talk (Dörnyei, 2007), and deal with participants with strong personalities that dominate the conversation (Dörnyei, 2007; Bell, 2010). Another weakness of focus groups is that participants are induced to respond in a certain way by the moderator resulting in bias (Dawson *et al.,* 1993). Moreover, there may be difficulties in transcribing the whole discussion because of overlapping voices making it very difficult to understand what they say (Dörnyei, 2007).

In the present study, the researcher chose the focus group method since it enables the emergence of valuable information when participants disagree, explain themselves, and query each other. Additionally, in this type of activity, participants often negotiate their original ideas with new thoughts arising from their conversation, providing relevant data (Hesse-Biber and Leavy, 2006). The richness of the teachers and students' contributions produces a lot of verbally expressed information that allows having a better understanding on how technology is being used, and their perceptions of key issues related to language learning through ICTs within the blended learning modality.

3.5.8.3 Focus group guide

A focus group guide developed from the constructs of the UTAUT model was used to achieve the purposes of the study. It consists of three sections. Section I includes participants' personal information such as teacher/student name, gender, educational/English level, ICT experience in EFL, and date and duration of the group interviews. Section II has open-ended questions of the UTAUT model organised according to the position of the constructs in the model. That is, the questions related to the independent variables first, and then, the questions related to dependent variables (see section 3.3). The questions of the focus group guide are:

Performance expectancy, question 1: In your opinion, what aspects of ICTs help you improve your teaching/learning practices? *Effort expectancy*, question 2: Do you find ICTs easy to use to teach/learn English? Please explain. *Social influence*, question 3: To what degree do you care what people who are important for you think about whether or not you should use ICTs to teach/learn English? *ICT self-efficacy*, question 4: To what extent do you think you have the ability needed to use ICTs to teach/learn English? Please explain. *Facilitating conditions,* question 5: In your opinion, to what degree the university facilitates your teaching/learning practice by providing well-equipped classrooms, internet connectivity, and a technical support department? *Attitudes,* question 6: How do you feel about using ICTs as a medium to teach/learn English? *Actual use,* question 7: What do you use ICTs primarily for in activities related to English teaching/learning, and how do you use them inside and outside the classroom? *Continuance intention to use,* question 8: Do you consider that you will continue to use ICTs to teach/learn English in the future? Why?

At the end of the guide, participants are asked to add other factors related to the use of ICTs not included in the interview, and the barriers they consider hinder their use of ICTs to teach/learn English (see the Focus group guide in appendix E, the Consent form in appendix F and the Information sheet in appendix G).

3.5.8.4 Classroom observations

Qualitative observations consist of taking field notes of the behaviour and activities performed by participants at the research site (Creswell, 2014). Hence, the researcher selected this method to collect reliable and detailed information about how ICTs are being used by teachers and students in the face-to-face mode to ensure the effectiveness of the data at the moment to cross it with the ones obtained through focus groups and surveys for interpretation.

A total of eight classroom observations took place during the middle of May 2017, consisting of four second-level classes and four fourth-level classes with different teachers. The observation form used was *English Teaching and Learning through ICTs,* designed by the researcher based on other observation forms related to the use of technology and English language teaching taken from the Internet, namely *Observation Form for Classroom Instruction with the Use of Technology* (Darnell, 2014) and *Language Classroom Observation Form (www.sas.upenn.edu/~haroldfs/pedagog/evaluation/evaluate.html)*. The observation form has some space at the beginning to write general information about the class like English level, observation number, teacher number, and the lesson topic. The researcher marks ✓ aspects

related to the use of technology and language learning, and write commentaries in the following sections: a) classroom facilities, b) electronic devices used during class, c) online resources used in class, d) the skills or sub-skills that online resources were focused on, e) describe how online resources were used by the teachers and students, f) barriers or obstacles observed while teachers and students used ICTs during class, g) the primary use of ICTs during class, h) grouping arrangements and ICTs usage, and i) how does the teacher respond to the students learning needs related to the use of ICTs in EFL? (see the Observation Form in Appendix H and Observation Consent Form in Appendix I).

3.5.8.5 Data collection procedures - focus groups and class observations

Six focus group interviews were carried out by the end of April to the middle of May 2017. These were executed with two with EFL teachers, two with second-level students, and two with fourth-level students inviting different participants to each session. All focus groups were recorded on video with the prior consent of participants, obtaining a total of eight hours and twenty minutes of recorded material. The process followed in conducting focus groups consisted of inviting EFL teachers and students to participate voluntarily in a group interview. EFL teachers were invited via e-mail to take part in one of two focus group sessions scheduled at 10:00 a. m. for the morning shift, and at 4:00 p. m. for the afternoon shift. In the case of EFL students, focus group interviews were scheduled in the morning and the afternoon but at a different time and date. The researcher visited several classrooms inviting students to participate in group interviews of six students with one or two-day notice. Students' group interviews were conducted in Spanish to allow participants to fully express their ideas and ensure the quality of the data collected.

All focus groups took place in the meeting room of the School of English because it is a quiet and private place. At the beginning of each session, the researcher gave participants the information sheet and the consent form face-to-face. Then, she read and explained the purpose of the study and key terminology, making it clear that participation was voluntary and that there were no correct or incorrect responses.

As for classroom observations, the researcher asked for teachers and students' permission to observe the class. She let them know that participation was voluntary and, if some students did not want to be in class during the observation, they could leave the classroom without their legal rights being affected. Participants received the consent form and the information sheet, and the researcher explained the aims of the study and terminology. All classroom observations were video recorded, obtaining a total of eight hours of recorded material. The researcher did not alter the teacher and students' work in any manner. She took the role of a non-participant observer and took notes.

3.5.8.6 Data analysis procedures - focus groups and classroom observations

The NVivo 11 software was used for coding and analysing the data of focus groups and classroom observations. Although the researcher was the one who did the analysis, NVivo was of great help to organize, sort, search for, and reduce information. The procedures for qualitative data analysis were adapted from the steps recommended by Creswell (2014) as follows: a) preparing the data for analysis, b) reading all the data sources, c) coding all the data systematically, d) clustering together the nodes that relate to each other, and e) reducing the nodes into key themes.

In order to prepare and organise the data for analysis, the researcher transcribed and imported to NVivo 11, the material obtained from group interviews and classroom observations. Regarding the students' group interviews, the researcher first translated them from Spanish into English. Then, to ensure the quality of the English version, she used the 'blind back-translation' technique (Brislin, 1986). That is, a certified English translator translated the English version back into Spanish without having access to the original text. Afterwards, the new version in Spanish of the interviews and the original ones were compared, without finding significant differences between them. The researcher had the opportunity to become thoroughly familiar with the data; since she was the interviewer during all focus groups, took notes during observations, and transcribed all the video recorded material. Furthermore, she carefully read the transcriptions several times to get a sense of the whole information and took notes of ideas related to the data through annotations and memos included in the software.

In the next Sept, the researcher started to code the data systematically with the assistance of NVivo software. Codes are labels used to assign units of meaning to the data collected during a study (Miles and Huberman, 1994). The inductive analysis was used to identify themes and patterns in the EFL teachers and students' perceptions of the benefits of using ICTs, organise information according to the UTAUT model dimensions, and to recognise the barriers that may hinder the use of ICTs to teach and learn EFL. The researcher started with open coding using the software NVivo. Open coding is the first examination of the information to condense the mass of data into preliminary analytic categories or codes (Neuman, 2014). According to the terminology of the software, a 'node' is the name given to a basic code. Parent nodes, or general categories, were formulated from the initial revision of the data and were modified when relevant segments (meaning units) emerged during the analysis.

The next stage in the analysis of qualitative data consisted of clustering together the nodes that relate to each other by using axial coding. Within this process, 'the researcher organizes the

[nodes], links them, and discovers key analytic categories' (Neuman, 2014, p. 482). Child nodes, or subcategories, were developed from the interpretation of text segments. The researcher re-examined the data looking for new categories and themes by selecting and synthesizing initial nodes. That is, nodes with similar meaning were merged, and the ones with related meaning were clustered together and coded into more general nodes. For example, the researcher noticed that the information coded with the node '*Usefulness of ICTs'* could be merged with the node '*Ease of use ICTs'* forming a parent node called '*Benefits of using ICTs'.* Nodes with closely related meaning were grouped together and coded into more general nodes. For example, the node '*My colleagues' opinions'* and the *node 'My students' opinions'* were coded under the parent node '*People's opinions that influence the use of ICTs in the area of EFL'*.

A total of 77 child nodes were reduced to 42, which were organised under 28 parent nodes. Figure 20 below illustrates the hierarchy of tree nodes.

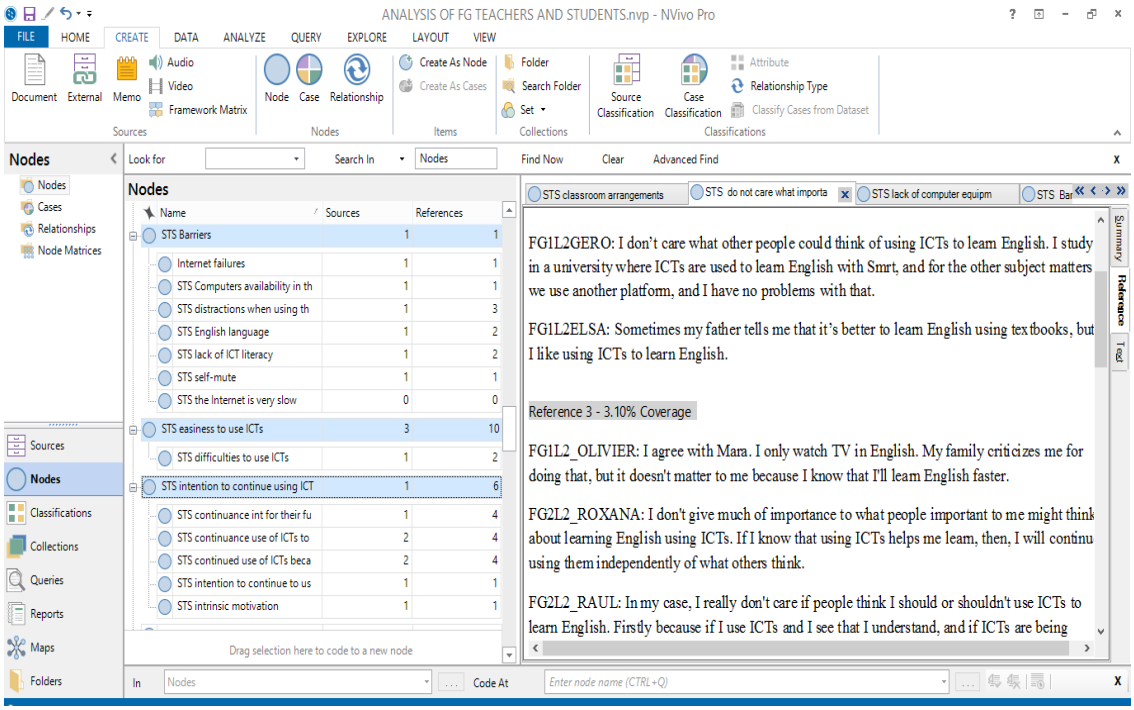


Figure 20: NVivo11 screenshot: The hierarchy of tree nodes.

The 28 parent nodes were then clustered and categorised again into 8 general themes. These themes served as a preliminary organising scheme, including:

1) Benefits of using ICTs in the teaching and learning of EFL.

2) People's opinions that influence the use of ICTs in the area of EFL.

3) The ability to use ICTs in the teaching and learning of EFL.

4) Organizational and technical infrastructure.

5) Attitudes towards the use of ICTs in EFL.

6) Actual use of ICTs.

7) Intention to continue to use ICTs in the teaching and learning of EFL.

8) Barriers encountered by EFL teachers and students when using ICTs.

Concerning the EFL teachers and students' actual use of ICTs, results obtained from focus groups and classroom observations were combined to provide solid evidence of how technology is being used and which factors affect its usage. Teachers' opinions vs students and second-level students' points of view vs fourth-level students were compared and contrasted in aspects such as benefits of using ICTs in the teaching and learning of EFL, the dimensions of the UTAUT model, and the barriers that may hinder the use of technology in language learning.

3.5.8.7 Ensuring the authenticity of qualitative findings

Creswell (2014) recommends the use of multiple approaches to assess the accuracy of the findings. In the present study, the researcher employed three strategies to ensure the authenticity of the information gathered, namely multiple data sources of information, member checking, and peer debriefing. First, focus groups and classroom observations were administered to collect qualitative data. The use of multiple sources allowed the researcher to have an in-depth understanding of the data and to build themes that addressed the research problem. Moreover, since the researcher adopted a mixed-methods approach, she could triangulate the quantitative and qualitative data sources to ensure the accuracy of the findings. At the interpretation stage, the results derived from the analysis of surveys, focus groups, and classroom observations were put together to examine whether or not they supported each other.

Second, member checking was used to validate the accuracy of the findings (Merriam, 1998). The researcher took back to participants some of the major themes she identified during the analysis of the group interviews and observations. A participant teacher and a participant student agreed that the researcher's interpretations reflected their opinions.

Finally, peer debriefing was employed to enhance the accuracy of the findings. The peer debriefer was a professor with a PhD in Educational Innovation who worked for another university in Mexico. She was invited to participate in the study because she has experience in mix-methods research. Hence, the professor reviewed the findings and asked questions on the

topic. The application of this strategy helped the researcher reflect on her interpretation of the data and verify whether her interpretation resonated with other people (Creswell, 2014).

3.5.8.8 Demographic information of participants - focus groups

In this section, demographic information of the EFL teachers and students who participated in the six focus groups is summarised in three big groups a) teachers, b) second-level students, and c) fourth-level students (see tables 5, 6, and 7 below). During the analysis, participants were identified with a label formed by the initials *FG1* or *FG2* indicating focus group number 1 or 2; the letters *TS* or *ST* mean teachers or students, and the participant's fictitious name separated by an underscore.

Regarding the teachers who participated in the group interviews, 5 of them were men and 10 women. From a total of 15 teachers, 6 had a Master's degree and 9 a Bachelor degree. Furthermore, all participants reported having more than 3 years of experience using ICTs to teach EFL (see Table 5).

Table 5: Focus group: Teachers' demographic information

Participants	Gender	Educational level	ICT experience in EFL
1. Jose	Male	Master's degree	3-5 years
2. Sara	Female	Bachelor's degree	3-5 years
3. Lisa	Female	Bachelor's degree	+ 10 years
4. Linda	Female	Bachelor's degree	3-5 years
5. Daniel	Male	Master's degree	3-5 years
6. Manuel	Male	Master's degree	6-10 years
7. Mariela	Female	Master's degree	3-5 years
8. Alberto	Male	Bachelor's degree	3-5 years
9. Mela	Female	Bachelor's degree	3-5 years
10. Nora	Female	Bachelor's degree	3-5 years
11. Amalia	Female	Bachelor's degree	3-5 years
12. Rina	Female	Bachelor's degree	6-10 years
13. Alicia	Female	Bachelor's degree	6-10 years
14. Ildefonso	Male	Master's degree	3-5 years
15. Graciela	Female	Master's degree	3-5 years
Dates: May 9th, 2017 (teachers 1-7) and May 11th, 2017 (teachers 8-15).			
Duration: 1:50 minutes			

About the second-level student group, 6 of them were men and 6 women. All of them said to have less than 1 year of experience using ICTs to learn EFL (see table 6). Finally, in the fourth-level student group, there were 6 men and 6 women. Regarding their experience in using ICTs to learn

English, 5 of them said they had from 1 to 2 years of experience, and a female student, more than 3 years (see table 7).

Table 6: Focus groups: 2nd level students' demographic information

Focus group 1: Second level April 27th, 2017. Duration: 1 hour 20 min.	
Male	Alex, Gero, Tino, Olivier
Female	Vania, Elsa
ICTs experience in EFL	Less than 1 year
Focus group 2: Second level May 4th, 2017. Duration: 1 hour 20 min.	
Male	Raul, Heriberto
Female	Mara, Roxana, Camila, Jessica
ICTs experience in EFL	Less than 1 year

Table 7: Focus groups: 4th level students' demographic information

Focus group 1: Fourth Level May 9th, 2017. Duration: 1 hour 20 min.	
Male	Eduardo
Female	Sonia, Rosa, Diana, Anette, Maria
ICTs experience in EFL	1-2 years
Focus group 2: Fourth level May 11th, 2017. Duration: 1 hour 20 min.	
Male	Servando, Arturo, Juan
Female	Nancy, Rocio, Iris
ICTs experience in EFL	All 1-2 years and Rocio 3-5 years.

3.6 The role of the researcher

As mentioned in section 1.6, the researcher of this study is an EFL teacher in the School of English at the University of Pitic in Northern Mexico. The literature says that the dual role of teacher and researcher has been a dilemma due to the ethical issues it may generate (Nolen and Putten, 2007). Critics of this type of educational research, contend that the asymmetrical power

relationship between teachers and students may influence students' willingness to participate in an investigation that is conducted by their teacher (Borg, 2010). About this, Stocker (2012) says that teachers have authority over students. Hence, students cannot freely express whether or not they want to be participants because of the possible consequences this could have on their grades. Researchers offer different solutions to overcome these issues. For example, Tabach (2006) suggests that to deal with being a researcher and teacher simultaneously, teachers should keep in mind that their first commitment is to the students' needs. Therefore, she says, '… in the classroom, the teacher must act like a teacher, keeping the researcher's voice silent. In analysis, the main perspective should belong to the researcher' (p. 239). Taber (2007) goes further and claims that an external researcher could conduct the investigation more ethically.

In the present study, the researcher was not the teacher of the participant students, which was beneficial for the investigation in different ways. For example, students knew that the researcher was familiar with language learning with technology, and therefore, she could understand their opinions on the topic. Moreover, students could freely express their willingness or reluctance to participating in the study, for they knew that there were no consequences on their grades (see section 3.7).

The researcher of the study agrees with al hinai (2015) that teachers are the most appropriate people to investigate a learning situation with which they are familiar; since this facilitates the research access and communication. Besides, she feels that her experience as an EFL teacher who works with technology will enable her to understand in-depth the teachers and students' points of view. Furthermore, since participant teachers were from different campuses of the university and participant students were not the researcher's current students, the data collection was not influenced by these two aspects, which allows obtaining more reliable and pertinent results.

3.7 Ethical considerations

Participants were informed about the research purposes and key terminology on paper and electronic format. The teachers who preferred to respond to the survey on paper received a Consent Form and Participant Information Sheet for them to read and sign these documents. Likewise, the teachers and students who participated in focus groups and classroom observations read and signed these forms too. The instruments for data collection included information about the study and their participation. In addition, to be allowed to answer those instruments, they were asked to declare that they were older than 16 years old and give their consent to take part in the study. The participants did not experience discomfort, inconvenience, or other adverse effects since the topic was not sensitive. Furthermore, they were informed in advance that the

data they provided was going to be strictly confidential and managed exclusively by the researcher only for the purposes of the study, complying with the Data Protection Act.

Chapter 4 Evidence of uses and attitudes towards ICTs obtained through statistical methods

4.1 Introduction

This chapter presents the findings of the quantitative data gathered from the ETQ and ESQ questionnaires. Section 4.2 shows the results of EFL teachers' use of ICTs in blended learning in aspects relative to a) frequency of use, b) time dedicated to using ICTs for teaching EFL and time expected for students to use them in language learning, and c) the frequency with which teachers assign out-of-class activities that involve the use of ICTs to develop the four language skills and sub-skills. Subsequently, section 4.3 presents the findings regarding the barriers that EFL teachers and students encounter when using ICTs. Section 4.4 reports on EFL teachers and students' perceptions of the UTAUT model's factors that contribute to their attitudes towards the use of ICTs in the teaching and learning of EFL. It starts presenting the descriptive statistical analysis of the variables involved at item-level and construct-level (4.4.1.1 to 4.4.1.9), followed by multiple linear regression analysis (4.4.2), and bivariate correlation analysis (Pearson product-moment) (4.4.3). Finally, the chapter ends with an overall summary in section 4.5.

4.2 The use of ICTs within the blended learning modality

In section I of the ETQ questionnaire, EFL teachers were asked to indicate the frequency of use of ICTs (never, rarely, sometimes, very often, and always) from a list that divided technologies into two categories: electronic devices (items 1-5) and online resources (items 1-16). Information relative to the percentage distribution of different kinds of ICTs used within the blended learning modality is presented in tables 8 and 9.

Table 8: Electronic devices

Electronic devices	Never (%)	Rarely (%)	Sometimes (%)	Very often (%)	Always (%)
Desktop computer	18.6	11.4	17.1	31.4	21.4
Laptop	22.9	24.3	20.0	14.3	18.6
Smartphones	62.9	8.6	12.9	7.1	8.6
Tablet computer	48.6	18.6	12.9	8.6	11.4
Cellular phone	48.6	18.6	12.9	8.6	11.4
Other	0.0	0.0	0.0	0.0	0.0

As seen in Table 8, the electronic devices the EFL teachers responded to use 'Very often' and 'Always' (52.8%) is the computer, indicating that this is the electronic device most widely used in the classroom. However, both teachers and students are allowed to use the device of their preference. The second device teachers responded to use 'Very often' and 'Always' was the

Laptop (32.9%). This information contrasts with the electronic devices that teachers reported using 'Never' and 'Rarely' such as smartphones (71.5%), tablet computers (67.2%), and cellular phones (67.2%).

As for the frequency of use of several online resources, Table 9 presents how often the EFL teachers use these resources.

Table 9: Online resources

Online resources	Never (%)	Rarely (%)	Sometimes (%)	Very often (%)	Always (%)
I use videos for educational purposes.	1.4	7.1	27.1	41.4	22.9
I use e-mail to communicate with my students.	7.1	0.0	18.6	27.1	47.1
I use computer games (e.g., Kahoot) to enhance students' learning.	7.1	15.7	34.3	30.0	12.9
I use peer correction (e.g., using Google docs).	5.7	17.1	30.0	32.9	14.3
I use presentation software (e.g., PowerPoint, Prezi)	5.7	11.4	24.3	35.7	22.9
I use online translators.	30.0	40.0	18.6	8.6	2.9
I use online dictionaries.	4.3	15.7	31.4	34.3	14.3
I use wikis.	32.9	32.9	25.7	7.1	1.4
I use chats.	24.3	28.6	21.4	18.6	7.1
I use social networks (e.g., Facebook, Twitter) for educational purposes.	34.3	22.9	12.9	15.7	14.3
I use blogs.	50.0	25.7	18.6	4.3	1.4
I use voice over internet protocol (e.g., Skype).	61.4	22.9	12.9	1.4	1.4
I use the Smrt English course to teach English.	2.9	0.0	2.9	20.0	74.3
I use e-Portfolios.	4.3	5.7	15.7	17.1	57.1
I search for extra activities on the Internet to teach English.	0.0	1.4	8.6	28.6	61.4
I use my own webpage (s) to work with my students.	71.4	15.7	5.7	5.7	1.4
Other	0.0	0.0	4.3	1.4	0.0

Note: n = 70.

As can be observed in table 9, the online resources that the EFL teachers reported using 'Always' and 'Very often' are: a) the Smrt English course (94.3%), b) teachers search for extra activities on the Internet to help students develop the four language skills and sub-skills (90%), c) online portfolios (74.2%), d) email (74.2%), e) presentation software (58.6%), f) online dictionaries (48.6%), g) peer correction (47.2%), and h) computer games (42.9%). Taking the first two online resources as an example, Smrt was found to be the resource most widely used by the teachers since it is the course that was selected by the University of Pitic for the teaching of English.

Surprisingly, some teachers reported that they never use it (2.9%), and others sometimes use it (2.9%) (see figure 21).

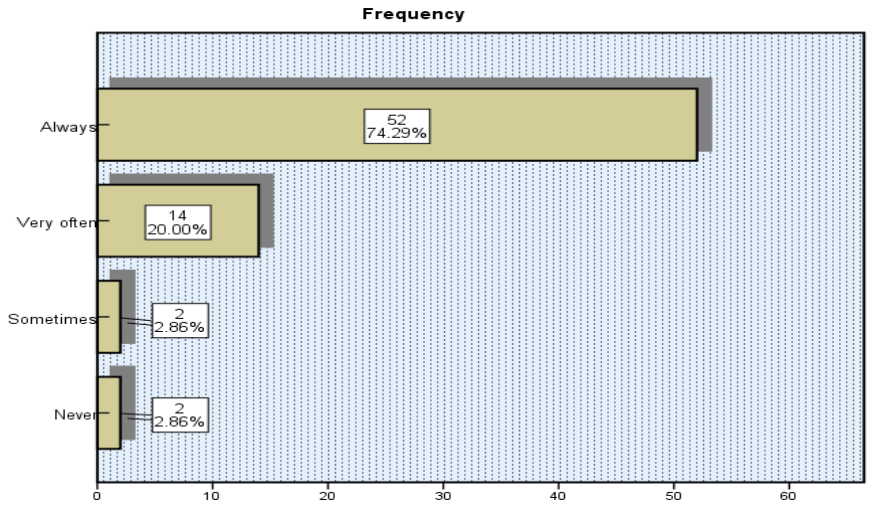


Figure 21: I use the Smrt English course to teach English.

The search for extra activities on the Internet to facilitate students' development of the four language skills and sub-skills resulted in one of the most frequent activities teachers perform. This finding suggests that the majority of teachers have positive attitudes towards the use of ICTs in the teaching of EFL, since they not only use the resources offered by Smrt but search for online materials to enrich the class (see figure 22).

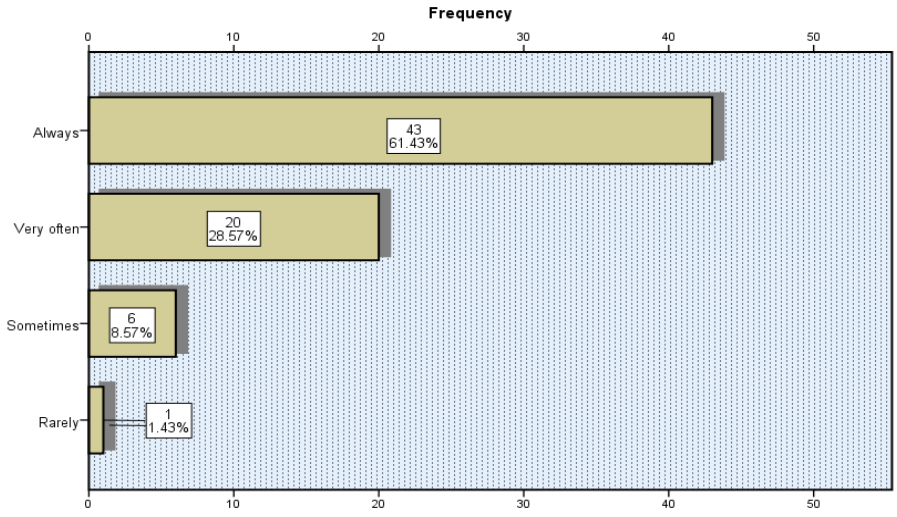


Figure 22: I search for extra activities on the Internet to teach English.

On the other hand, the online resources that teachers reported using 'Rarely' or 'Never' are: a) the teacher's own webpage (87.1%), b) voice over Internet protocol (e.g., Skype) (84.3%), c) blogs (75.7%), d) online translators (70%), and e) wikis (65.8%). These results suggest that teachers are not using online resources that could be considered more complex (e.g., webpages or wikis). In

the case of webpages, the reason might be that the teachers do not know how to create a webpage (see figure 23).

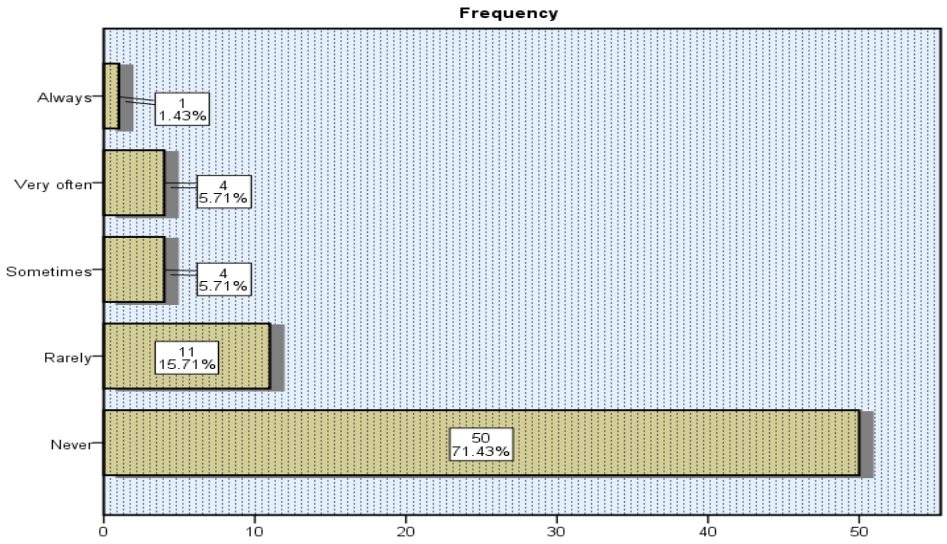


Figure 23: I use my own webpage to work with my students.

As for the case of the minimum use of voice over Internet protocol (e.g., Skype), the results indicate that perhaps the teachers do not have the adequate equipment to use this tool (See figure 24).

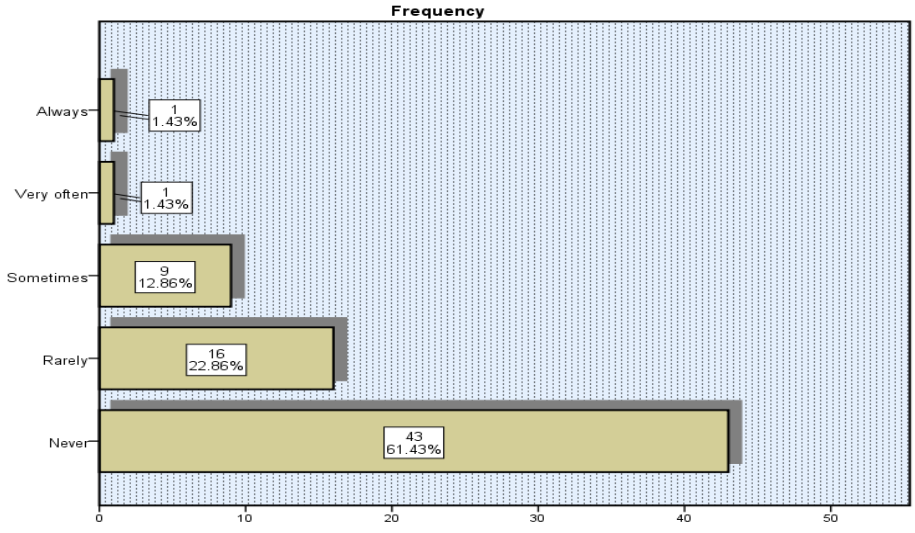


Figure 24: I use voice over internet protocol (e.g., Skype).

About the responses to the option 'other?' only four teachers provided additional information. For instance, a male teacher reported to use the educational platform Schoology very often, a female teacher said that sometimes she uses online magazines in class, a male teacher responded

that sometimes he uses the Duolingo software with his students, and a female teacher answered that sometimes she plays Bingo online for her students to practice irregular verbs or vocabulary words.

As part of gathering information related to technology usage, the teachers responded to questions that asked for specific information concerning the use of technology in their teaching practice. These questions had to do with the time they spent using ICTs during class and in activities related to English teaching, the main uses they gave to ICTs, and the number of hours they expected the students dedicate to learning English using ICTs on a weekly basis (see Table 10).

Table 10: Time spent using ICTs and their main use

Time spent using ICTs	**(F)**	**(%)**
Time in minutes spent using ICTs in a 60-minute class		
0-15 min	2	2.9
16-25 min	8	11.4
26-35 min	23	32.9
36-45 min	24	34.3
46-60 min	13	18.6
Hours per week expected that students use ICTs in out-of-class activities		
1-2 hours	13	18.6
3-4 hours	26	37.1
5-6 hours	22	31.4
More than 6 hours	9	12.9
Hours per week teachers use ICTs in activities related to English teaching		
5-7 hours	24	34.3
8-10 hours	15	21.4
11-15 hours	14	20.0
16-20 hours	4	5.7
More than 20 hours	13	18.6
Teachers' primary use of ICTs		
Class delivery	4	5.7
Students interaction	3	4.3
Both, class delivery and students interaction	50	71.4
Homework assignments or projects	13	18.6

Note: n = 70. F = Frequency.

As shown in Table 10, from a total of 70 EFL teachers, 60 (83%) reported using ICTs more than 25 minutes in a 60-minute class, indicating that the majority of teachers dedicate an important time

during class to work with ICTs. Regarding the number of hours per week that teachers expect their students to use ICTs in out-of-class activities, the greatest responses were from 3 to 4 hours (26 teachers), and from 5 to 6 hours (22 teachers). Likewise, the teachers informed about the overall hours per week that they spent using ICTS in activities related to their English teaching. Per week, 24 (34.3%) teachers said that they use ICTs from 5 to 7 hours, contrasting with the information provided by 13 (18.6%) teachers who stated they use ICTs in activities related to their English teaching for more than 20 hours. The difference in the number of hours per week teachers dedicate to using ICTs in activities related to their English practice may be attributed to the different number of classes they teach. That is, whereas some teachers may have assigned 25 hours a week, others may have 10, or 5 depending on the number of groups opened in the semester as well as the teachers' schedule availability. As for the teachers' primary use of ICTs, the majority of teachers reported using technology in class to promote interaction between students and for class delivery (71.4%), against those who responded to use ICTs only for out-of-class activities such as homework assignments or projects (18.6%).

In order to have a deeper comprehension of the use of ICTs in out-of-class activities, the teachers were asked about how often they assigned out-of-class activities (e.g., homework or projects) that involved the use of ICTs to help students develop the four language skills (reading, listening, writing, and speaking), and sub-skills (grammar, vocabulary, and pronunciation). Table 11 shows the frequency and percentage of their responses.

Table 11: ICTs usage in out-of-class activities for language skills development

	Frequency and percentage (%)				
Skills and sub-skills	**Never**	**Rarely**	**Sometimes**	**Very often**	**Always**
Reading	3 (4.3)	14 (20.0)	24 (34.3)	20 (28.6)	9 (12.9)
Listening	8 (11.4)	9 (12.9)	21 (30.0)	21 (30.0)	11 (15.7)
Writing	16 (22.9)	15 (21.42)	14 (20.0)	14 (20.0)	11 (15.7)
Speaking	11 (15.7)	19 (27.1)	19 (27.1)	14 (20.0)	7 (10.0)
Grammar	3 (4.3)	6 (8.6)	11 (15.7)	31 (44.3)	19 (27.1)
Vocabulary	2 (2.9)	6 (8.6)	14 (20.0)	26 (37.1)	22 (31.4)
Pronunciation	5 (7.1)	19 (27.1)	19 (27.1)	15 (21.4)	12 (17.1)

As seen in Table 11, the majority of EFL teachers reported assigning grammar (71.4%) and vocabulary (68.5%) activities that involve the use of ICTs in out-of-class activities 'Very often' and 'Always'. These results were followed by the frequencies of listening (45.7%), reading (41.5%), and pronunciation (38.5%) respectively. The fact that teachers mainly assign grammar and vocabulary activities that involve the use of ICTs might be because they regard new technologies as very useful to develop these sub-skills; consequently, the out-of-class activities they assign for homework reflect these beliefs.

These results contradict the ones obtained for the activities less frequently assigned by the teachers to be done out of class that involve the use of ICTs, such as writing (44.3%) and speaking (42.8%), both reported as 'Never' or 'Rarely' assigned. The findings indicate that although the teachers put emphasis on the use of ICTs to develop language skills and sub-skills, the teaching of writing and speaking skills is being neglected.

4.3 Barriers faced by EFL teachers and students when using ICTs

Section II in the ETQ and Section I in the ESQ questionnaires include questions about the barriers faced by EFL teachers and students when using ICTs. Tables 12 and 13 present the percentage distribution of the teachers and students' classification of these barriers. To limit the discussion, only the barriers that had the highest percentages will be commented on.

Table 12 shows that four barriers identified by EFL teachers as an 'Important barrier' and as a 'Very important barrier' had the highest percentages. Firstly, the barrier *Students get distracted visiting other Internet pages during class* was identified by teachers as a 'Very important barrier' (38.6%) and as an 'Important barrier' (44.3%). Secondly, the barrier *Students tend to self-mute during online writing activities* was perceived by teachers as an 'Important barrier' (51.4%) and as a 'Very important barrier' (30.0%). Thirdly, the barrier *Students' low level of English hinders the use of online collaborative writing tasks* was recognized by teachers as an **'**Important barrier' (55.7%) and as a **'**Very important barrier' (17.1%). Fourthly, teachers perceived as an 'Important barrier' (30.0%) and a 'Very important barrier' (34.3%) the *Availability and reliability of the Internet connection*. It may be noted that the first three barriers with the greatest percentages are student-related and the fourth one is institution-related.

On the other hand, the barriers the majority of teachers identified as 'Not a barrier' are: a) *Using ICTs demands a lot of my time* (77.1%), b) *The classroom is not well equipped to use ICTs* (58.6%), c) *Lack of knowledge of easy-to-use online resources* (54.3%), and d) *Lack of technological literacy* (45.7%). These results demonstrated that the teachers perceive themselves as capable enough to

work with ICTs to teach EFL, as well as having the time and knowledge of easy-to-use online resources to teach English.

Table 12: Barriers encountered by teachers when using ICTs in EFL

BARRIERS	Teachers (%)		
	NB	IB	VIB
Students get easily distracted visiting other Internet pages during class.	17.1	44.3	38.6
Students tend to self-mute when participating in online forums.	18.6	51.4	30.0
Students' low level of English hinders their participation in online collaborative writing tasks.	27.1	55.7	17.1
Availability and reliability of Internet connection	35.7	30.0	34.3
Lack of technical support.	41.4	34.3	24.3
Lack of ongoing training in the use of ICTs.	44.3	41.4	14.3
Lack of technological literacy.	45.7	41.4	12.9
Lack of knowledge of easy-to-use online resources.	54.3	31.4	14.3
The classroom is not well equipped to use ICTs.	58.6	28.6	12.9
In general, using ICTs demands a lot of my time.	77.1	15.7	7.1
Creating or searching for online materials is time-consuming.	42.9	42.9	14.3

Note: NB = Not a barrier. IB = Important barrier. VIB = Very important barrier.

Aside from the barriers listed in the questionnaire, the teachers were asked to write a barrier or barriers they had experienced not included in the instrument. Only four teachers reported and classified as 'Very important barrier' the following issues: a) technology itself is a distractor, b) lack of enough computer labs, c) lack of technical support with blocked websites, and d) having students of different proficiency levels working in pairs in online writing activities.

As for the students, Table 13 presents the barriers they classified as 'Important barrier' and 'Very important barrier'. First, the barrier *Availability and reliability of Internet connection* was recognized as 'Important barrier' (38%) and 'Very important barrier' (23.5%). Secondly, the barrier *Students' low level of English hinders the use of online collaborative writing tasks* was perceived as 'Important barrier' (45.1%) and 'Very important barrier' (15.4%). Thirdly, the barrier *Lack of*

technical support was identified as 'Important barrier' (43.2%) and 'Very important barrier' (10.9%).

Table 13: Barriers encountered by students when using ICTs in EFL

BARRIERS	Students (%)		
	NB	IB	VIB
Availability and reliability of Internet connection	38.5	38.0	23.5
Students' low level of English hinders their participation in online collaborative writing tasks.	39.5	45.1	15.4
Lack of technical support.	45.9	43.2	10.9
Lack of knowledge of easy-to-use online resources.	46.8	41.0	12.2
I tend to self-mute when participating in online forums.	51.3	35.7	13.0
I lack ongoing training in the use of ICTs.	52.6	39.3	8.1
Creating or searching for online materials is time-consuming.	56.6	37.0	6.4
Lack of technological literacy.	60.9	28.4	10.7
The classroom is not well equipped to use ICTs.	63.2	26.1	10.7
In general, using ICTs demands a lot of my time.	65.8	29.1	5.1
I get easily distracted by visiting other Internet pages during class.	66.5	25.9	7.7

Note: NB = Not a barrier. IB = Important barrier. VIB = Very important barrier.

Fourthly, the barrier *Lack of knowledge of easy-to-use online resources* was perceived as 'Important barrier' (41.0%) and 'Very important barrier' (12.2%). In the case of students, the types of barriers categorised as 'Important barrier' and 'Very important barrier' that had the highest percentages were more balanced. That is, the first and third barriers were student-related, and the second and fourth were institution-related.

Conversely, the four barriers students identified as 'Not a barrier' were the following: *Students get distracted visiting other Internet pages during class* (66.5%), *Using ICTs demands a lot of my time* (65.8%), *The classroom is not well equipped to use ICTs* (63.2%), and *Lack of technological literacy* (60.9%). Lastly, none of the students provided additional information related to other barriers that they encounter when using ICTs in EFL.

In analysing the barriers from the teachers and students' perspectives, it was noted that some barriers identified as 'Not a barrier', 'Important barrier', and 'Very important barrier' were common to both groups. That is, these barriers may be hindering the usage of ICTs to teachers and students; hence, they should be removed first by the university administration or teachers (Gilakjani *et al.,* 2015). These barriers are: a) *Lack of knowledge of easy-to-use online resources*, b) *Students' low level of English hinders the use of online collaborative writing tasks*, c) *The*

classroom is not well equipped to use ICTs, d) *Lack of ongoing training in the use of ICTs,* e) *Availability and reliability of internet connection*, and f) *Lack of technical support* (see Table 14).

Table 14: Common barriers identified in EFL teachers and students' groups

	Teachers (%)			Students (%)		
BARRIERS	**NB**	**IB**	**VIB**	**NB**	**IB**	**VIB**
Students' low level of English hinders the use of online collaborative writing tasks.	27.1	55.7	17.1	39.5	45.1	15.4
Availability and reliability of Internet connection	35.7	30.0	34.3	38.5	38.0	23.5
Lack of technical support.	41.4	34.3	24.3	45.9	43.2	10.9
Lack of ongoing training in the use of ICTs.	44.3	41.4	14.3	52.6	39.3	8.1
Lack of knowledge of easy-to-use online resources	54.3	31.4	14.3	46.8	41.0	12.2
The classroom is not well equipped to use ICTs.	58.6	28.6	12.9	63.2	26.1	10.7

4.4 Analysis of the contribution of the UTAUT factors to EFL teachers and students' attitudes towards ICTs

Descriptive statistics at item-level and construct-level were calculated in both questionnaires using SPSS version 23 to describe the data and find the patterns followed by the responses. See the descriptive statistics at item-level of the ETQ and ESQ questionnaires in Appendix L, the EFL teachers' frequency table in Appendix M, and the EFL students' frequency table in Appendix N. Additionally, Appendix O and P present the labels of the items of the ETQ and ESQ questionnaires.

4.4.1 Descriptive statistics at item-level

Descriptive statistics at item-level was performed to analyse the behaviour of the data provided by participant teachers and students through the ETQ and ESQ questionnaires.

4.4.1.1 Performance expectancy descriptive statistics at item-level

Regarding the teachers' opinions of performance expectancy, the responses to the items PE1 and PE2 were distributed on the 'Agree', 'Neither agree/nor disagree', and 'Strongly agree' choices. In items PE3, PE4, and PE5 the responses were more spread out, clustering on the 'Disagree', 'Agree', 'Neither agree/nor disagree' 'Strongly agree' options. Even though the teachers' responses differed, the majority were at the agreement side of the scale. For example, in the item

PE4, with a mean of 4.14 and a standard deviation of .728, the responses clustered on the options 'Disagree' (5.7%), 'Neither agree/nor disagree' (15.7%), 'Agree' (51.4%) and 'Strongly agree' (27.1%), showing that most of the teachers believe that the use of ICTs improves the quality of their teaching practice.

Concerning the students' opinions of performance expectancy, the responses to the items PE1, PE2, and PE5 clustered on the categories 'Disagree', 'Neither agree/nor disagree', 'Agree', and 'Strongly agree', and the responses to the items PE3 and PE4 were distributed throughout the scale. Nevertheless, similar to the teachers' opinions, most of their responses were at the agreement side of the scale. For example, in the item PE1 with a mean of 4.06 and a standard deviation of .838, the responses fell on 'Disagree' (4.7%), 'Neither agree/nor disagree' (17.9%), 'Agree' (43.6%), and 'Strongly agree' (33.8%) choices, indicating that most of the students consider that using ICTs helps them better learn the reading, writing, listening, and speaking skills.

4.4.1.2 Effort expectancy descriptive statistics at item-level

As for the teachers' perceptions of effort expectancy, the responses to the items EE6, EE7, and EE 10 were distributed on the 'Neither agree/nor disagree', 'Agree', and 'Strongly agree' options. The responses to the item EE8 only fell on the 'Agree' and 'Strongly agree' choices, and the responses to item EE9 were distributed from the 'Disagree' to the 'Strongly agree' options. These responses showed similar patterns in the frequency table, with the majority of the responses clustering on the agreement side of the scale. For example, the item EE8: *I think that using ICTs to teach English is too difficult* (reverse coded for analysis), with a mean of 4.71 and a standard deviation of .455, got responses on the 'Agree' (28.6%), and 'Strongly agree' (71.4%) choices after the reverse scoring, showing that the majority of teachers declared that using ICTS to teach English is not difficult for them.

About the students' opinions of effort expectancy, the responses to items EE6, EE7, EE9, and EE10 were spread out from the 'Disagree' to the 'Strongly agree' options, and in the case of item EE8, the responses were distributed throughout the scale. The greatest frequencies of all the effort expectancy items were clustered on the agreement side similarly to the teachers' responses in the ETQ questionnaire. Contrary to teachers' responses to the item EE8 (*I think that using ICTs to learn English is too difficult),* some answers were on the disagreement side (15%) after the reverse scoring, showing that some students responded that using ICTs to learn English was too difficult for them while others were undecided and chose the 'Neither agree/nor disagree' (18.6%) choice.

4.4.1.3 Social influence descriptive statistics at item-level

Regarding the teachers and students' opinions of social influence, the distribution of their responses was very similar, since the majority of their answers were clustered on the agreement side. Though teachers and students' responses differed, the highest percentage of responses were at the options 'Neither agree/nor disagree', 'Agree', and 'Strongly agree' in both questionnaires. For example, EFL teachers' responses to the item SI11, with a mean of 4.31 and a standard deviation of .733, clustered on the choices 'Neither agree/nor disagree' (15.7%), 'Agree' (37.1%) and 'Strongly agree' (47.1%), showing that the majority of teachers think that the university administration considers that they should use ICTs to teach English. In a second example, EFL students' responses to the item SI15, with a mean of 4.19 and a standard deviation of .731, were grouped on the options 'Disagree' (1.7%), 'Neither agree/nor disagree' (13.9%), 'Agree' (48.3%), and 'Strongly agree' (36.1%), which suggests that most of the students consider that, in general, the university has supported them in the use of ICTs to learn English.

4.4.1.4 ICT self-efficacy descriptive statistics at item-level

About teachers' opinions of their ICT self-efficacy in the use of ICTs to teach English, results revealed that the majority of the responses landed on the agreement side and none fell on the 'Strongly disagree' option, which suggests that the teachers have positive perceptions of their capacity to use ICTs to teach EFL. Their answers were distributed on the scale as follows: the item SE16 clustered only on the 'Agree' and 'Strongly agree' sides, the responses to the items SE17 and SE20 were spread out from the 'Neither agree/nor disagree' to the 'Strongly agree' option, and the responses to the items SE18 and SE19 went from the 'Disagree' to the 'Strongly agree' choices. Even though some items were more spread on the scale than others, the greatest frequency of responses notoriously were on the 'Agree' and 'Strongly agree' sides. For example, in the item SE18, with a mean of 3.94 and a standard deviation of 1.062, the responses clustered on the 'Disagree' (14.3%), 'Neither agree/nor disagree' (15.7%), 'Agree' (31.4%) and 'Strongly agree' (38.6%) options, showing that most of the teachers responded that they can overcome obstacles that occur when they use ICTs to teach English.

Concerning the students' perceptions of their ICT self-efficacy in the use of technology to learn English, results revealed their responses were more spread out on the scale. The frequency table shows that the responses to the items SE16, SE17, SE18, and SE20 were distributed from the 'Disagree' to the 'Strongly agree' choices, and the responses to the item SE19 fell throughout the

whole scale. As the teachers' opinions in relation to ICT self-efficacy, the highest response frequencies were on the 'Agree' and 'Strongly agree' options, indicating that the students have positive perceptions of their abilities to use ICTs to learn English. For example, in item SE17 with a mean of 4.22 and a standard deviation of .776, the responses clustered on the 'Disagree' (.6%), 'Neither agree/nor disagree' (11.1%), 'Agree' (40%), and 'Strongly agree' (48.3%). These results indicate that the majority of the students reported that they can use ICTs even if there is no one around to tell them what to do as they go.

4.4.1.5 Facilitating conditions descriptive statistics at item-level

Relating to the teachers' opinions of the facilitating conditions, results revealed that the responses to the items FC22 and FC25 were spread out on the scale from the 'Neither agree/nor disagree' to 'Strongly agree' choices. The responses to items FC21 and FC23 were distributed from the 'Disagree' to 'Strongly disagree' options, and the responses to the item FC24 were spread out throughout the scale. Though the teachers' responses varied, the majority clustered at the agreement side, suggesting the teachers have positive perceptions of the facilitating conditions, including the responses to the item FC24 (*The speed of the Internet is adequate to work online in the classroom*), which got the 25.7% of responses on the 'Disagree' option.

About the students' opinions of the facilitating conditions, the frequency table shows that their responses were spread out on the scale as follows: responses to the items FC21, FC22, and FC25 were distributed from the 'Disagree' to the 'Strongly agree' choices, and the responses to the items FC23 and FC24 were dispersed throughout the scale. It was observed that the greatest frequencies of the students' responses were on the 'Agree' and 'Strongly agree' sides, despite there were items clustered on other options of the scale. For example, in the item FC23, with a mean of 3.80 and a standard deviation of .921, the responses clustered on the 'Strongly disagree' (1.5%), 'Disagree' (5.6%), 'Neither agree/nor disagree' (28.4%), 'Agree' (40.2%) and 'Strongly agree' (24.4%), indicating that most students responded that the support staff provides help when there is a technical problem.

4.4.1.6 Attitudes descriptive statistics at item-level

Regarding the teachers' attitudes towards ICTs, results showed that their responses were distributed at the middle point of the scale ('Neither agree/nor disagree', 'Agree', and 'Strongly agree'). From which it may be inferred that teachers have positive attitudes towards using ICTs to teach English, since the greatest frequencies observed were on the 'Agree' and 'Strongly agree' sides. Taking the item AT30 as an example, with a mean of 4.23 and a standard deviation of .765, it was observed the responses fell on the 'Neither agree/nor disagree' (20%), 'Agree' (37.1%), and 'Strongly agree' (42.9%). These results suggest that the teachers consider that using ICTs to teach

English makes it more interesting. As for the students' attitudes towards ICTs, the responses to the items AT26, AT27, AT29, and AT30 were distributed on the 'Disagree', 'Neither agree/nor disagree', 'Agree', and 'Strongly agree' choices, and the responses to the item AT28 fell throughout the scale. The students' responses were more spread out on the scale than teachers' responses; however, the majority of the responses were clustered on the agreement side, similar to the teachers' answers about attitudes.

4.4.1.7 Actual use descriptive statistics at item-level

For the actual use items, most of the teachers' responses were distributed on the 'Neither agree/nor disagree', 'Agree', and 'Strongly agree' options (AU31, AU33, AU34, and AU35), and the responses to the item AU34 were more spread out ranging from the 'Disagree' to the 'Strongly agree' choices. These results indicate that the teachers' responses differed. Nonetheless, the majority of the responses clustered on the 'Agree' and the 'Strongly agree' sides, which suggests that most teachers concurred with these statements.

As for the students' opinions of their actual use of ICTs in EFL, the responses to the items AU31, AU32, and AU33 were on the 'Disagree', 'Neither agree/nor disagree', 'Agree', and 'Strongly agree' choices of the scale. Additionally, answers to items AU34 and AU35 were distributed throughout the scale. In all items of actual use, the highest frequency of responses was on agreement side ('Agree' and 'Strongly agree'), which suggests that most of the students have positive perceptions towards using ICTs to learn English. On the other hand, some responses to the item AU34 which says: *I dislike using ICTs to learn English* (reverse coded for analysis) were clustered on the 'Strongly agree' (7.7%) and 'Agree' (17.1%) sides, indicating that some students reported that they dislike using ICTs to learn English.

4.4.1.8 Continuance intention to use ICTs descriptive statistics at item-level

Concerning the teachers' opinions of their continuance intentions to use ICTs, the responses were distributed as follows: items CIU36, CIU37 and CIU39 were clustered on the 'Neither agree/nor disagree', 'Agree', and 'Strongly agree' options and the items CIU38 and CIU40 were clustered on the choices 'Agree' and 'Strongly agree'. These results show that most of the teachers' responses were distributed on the agreement side and that they seem convinced to continue using ICTs in their teaching practice. Taking as an example the item CIU37, with a mean of 4.5 and a standard deviation of .608, the responses were clustered on 'Neither agree/nor disagree' (5.71%), 'Agree' (38.6%), and 'Strongly agree' (55.7%) choices, indicating that most teachers responded that they

intend to continue using ICTs in the future to help students develop their grammar, pronunciation, and vocabulary.

From the students' perspective, the frequency of their responses regarding their continuance intentions to use ICTs to learn English were spread out from the 'Disagree' to the 'Strongly agree' options (CIU36, CIU37, CIU38, and CIU40), with exception of the responses to the item CIU39 that were distributed throughout the scale. Though students' responses differed, the greatest frequency of responses was on the agreement side, from which it can be inferred that the majority of the students consider that they will continue using ICTs in the future. Conversely, some responses to the item CIU39: *I dislike the idea of using ICTs to learn English in the future* (reverse coded for analysis) clustered on the 'Strongly agree' (8.1%) and the 'Agree' (17.5%) sides; indicating that some students do not consider to continue using ICTs to learn English.

4.4.1.9 Descriptive statistics at construct-level

In addition, the values of the variables relative to the UTAUT model included in the ETQ and ESQ questionnaires were calculated at construct-level for later use. The sum scores of the five variables comprised in each of the eight constructs were calculated using the SPSS sum function. Table 15 shows the descriptive statistics at construct-level of performance expectancy (PE), effort expectancy (EE), social influence (SI), ICT self-efficacy (SE), facilitating conditions (FC), attitudes (AT), actual use (AU), and continuance intention to use (CIU).

Table 15: Descriptive statistics at construct-level

		Teachers (n = 70)				Students (n = 468)			
#	Construct	Min	Max	Mean	SD	Min	Max	Mean	SD
1	PE	16	25	20.19	2.896	9	25	19.75	3.243
2	EE	17	25	21.86	2.600	10	25	19.91	3.097
3	SI	15	25	21.09	2.707	9	25	19.04	2.881
4	SE	14	25	21.53	2.947	10	25	20.50	3.133
5	FC	13	25	20.33	2.967	10	25	19.65	3.063
6	AT	15	25	22.01	2.877	9	25	20.43	3.272
7	AU	14	25	21.56	2.619	9	25	20.00	3.150
8	CIU	17	25	22.86	2.373	9	25	19.95	3.405

Note: SD = Standard deviation.

As shown in Table 15, the results of the sum of scores allowed the researcher to observe the directions of the means per construct. In this case, the majority of the responses clustered on the agreement side of the scale, favouring positive responses. Later, the sum of scores of the variables (attitudes, actual use, and continuance intention to use) will be utilised to calculate bivariate correlations.

4.4.2 Multiple linear regression

Multiple linear regression analysis was conducted with SPSS to examine the influence of the predictive variables (performance expectancy, effort expectancy, social influence, ICT self-efficacy and facilitating conditions) on the depending variable (attitudes). Multiple regression was run using the enter method in teachers and students' data set. The items in the tables are displayed according to the standardized Beta values from highest to lowest. The output tables are presented as follows:

Multiple regression analysis showed that performance expectancy construct explained the 52.7% (r^2 = .527) of the total variance. This result points out a significant association between teachers' performance expectancy and attitudes. Of the five items of performance expectancy, three had significant coefficients in predicting attitudes variance (see Table 16).

Table 16: Regression coefficients for PE on Attitudes, Teachers

Item	B	Std. Error	Beta	T	Sig.	R-Square
						.527
1. Using ICTs helps me better teach the reading, writing, listening, and speaking skills.	1.916	.459	.485	4.174	.000	
2. Using ICTs reduces the development of my students' language skills. (reversed coded)	.920	.309	.301	2.975	.004	
3. Using ICTs makes it easier for me to teach grammar, vocabulary, and pronunciation.	1.897	.451	.480	4.163	.000	

Note: P < .05.

As Table 16 shows, item 1 was the highest in explaining the relationship between the teachers' beliefs of 'Using ICTs helps me better teach the reading, writing, listening, and speaking skills' and their attitudes towards ICTs (B = .485, p = .000 < .05), thus showing that for every unit this belief increases, the teachers' attitudes towards ICTs will increase in .485 units. Next, item 2 obtained a Beta coefficient of (B = .301, p = .004 < .05), meaning that for every unit that the teachers' beliefs of 'Using ICTs reduces the development of my students' language skills' (reverse coded) increases, their attitudes towards ICTs will increase in .301 units. Lastly, item 3 obtained a Beta coefficient of (B = .480, p = .000 < .05), meaning that for every unit the teachers' beliefs of 'Using ICTs makes it easier for me to teach grammar, vocabulary, and pronunciation' increases, their attitudes towards ICTs will increase in .480 units.

Regarding the students, the multiple regression analysis found that the performance expectancy construct had a significant association with students' attitudes, explaining 54.9% (r^2 = .549) of the total variance. The five items of performance expectancy had significant coefficients in predicting attitudes value (see Table 17). As displayed in the table, item 1 was the highest in explaining the relationship between the students' beliefs of 'The use of ICTs improves the quality of my learning' and their attitudes towards ICTs (B=.249, p = .000 < .05), meaning that for every unit that this belief increases, their attitudes towards ICTs will increase in .249 units. Next, item 2 obtained a Beta coefficient of (B = .242, p = .000 < .05), showing that for every unit that the students' beliefs of 'Using ICTs enables me to accomplish the learning tasks more quickly' increases, their attitudes towards ICTs will increase in .242 units. The subsequent items had the following coefficients: item 3 (B = .192, p = .000 < .05); item 4 (B = .149, p = .002 < .05), and item 5 (B = .145, p = .001 < .05).

Table 17: Regression coefficients for PE on Attitudes, Students

Item	B	Std. Error	Beta	T	Sig	R-square
1. The use of ICTs improves the quality of my learning.	1.063	.212	.249	5.020	.000	.549
2. Using ICTs enables me to accomplish the learning tasks more quickly.	.971	.180	.242	5.393	.000	
3. Using ICTs reduces the development of my language skills. (reversed coded)	.540	.091	.192	5.967	.000	
4. Using ICTs helps me better learn the reading, writing, listening, and speaking skills.	.581	.184	.149	3.164	.002	
5. Using ICTs makes it easier for me to learn grammar, vocabulary, and pronunciation.	.571	.173	.145	3.303	.001	

Note: P < .05.

Concerning the assumed association between teachers' effort expectancy and attitudes, multiple regression analysis showed that effort expectancy construct explained the 44.0% (r^2= .440) of the total variance. However, of the five items comprised in effort expectancy, only two had significant coefficients in predicting attitudes variance. Table 18 shows that item 1 was the highest in explaining the relationship between the teachers' belief of 'Learning to use ICTs is easy for me' and their attitudes towards ICTs (B=.526, p = .000 < .05), demonstrating that for every unit that this belief increases, their attitudes towards ICTs will increase in .526 units.

Table 18: Regression coefficients for EE on Attitudes, Teachers

Item	B	Std. Error	Beta	T	Sig.	R-square
1. Learning to use ICTs is easy for me.	2.147	.535	.526	4.017	.000	.440
2. It would be easy for me to become skilful in all kinds of ICTs because they are easy to use.	-1.243	.591	-.307	-2.104	.039	

Note: P < .05.

On the other hand, item 2 obtained a smaller negative Beta coefficient (B = -.307, p = .039 < .05), indicating that for every unit that the teachers' beliefs of 'It would be easy for me to become skilful in all kinds of ICTs because they are easy to use' increases, their attitudes towards ICTs will decrease in .307 units. This result indicates that although the teachers consider technology easy to use, the great variety of ICTs they are expected to become skilful in also discourages them.

Regarding the assumed association between students' effort expectancy and attitudes, multiple regression analysis showed that the effort expectancy construct explained the 45.0% (r^2= .450) of the total variance. However, effort expectancy results were very similar to the teachers' ones in that only three of the five items included in the effort expectancy construct had significant coefficients in predicting attitudes variance (see table 19).

Table 19: Regression coefficients for EE on Attitudes, Students

Item	B	Std. Error	Beta	T	Sig.	R-square
1. Using ICTs to learn English is easy for me.	1.679	.217	.392	7.732	.000	0.450
2. I think that using ICTs to learn English is too difficult. (reversed coded)	.590	.110	.196	5.388	.000	
3. It is easy for me to do what I want with ICTs to facilitate my learning practice.	.544	.198	.133	2.747	.006	

Note: P < .05.

In this case, all items obtained positive coefficients. Item 1 was the highest in explaining the relationship between the students' beliefs of 'Using ICTs to learn English is easy for me' and their attitudes towards ICTs (B=.392, p = .000 < .05), indicating that for every unit that this belief

increases, their attitudes towards ICTs will increase in .392 units. Item 2 obtained a Beta coefficient (B=.196, p = .000 < .05), suggesting that for every unit that the students' beliefs of 'I think that using ICTs to learn English is too difficult' (reversed coded) increases, their attitudes towards ICTs will increase in .196 units. Finally, item 3 had a Beta coefficient (B=.133, p = .006 < .05), showing that for every unit that the students' beliefs of 'It is easy for me to do what I want with ICTs to facilitate my learning practice' increases, their attitudes towards ICTs will increase in .133 units.

Multiple regression analysis was conducted to know if the construct of social influence contributed to the teachers' attitudes towards ICTs. The results were in favour of a significant relationship, showing that social influence explained 26.5% (r^2= .265) of the total variance of attitudes. Three items had significant coefficients in predicting the attitudes variance. Item 1 was the highest in explaining the association between the teachers' beliefs of 'In general, the university has supported the use of ICTs to teach English' and their attitudes towards ICTs (B=.323, p = .028 < .05), which indicates that for every unit that this belief increases, their attitudes towards ICTs will increase in .323 units. As well, item 2 obtained a Beta coefficient of (B = .318, p = .048 < .05), demonstrating that for every unit that this belief increases, their attitudes towards ICTs will increase in .318 units. Lastly, item 3 obtained a negative Beta coefficient (B = -.238, p = .049 < .05), meaning that for every unit that the teachers' belief of 'Using ICTs to teach English makes me appear to be a better teacher' increases, their attitudes will decrease in .238 units. This result indicates that although the teachers think that using technology helps them to seem like better teachers, they are aware that it only constitutes one aspect of their teaching practice (see Table 20).

Table 20: Regression coefficients for SI on Attitudes, Teachers

Item	B	Std. Error	Beta	T	Sig.	R-square
						0.265
1. In general, the university has supported the use of ICTs to teach English.	1.432	.636	.323	2.251	.028	
2. Using ICTs to teach English makes me more valuable to my administrators.	1.026	.511	.318	2.007	.048	
3. Using ICTs to teach English makes me appear to be a better teacher.	-.642	.321	-.238	-2.001	.049	

Note: P < .05.

As for the students, multiple regression analysis was conducted to assess the effects of social influence construct on students' attitudes. The results showed that social influence explained 34.9% (r^2= .349) of the total variance. In this case, four of the five items included in the construct obtained positive significant coefficients in predicting the attitudes variability. Findings revealed that item 1 was the highest in explaining the association between the students' beliefs of 'In general, the university has supported the use of ICTs to learn English' and their attitudes towards ICTs (B=.249, p = .000 < .05), meaning that for every unit that this belief increases, the students' positive attitudes towards ICTs will increase in .249 units. Item 2 had a Beta coefficient of (B=.200, p = .000 < .05), indicating that for every unit the belief of 'Using ICTs to learn English makes me appear to be a better student' increases, their attitudes towards ICTs will increase in .200 units. The subsequent Beta coefficients were the following: item 3 (B=.182, p = .000 < .05) and item 4 (B=.173, p = .000 < .05) (see Table 21).

Table 21: Regression coefficients for SI on Attitudes, Students

Item	B	Std. Error	Beta	T	Sig.	R-square
1. In general, the university has supported the use of ICTs to learn English.	1.114	.210	.249	5.308	.000	0.349
2. Using ICTs to learn English makes me appear to be a better student.	.665	.155	.200	4.298	.000	
3. The university administration considers that I should use ICTs to learn English.	.786	.207	.182	3.805	.000	
4. People who are important to me disapprove that I use ICTs to learn English. (reversed coded)	.540	.124	.173	4.347	.000	

Note: P < .05.

The result of multiple regression analysis indicated that the ICT self-efficacy construct explained 37.9% (r^2= .379) of the total variance of attitudes. This outcome points out a significant association between teachers' ICT self-efficacy and their attitudes towards ICTs. Of the five items contained in the ICT self-efficacy construct, three had statistically significant coefficients in predicting attitudes' value. It can be observed that item 1 was the highest in explaining the association between the teachers' beliefs of 'In general, I am competent enough in the use of ICTs to teach English' and their attitudes towards ICTs (B=.417, p = .003 < .05), which indicates that for every unit that this belief increases, the teachers' attitudes towards ICTs will increase in .417

units. Next, item 2 obtained a Beta coefficient of (B = .347, p = .006 < .05), demonstrating that by every unit that the belief of 'I can access the Smrt contents and online resources on the Internet without help' increases, their attitudes towards ICTs will increase in .347 units. To finish, item 3 obtained the smallest negative Beta coefficient (B = -.267, p = .024 < .05), meaning that for every unit that the belief of 'I can overcome obstacles that occur when I use ICTs to teach English' increases, their attitudes towards ICTs will decrease in .267 units. This finding shows that although the teachers can overcome the obstacles that emerge when using ICTs, they still need to be supported to deal with issues related to the software or hardware (see Table 22).

Table 22: Regression coefficients for SE on Attitudes, teachers

Item	B	Std. Error	Beta	T	Sig.	R-square
						.379
1. In general, I am competent enough in the use of ICTs to teach English.	1.843	.590	.417	3.122	.003	
2. I can access the Smrt contents and online resources on the Internet without help.	2.191	.768	.347	2.852	.006	
3. I can overcome obstacles that occur when I use ICTs to teach English.	-.723	.313	-.267	-2.311	.024	

Note: P < .05.

Concerning the students' data, multiple regression analysis was conducted to assess the effects of ICT self-efficacy on students' attitudes. The results revealed that the ICT self-efficacy construct explained 27.0% (r^2= .270) of the total variance (see Table 23).

Table 23: Regression coefficients for SE on Attitudes, Students

Item	B	Std. Error	Beta	t	Sig.	R-square
						0.270
1. I can overcome obstacles that occur when I use ICTs to learn English.	1.026	.268	.229	3.825	.000	
2. In general, I am competent enough in the use of ICTs to learn English.	.961	.224	.227	4.301	.000	
3. I can use ICTs even if there is no one around to tell me what to do as I go.	.598	.221	.142	2.714	.007	

Note: P < .05.

In this case, three of the five items included in the construct had positive statistically significant coefficients in predicting the attitudes variance. Item 1 was the highest in explaining the association between the students' belief of 'I can overcome obstacles that occur when I use ICTs

to learn English' and their attitudes towards ICTs (B=.229, p = .000 < .05), indicating that for every unit that this belief increases, students' attitudes towards ICTs will increase in .229 units. Item 2 had a Beta coefficient of (B=.227, p = .000 < .05), showing that for every unit that the belief of 'In general, I am competent enough in the use of ICTs to learn English' increases, their attitudes towards ICTs will increase in .227 units. Lastly, item 3 obtained a Beta coefficient of B = .142, (p = .007 < .05).

Regarding the teachers' data, to assess the association between the teachers' perceived facilitating conditions and their attitudes towards ICTs, multiple regression analysis revealed that the facilitating conditions construct explained the 37.8% (r^2= .378) of the total variance of attitudes, which shows a significant association. Of the five items from the facilitating conditions construct, three obtained significant coefficients in predicting the attitudes variance (see Table 24).

Table 24: Regression coefficients for FC on Attitudes, Teachers

Item	B	Std. Error	Beta	T	Sig.	R-square
						0.378
1. Overall, I have the knowledge necessary to use ICTs to teach English.	1.333	.464	.327	2.869	.006	
2. The speed of the Internet is adequate to work online in the classroom.	-.815	.314	-.315	-2.594	.012	
3. Using ICTs to teach English fits into my teaching style.	.751	.362	.228	2.077	.042	

Note: P < .05.

As seen in Table 24, item 1 was the highest in explaining the association between the teachers' beliefs of 'Overall, I have the knowledge necessary to use ICTs to teach English' and their attitudes towards ICTs (B=.327, p = .006 < .05), which means that for every unit that this belief increases, their attitudes towards ICTs will increase in .327 units. On the other hand, item 2 obtained a negative coefficient (B= -.315, p = .012 < .05), indicating that for every unit that the belief of 'The speed of the Internet is adequate to work online in the classroom' increases, teachers' attitudes towards ICTs will decrease in .315 units. This finding reveals that when the Internet turns slow, the teachers feel discouraged from using ICTs in the classroom. The last Beta coefficient was of item 3 (B= .228, p = .042 < .05), which shows that for every unit the belief of 'Using ICTs to teach

English fits into my teaching style' increases, teachers' attitudes towards ICTs will increase in .228 units.

In the case of students' data set, in order to assess the association between their perceptions of facilitating conditions and their attitudes towards ICTs, multiple regression analysis was conducted indicating that the facilitating conditions construct explained 38.4% (r^2= .384) of the total variance, showing that there is a significant association between the students' perceptions of the facilitating conditions and their attitudes towards ICTs. Of five items, three had positive significant coefficients in predicting the attitudes' variability. Findings revealed that item 1 was the highest in explaining the association between the students' beliefs of 'Using ICTs to learn English fits into my learning style' and their attitudes towards ICTs (B=.383, p = .000 < .05), indicating that for every unit that this belief increases, their positive attitudes towards ICTs will increase in .383 units (see Table 25).

Table 25: Regression coefficients for FC on Attitudes, Students

Item	B	Std. Error	Beta	T	Sig.	R-square
						0.384
1. Using ICTs to learn English fits into my learning style.	1.587	.197	.383	8.035	.000	
2. I have the resources necessary to learn English in the classroom	.946	.216	.212	4.386	.000	
3. Overall, I have the knowledge necessary to use ICTs to learn English.	.619	.217	.136	2.852	.005	

Note: P < .05.

As well, item 2 obtained a Beta coefficient of (B=.212, p = .000 < .05), demonstrating that for every unit that the belief of 'I have the resources necessary to learn English in the classroom' increases, students' attitudes will increase in .212 units. Finally, item 3 obtained a Beta coefficient of (B = .136, p = .005 < .05).

Summarizing the results of the multiple regression analysis of teachers and students' data set:

Figure 25 summarizes the results of the multiple regression analysis conducted on teachers and students' data set. It shows the degree of influence of the predictive variables, namely performance expectancy, effort expectancy, social influence, ICT self-efficacy, and facilitating conditions on attitudes, used as a dependent variable in this study.

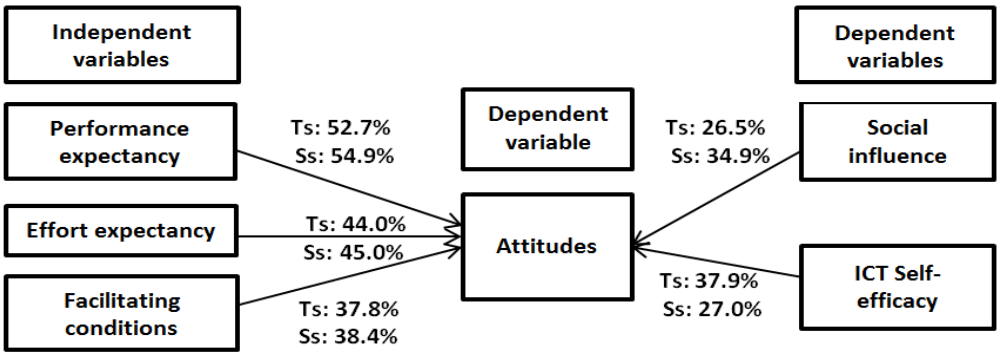


Figure 25: Degree of association between predictive variables and the dependent variable.

4.4.3 Bivariate correlations

Because it is unknown whether EFL teachers and students' attitudes towards ICTs can predict or explain their actual use and the continuance intention to use ICTs, one of the purposes of this study was to examine whether there is a relationship between these variables. Therefore, the Pearson product-moment correlation coefficient was calculated in the ETQ and ESQ questionnaires to know if a statistically significant relationship exists between attitudes, actual use, and continuance intention to use.

Regarding the relationships in the teachers' data set, figure 26 shows that the correlation between teachers' attitudes and actual use was highly significant (Pearson r value .605**). As for the teacher's attitudes and continuance intention to use, the correlation was even higher (Pearson r value .701**). Though these results do not indicate causality, the coefficients show that there is a strong association between teachers' attitudes and actual use, and attitudes and continuance intention to use. Additionally, it can be observed that the correlation between actual use and continuance intention to use is statistically significant as well (Pearson r value .603**).

		Attitudes	Actual use	CIU
Attitudes	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	70		
Actual use	Pearson Correlation	.605**	1	
	Sig. (2-tailed)	.000		
	N	70	70	
Continuance Intention to use	Pearson Correlation	.701**	.603**	1
	Sig. (2-tailed)	.000	.000	
	N	70	70	70

** Correlation is significant at the 0.01 level (2-tailed).

Figure 26: Correlation between attitudes, actual use, and continuance intention to use, Ts.

Once the results of the students' data set were analysed, it was observed that the correlation between students' attitudes and actual use was highly significant (Pearson r value .689**), as well as the correlation between students' attitudes and continuance intention to use (Pearson r value .689**). These results indicate the existence of a strong association between students' attitudes and actual use as well as attitudes and continuance intention to use (see figure 27). In addition, the strength of association between students' actual use and continuance intention to use stood out, reaching almost a perfect correlation with a Person r value of .953.

		Attitudes	**Actual use**	**Continuance intention to use**
Attitudes	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	468		
Actual use	Pearson Correlation	.689**	1	
	Sig. (2-tailed)	.000		
	N	468	468	
Continuance	Pearson Correlation	.689**	.953**	1
Intention to use	Sig. (2-tailed)	.000	.000	
	N	468	468	468

** Correlation is significant at the 0.01 level (2-tailed).

Figure 27: Correlation between attitudes, actual use, and continuance intention to use, Ss.

4.5 Chapter summary

This chapter presented the analysis of the data collected through the ETQ and ESQ questionnaires. Findings showed that from a variety of electronic devices, the most frequently used by the teachers are: the Desktop computer and the Laptop. In addition, findings showed that the online resources most frequently used by teachers are: a) the Smrt English course, b) extra activities from the Internet to help students develop the four language skills and sub-skills, c) online portfolios, and d) email. These results are opposite to the use of online resources such as educational platforms, voice over Internet protocol (e.g., Skype), and the elaboration of webpages, among others. The majority of teachers said that they 'Never' and 'Rarely' used them.

Regarding the time of dedication and main uses of ICTs, results showed that the majority of the teachers (85.8%) dedicate a considerable amount of time to using ICTs in the face-to-face classes, and 68.5% of them expect their students to use technology in out-of-class activities for a space of 3 to 6 hours a week. Lastly, findings revealed that teachers use ICTs mainly for class delivery and to promote interaction. ICTs mediate the interaction between teachers and students, students and their peers, and students and content.

An unexpected finding was the low frequency with which the teachers assign out-of-class activities that involve the use of ICTs to develop speaking and writing skills. The majority of teachers reported that they 'Never' and 'Rarely' assigned these types of activities. On the other hand, grammar and vocabulary activities were found to be mainly assigned by teachers, revealing an unbalanced use of ICTs in out-of-class activities.

As for the barriers that teachers and students encounter when using ICTs in EFL, findings revealed that most of them are related to the students' proficiency level and their use of ICTs, as reported by the teachers. On the other hand, results showed that the majority of the barriers that affect the students' use of ICTs are institution-related. Moreover, it was discovered that some barriers were common to both groups and thus, should be eliminated first.

Descriptive statistics and frequency distribution analysis of the teachers and students' data revealed that the majority of EFL teachers and students have positive opinions towards the use of ICTs. Additionally, multiple regression analysis revealed that all the constructs, namely performance expectancy, effort expectancy, social influence, ICT self-efficacy, and facilitating conditions explained the variability of the construct of attitudes; however, performance expectancy and effort expectancy had the greatest significant coefficients in predicting the attitudes' value, indicating that these two beliefs contribute the most to EFL teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL.

Finally, bivariate correlations using the Pearson product-moment correlation coefficient showed that there is a statistically significant relationship between EFL teachers and students' attitudes, actual use, and continuance intention to use ICTs. Though these results do not indicate causality, they suggest that teachers and students' attitudes may influence their actual usage and continuance intention to use ICTs. Additionally, the strong association between teachers and students' actual usage and continuance intention to use ICTs indicates that actual usage of ICTs may influence the teachers and students' willingness to using them in the future.

Chapter 5 Evidence of uses and attitudes towards ICTs obtained through qualitative methods

5.1 Introduction

This chapter reports on the research findings of focus groups and classroom observations. The main themes that emerged from group discussions guided the sequence of the following sections: Benefits of using ICTs in the teaching and learning of EFL (5.2); People's opinions that influence the use of ICTs in the area of EFL (5.3); The ability to use ICTs in the teaching and learning of EFL (5.4); Organizational and technical infrastructure(5.5); Attitudes toward the use of ICTs in EFL (5.6); Actual use of ICTs (5.7); Intention to continue to use ICTs in the teaching and learning of EFL (5.8), and Barriers encountered by EFL teachers and students when using ICTs (5.9). Results obtained in classroom observations and focus groups about the EFL teachers and students' actual use of ICTs are presented together, providing solid evidence of how technology is being used and which factors affect its usage. Finally, the chapter finishes with a summary of the main findings.

5.2 Benefits of using ICTs in the teaching and learning of EFL

This section presents the analysis of the contributions provided by teachers as well as second-level, and fourth-level students in focus group interviews about the possibilities afforded by ICTs to facilitate the teaching and learning of EFL. The findings were grouped into three main themes of affordances that arose during discussions, namely a) language skill development affordances, b) social affordances, and c) educational affordances. Each theme included 1 to 3 sub-themes (see Table 26).

Table 26: The possibilities afforded by ICTs in relation to EFL teaching and learning

Key themes	Sub-Themes level 1	Sub-themes level 2
Language skill development affordances	ICTs facilitate the development of language skills and sub-skills	- The usefulness of ICTs to enhance listening, reading, vocabulary, grammar, and pronunciation.
Social affordances	Teacher-student interaction	- Scaffolding
	Student-student interaction	- Community of learners
Educational affordances	A new teaching and learning environment	- Face-to-face and online mode - Synchronous and asynchronous communication
	Autonomous learning	
	Ease of use of technology	- Taking responsibility for their own learning
	Support provided by more experienced colleagues/peers	- Task management - Time management - Teachers' community of practice

As shown in Table 26, all participants agreed that ICTs enhance their teaching and learning of EFL. Their comments about the usefulness of ICTs focused on their affordances to develop language skills and sub-skills. However, during the meetings, other possibilities that new technologies offer arose, namely social affordances and educational affordances. They are explained as follows:

5.2.1 Language skill development affordances

Regarding the usefulness of ICTs perceived by EFL teachers and students to enhance their teaching and learning practice, the majority of the participants said that ICTs facilitate the teaching of all areas of English. However, the language skills and sub-skills they mentioned the most were reading, listening, grammar, vocabulary, and pronunciation. On the other hand, they barely mentioned speaking and writing skills. Their commentaries focused mostly on how the Smrt English course and the links it provides to free online resources, as well as the teaching and learning materials they take from the Internet improve the English language skills and sub-skills. The following subsections present their comments about the usefulness of ICTs to develop the areas and sub-areas of English:

5.2.1.1 The usefulness of ICTs to enhance grammar

About the usefulness of ICTs to enhance the teaching of grammar, the majority of teachers agreed that ICTs are especially useful to facilitate students' learning of this language sub-skill. They said that the great variety of interactive activities available on the Internet, vivid colours, sounds, and motions make the teaching of grammar more fun. Additionally, teachers deemed as 'important' that online tools such as *Gmail*, *forums*, and *chats* facilitate the exchange of information with their students. Due to the documents are automatically stored in *Google Drive*, they can ask their students to organise files, personal information, images, and links, among others, to create a portfolio of evidence. Jose added:

> I think that ICTs are very useful to teach grammar... I explain the grammar structure with Smrt, and then, I reinforce my explanation with a video. I elaborate a table where the students write information related to the video, for example, the grammar formula of the present continuous… I include links for them to have additional sources related to the topic. The good part is that they can continue to work on the activity at home or in any place. (FG2TS_Jose)

The computer game *Kahoot!* turned out to be very popular among teachers to teach grammar, which indicates that teachers are taking advantage of online resources students find engaging to facilitate language learning. Lisa explained that *Kahoot* is a free game-based learning platform

that includes a series of multiple-choice questions. The students join the game and answer the questions on their computers or smartphones to gain points. She said that *Kahoot!* is very fun, and students like it a lot (FG2TS_Lisa).

From the students' perspective, second-level and fourth-level students unanimously agreed that ICTs improve their learning of EFL. Their opinions were very similar to the ones given by teachers regarding the usefulness of ICTs to enhance the learning of grammar. Students declared that computer games enabled them to understand grammar structures more easily. For example, Servando said that 'Games like *Kahoot!* make you be focused on reading and thinking quickly about the correct response like in a competition' (FG2L4_Servando). Like their teachers, students considered online tools as very useful to learn English. They commented that applications like *Google Docs* allow them to help each other to learn grammar. Rocio said 'Nancy knows more English than me, and she helps me by doing the exercises in the same document' (FG2L4_Rocio).

5.2.1.2 The usefulness of ICTs to improve listening, vocabulary, and pronunciation

Concerning listening, vocabulary, and pronunciation, the teachers commented that ICTs provide students with opportunities to search for more information about a topic of their interest on the Internet (e.g., regular and irregular verbs), learn vocabulary by associating sounds and images, and to read aloud from a written text to improve pronunciation (FG1TS_Alberto; FG1TS_Nora). Rina explained how she blends the teaching of listening, vocabulary, and pronunciation with the use of ICTs in the classroom and outside it:

> I am convinced that ICTs are helpful to develop pronunciation, listening, and vocabulary. In class, I project videos and audios to the students. I ask them to repeat vocabulary words or phrases I see they find difficult. For homework, sometimes I ask them to work with the software *EnglishCentral* located in the Learning Tools section of Smrt. With this software, the students watch a video and read the captions in English. Then, they choose some sentences and record them by saying them aloud. After that, the software gives students automated feedback on pronunciation and fluency. (FG1TS_Rina)

Amalia said that to help students pronounce correctly, she asks them to work in teams. They read aloud a conversation and record it on a smartphone. Then, she listens to the recordings and helps students with pronunciation errors (G1TS_Amalia).

Although the ICTs used by teachers to develop listening skills were similar to those they employed to teach pronunciation and vocabulary, teachers provided interesting contributions about how new technologies enhanced the development of this language ability. They commented that the advantages of technology allow students to listen to different accents of English native speakers, replay the audio the times they need in a self-paced fashion, learn to discriminate sounds and become independent students. For example, Manuel said that he usually plays videos, songs,

audios, and short videos to help students develop listening skills. He pointed out that ICTs help him show his students different accents of English speaking people from different countries, and not only the American accent (FG2TS_Manuel). Likewise, Amalia said:

> Like my partners, I use videos and audios, but I also work at the word level. I mean... the students to repeat certain words several times after me to help them distinguish certain sounds that are very similar in Spanish, for example, the pronunciation of letters 'V' and 'B'. I think that if students are able to pronounce a word correctly, it is more likely that they understand that word when listening. (FG1TS_Amalia)

Several teachers commented that they used ICTs to develop the listening skills by playing videos and audios from Smrt and others they found on YouTube. They said that YouTube was very useful because they could adapt the videos to the theme of the class (FG2TS_ Linda; FG1TS_Mela; FG2TS_Jose). Sara stated that 'ICTs are very effective to help students develop their listening skills. They allow students listening to the audio the times they need and at their own pace... Students don't depend on the teacher playing a CD once or twice for the whole class' (FG2TS_Sara).

As for students, their commentaries about the usefulness of ICTs to enhance their language skills and sub-skills reflected the ones made by the teachers. They unanimously agreed that the audios and videos from Smrt and others from the Internet were very useful to improve their listening and pronunciation skills. Jessica commented:

> I find it difficult to understand academic words when people are talking. They talk too fast and I don't understand the vocabulary. Watching videos has helped me understand spoken English and improve my pronunciation. (FG2L2_Jessica)

Students gave great importance to the fact that they could listen to the audios many times, as well as the opportunity to listen to the pronunciation of English native speakers since they felt their listening skills improved (FG1L4_Rosa; FG2L4_Iris; FG2L4_Servando; FG2L4_Arturo).

Regarding vocabulary learning, students said that ICTs helped them better understand the meaning and pronunciation of new words because they could make connections between image and meaning. Therefore, they did not have to memorise new words anymore because they could learn their meaning by looking at images. Likewise, all students agreed that watching movies in English was very useful to learn vocabulary. Roxana went further and said that the fact many web pages were in English somehow forced her to understand vocabulary or instructions, and she considered this very useful (GF2L2_Roxana). Students also commented on how convenient it was that ICTs showed their spelling errors because they learned to write correctly (FG1L2_Alex;

FG1L2_Gero). Additionally, practical tools to learn vocabulary emerged in group discussions, such as *Duolingo*. Rosa said 'I use *Duolingo* to learn vocabulary. It is an application to learn English organised by levels of competence' (G1L4_ROSA).

5.2.1.3 The usefulness of ICTs to develop reading skills

As for the usefulness of ICTs to develop the reading skills, the teachers said that they apply the reading exercises from Smrt, but also search for readings on the Internet that students could find more interesting (FC2TS_Jose; FG2TS_Daniel; FG1TS_Graciela). Their commentaries indicated that teachers consider essential the use of authentic reading materials to help students develop reading skills and learn cultural aspects. Lisa, for example, explained how she uses ICTs to help students become familiar with the use of English in real life through reading online magazines:

> ICTs help me show students a more realistic side of the language. One of the things I usually do is searching for online magazines, not necessarily scientific ones, but magazines that have topics they can identify with and that are interesting for them. I want them to get familiar with the language used in real-life situations. It is not the same the language used in real life and the language learned in a classroom. (FG2TS_Lisa)

Students' opinions regarding the usefulness of ICTs to improve their reading skills echoed those made by the teachers. All students commented on how helpful technologies were to learn new vocabulary. Moreover, the fourth-level students unanimously agreed that ICTs were also useful to understand readings in English related to their majors.

5.2.1.4 The usefulness of ICTs to develop writing and speaking skills

Contrary to the positive comments about the usefulness of ICTs to teach English, the majority of teachers agreed that writing was an area of English in which using ICTs were not practical. They described some of the problems they face when applying writing activities; they pointed out that 'For writing, the teacher still has to revise very carefully, and it is very time-consuming... In the case of writing, ICTs do not help you very much' (FG2TS_Jose). Graciela and Mariela agreed with Jose. Mariela said 'Honestly, I don't teach writing simply because the students don't know enough vocabulary' (FG2TS_Mariela). Mela added that her students only practised writing when they typed in grammar exercises (FG1TS_Mela).

Furthermore, Ildefonso said that he hardly ever used ICTs to develop writing and speaking skills because students were not competent enough to write or speak. He explained that for writing activities, he asks students to use their notebooks instead of computers. As for speaking skills, Ildefonso pointed out that students were not competent enough to start and keep a conversation going. Therefore, it was difficult for him to advance in the development of these skills (FG1TS_Ildefonso).

Surprisingly, none of the students commented on the usefulness of ICTs to improve the writing skills or to be interested in developing this ability; which reflects the lack of emphasis teachers put on this area of language. On the other hand, and unlike some teachers' opinions about the lack of students' speaking competences, some students expressed interest in using ICTs to develop their oral abilities. For example, Rosa said that she would like to use *Skype* to have online conversations in English (FG1L4_Rosa); Iris commented she listened to *Smrt audios*, *YouTube videos*, and used some applications such as *Duolingo* and *Free Rice* to learn vocabulary to be able to answer when the teacher asked questions in English (FG2L4_Iris), and Diana used the application *Hello Talk to the World* to chat with people from different countries that spoke English on the phone and improve her English' (FG1L4_Diana).

During discussions held with students, new themes emerged beyond the use of ICTs for skill development. Their declarations demonstrated that they are aware of the affordances of ICTs to facilitate their learning of EFL and their teachers' teaching practice. For example, Vania and Olivier said that they liked to use ICTs because they felt they made it easier for teachers to teach, and for them to learn. Besides, since they could share documents with the teacher through *Google Drive*, they did not need a flash memory anymore (FG1L2_Vania; FG1L2_Olivier). Moreover, students made comparisons between the former methods they used to study English before entering the university and the way they learn EFL with technology in a blended learning environment. For instance, Olivier commented that when he studied English in high school '... the teacher used to bring a CD player, taught the class, applied exams, and that was it… Now it is much better because of the variety of learning materials we can access online...I feel I learn more using ICTs' (FG1L2_Olivier).

5.2.2 Social affordances

EFL teachers and students affirmed that ICTs facilitate: a) teacher-student interaction and b) student-student interaction in the face-to-face and online mode. The next subsections present their commentaries.

5.2.2.1 Teacher-student interaction

Teachers' commentaries centred on the way they use scaffolding strategies to provide instructional support, such as asking questions to students after explaining a topic to check for

understanding, having students work in teams using *Google Docs,* and monitoring their work online to correct writing errors, among others. For example, Manuel said:

> I dedicate from three to four sessions at the beginning of a course to show students the content of the different sections of Smrt, such as the *Café* section that has videos; the *Resources* section which contains online dictionaries, *TED talks,* and computer games among others… I demonstrate how to use some of these learning tools for them to work on Fridays when they work online out of the classroom. (FG2TS_Manuel)

In the above example provided by teacher Manuel, it can be observed how a teacher scaffolds his students for them to get familiar with the content and use of online resources included in the Smrt course before working with it throughout the semester.

The students' commentaries about the teachers' use of scaffolding strategies were comparable to those made by the teachers. They said that their teachers provided support when they noticed they did not understand how to do some activity (FG2L2_Heriberto; FG2L2_Jessica; FG2L2_Alex; FG2L4_Maria). For example, Heriberto said 'ICTs are tools that help us learn English. The teacher always explains what she wants us to do and gives some examples… Then, we work online. She never asks us to do anything without explaining how to do it first' (FG2L2_Heriberto).

5.2.2.2 Student-student interaction

Teachers' opinions focused on the usefulness of ICTs to build a community of learners. They highlighted that new technologies facilitated student-student interaction in teamwork assignments and collaborative projects. As for students, their arguments denoted that they had formed a community of learners. They remarked the usefulness of ICTs to do out-of-class activities and help them become responsible for their learning. They declared that among the benefits of ICTs, they allow them to communicate with their peers, clarify doubts, hold discussions, better organise tasks, etc. For example, Diana said:

> One of the benefits of working online is that, even though we are not together, we can plan, clarify doubts between us, debate, organise the assignment better, and share documents with other students and with the teacher...There is a greater responsibility. (FG1L4_Diana)

It was interesting to discover that the majority of students recognised that ICTs, like *Gmail* and *WhatsApp*, helped them communicate with their peers, but also to know who is responsible and who is not, and decide with whom to team up. Additionally, their comments indicated that online collaborative work helps them develop a sense of self-confidence and a sensation of learning better. For example, Olivier explained that in a teamwork activity in which they made a *PowerPoint* presentation about music, they used *Facebook Messenger* to communicate among the team members. He said that after practising his lines many times, he felt more prepared in

reading and writing because he learned to make phrases. Olivier stated that he felt happy they all worked as a team (FG1L2_Olivier). These findings are consistent with the principles of the sociocultural approach to language learning in which the Smrt English course is grounded, since it promotes interaction and collaborative learning through the use of technology (see section 3.4).

5.2.3 Educational affordances

Participant teachers and students' opinions concurred that the affordances of ICTs allow them to continue to learn and develop skills. Their comments focused on: a) a new teaching and learning environment, b) autonomous learning, c) ease of use of technology, and d) support provided by colleagues or classmates with more experience in the use of ICTs.

5.2.3.1 A new learning environment

Regarding the new teaching and learning environment, in which interaction takes place in face-to-face and online mode, teachers and students underlined the possibilities afforded by ICTs to communicate with each other in real-time using instant messaging applications (synchronous communication), and at their own pace, by sending emails or participating in forums (asynchronous communication). In the case of the teachers, they mainly communicate with their students asynchronously. For example, several teachers mentioned using the educational platform *Schoology* to communicate with their students through messages and forums (FG1TS_Amalia; FG1TS_Graciela; FG1TS_Ildefonso). However, the majority of teachers agreed that *Gmail* was the primary means they used to interact with students (FG2TS_Jose; FG2TS_Manuel; FG2TS_Mariela; FG1TS_Amalia). Only two teachers, Amalia and Manuel, stated that they used *Google Docs* to share documents with their students in writing and grammar activities. They said that they could make corrections in real-time and provide them with feedback (FG1TS_Amalia; FG2TS_Manuel).

Students' opinions about the possibilities afforded by ICTs to facilitate interaction revealed that communication is mostly synchronously among them. They explained they use instant messaging applications such as *WhatsApp* and *Facebook Messenger* to communicate with each other. Commentaries like the following one were frequent during the discussions:

> As I said before... we communicated through *WhatsApp* to know our turns. We used *Google Drive* to share a *Word* document, and everybody wrote their part taking care of not deleting the paragraphs of other students. When we finished, we sent the assignment to the teacher's *Gmail*. (FG1L2_Vania)

5.2.3.2 Autonomous learning

Autonomous learning is another theme that emerged during group discussions. Participants' commentaries indicated that they are making their own decisions about the use of ICTs for the teaching and learning of EFL. Some teachers said that they had had to learn how to use technology to be able to explain to their students in class how to it (FG2TS_Sara; FG2TS_Daniel; FG2TS_Mariela). For example, Daniel said that he did not know how to upload videos on *YouTube*. Hence, he had to watch online tutorials and practised in his free time, to be able to teach his students how to do it (FG2TS_Daniel).

Like the teachers, students' points of view showed that ICTs help them take responsibility for their own learning. Some students mentioned that they studied English in free online courses on the Internet to improve what they had learned in class (FG2L2_Heriberto; FG1L4_Rosa). Vania said, 'when I am at home, I can connect to Smrt and review in my free time (FG1L2_Vania). Raul added:

> In my opinion, ICTs help me learn English by myself. When I watch a tutorial or navigate on the web I learn English, but that's an extra, and it depends on each student. Then, in class, I can understand what the teacher says because I have already learned some vocabulary on the Internet. (FG2L2_Raul)

5.2.3.3 The ease of use of technology

Most participants agreed that using ICTs was easy for them. Some teachers explained how they learned to use new technologies. They also mentioned some of the benefits obtained from using ICTs, such as better time and task management. For instance, Rina mentioned that she had been using ICTs from a very young age. Hence, it was not difficult for her to use new software, or a new tool, or a page. She said that using ICTs was very advantageous because they helped her to save time. Sara added that she did not have to waste her time cutting out pieces of paper and glueing them to make didactic materials anymore. She claimed that when she needed something, she searched for it on the Internet and could have it in seconds (FG2TS_Sara). Additionally, several teachers commented that the Smrt course provides links to many online resources, which facilitates the teaching of the four language skills and sub-skills. Therefore, they could plan the lesson and finish on time what had prepared as they had the tools they needed (FG1TS_Graciela; FG1TS_Alicia; FG1TS_Nora; FG1TS_Alberto; FG1TS_Ildefonso, and FG1TS_Mela).

Contrary to teachers' remarks, the majority of students did not make comments about the ease of use of ICTs. They mostly said that Smrt was very user-friendly, and new technologies and the Internet were part of their lives. However, some students reported that learning EFL with ICTs was difficult for them. For example, Gero said 'I definitively do not understand. Click here… click there… English is very complicated for me' (FG1L2_Gero). Comments like this, made by a second-

level student, indicate that there are still students for whom learning English with technology is challenging. Perhaps, the combination of low proficiency in English and the use of ICTs make language learning complicated.

5.2.3.4 Support provided by more experienced colleagues or classmates

Teachers explained how they provided support to each other when they dealt with technologies they considered complex. Their comments denoted that they had built a community of practice. For example, Amalia said that when she did not know something related to the use of ICTs, she asked for help to other teachers (FG1TS_Amalia). Similarly, Lisa commented that one software can be more complicated than others. She said that creating exams online was difficult for her. In such situations, she needed some training or the support of a more experienced teacher to learn how to do it. Lisa said that 'a year ago, teachers from the School of English received training from another teacher that had been using an application called *Flubaroo* to make exams, and this is how I learned to do it' (FG2TS_Lisa).

Lisa's comment revealed a limitation of the Smrt course. She explained that the problem with the exams of Smrt is that the score appears automatically but in percentages. For example, reading 30%, grammar 50%, and so on. Therefore, neither the teacher nor the student knows which answers were correct or incorrect since the exam does not show the responses marked.

On the same subject, the majority of students reported that using ICTs was very easy for them. However, few of them declared that sometimes they had to ask for their peers' support because, as they mentioned, their English was not very good or they were not familiar with the use of some ICTs. For example, Camila said 'I have always found ICTs very easy, but in English, there are some topics for which I need someone to explain me...' (FG2L2_Camila). Furthermore, Diana and Sonia commented that the teacher should tell them which pages to use because they did not know Internet pages to learn English (FG1L4_Diana; FG1L4_Sonia). Surprisingly, the four remaining students who participated in that group interview agreed with them.

This finding demonstrates that some students expect to be taught in a traditional fashion, contradicting the principles of constructivism in which students have an active role and are responsible for their own learning.

5.3 People's opinions that influence the use of ICTs in the area of EFL

In focus groups, participant EFL teachers and students explained in what ways people who are important for them influence their decision to use ICTs. Their commentaries were analysed and categorised as a) the university administration and b) people who influence my use of ICTs. The following subsections describe each of them.

5.3.1.1 The university administration's opinion

In group discussions, all the teachers agreed about the importance of the university administration's knowledge regarding their use of ICTs to teach English. They said that they had been informed about the use of technology to teach English at the moment they were hired by the university. Moreover, they said that it was very important that the university administration know they were willing to be up-to-date (FG1TS_Alberto; FG1TS_Nora; FG2TS_Daniel).

Some comments that emerged during meetings reflected the teachers and students' perceptions of the mandatory nature of ICTs at the university. Students said that, when they entered the university, they were informed about the use of technology in all the subjects. Hence, they knew that the use of ICTs was mandatory since the beginning. However, the teachers' points of view regarding the obligatoriness of ICTs were very different. They unanimously admitted that although the university provided them with new technologies, they were not fundamental for students to learn English. Sara said that her students' language needs were more important to her, and sometimes, she stopped using technology and brought printables to the class to work with them (FG2TS_Sara). Lisa commented:

> If some students tell me they would rather use a textbook instead of computers, I cannot do much to help them because teachers don't have any decision-making power in the university. However, by using ICTs, I am doing what the university and the students expect from me. (FG2TS_Lisa)

Like Lisa's commentary, the opinions of some teachers denoted a bit of resentment towards the university for not taking them into account when it decided to establish the use of ICTs to teach EFL. For example, Jose said that 'the university used to ask our opinions when a new textbook was going to be adopted, we reviewed the contents of several books and recommended one... but in the case of Smrt we were never consulted' (FG2TS_Jose).

5.3.1.2 People who influence my use of ICTs

The majority of students agreed that people's opinions about whether or not they should use ICTs to learn English were not important since that was a personal decision; regardless, they said that since their use was mandatory at the university, they had no choice. They mentioned that the

negative comments about using technology to learn English came mainly from members of their families. For example, Olivier said:

> I only watch TV in English. My family criticises me for doing that, but I don't care because I know that I will learn English faster. (FG1L2_Olivier)

However, the majority of students responded that what their teachers think of their use of ICTs to learn English was important for them (FG1L2_Alex; FG2L2_Camila; FG2L4_Servando; FG1L4_Rosa). For example, Nancy said **'**The teacher is the only person that matters to me what he thinks because he wants us to learn English using ICTs to learn it faster and easier' (FG2L4_Nancy). Servando added 'I'm studying Geoscience Engineering, and teachers are always reminding us of the importance of learning English for our major' (FG2L4_Servando).

Interestingly, the majority of teachers regarded as important what their students could think about whether or not they should use ICTs to teach English. These thoughts were observed in comments like 'it matters to me that my students know that I am skilful to handle the technology I am teaching with' (FG2TS_Jose). Most teachers agreed with Jose by saying that they would not like their students to see them as old-fashioned teachers who did not want to use technology (FG2TS_Daniel; FG2TS_Mariela; FG2TS_Manuel). In addition, they stated that what their students could think about the way they used ICTs put some pressure on them, and it made them try to keep up to date on the use of technology (FG1TS_Graciela; FG1TS_Amalia; FG2TS_Jose; FG2TS_Mariela).

5.4 The ability to use ICTs in the teaching and learning of EFL

During group discussions, participant teachers and students declared to have the ability needed to use ICTs for the teaching and learning of EFL. Their positive commentaries suggested that they are resourceful and supportive when they use new technologies for language teaching and learning. Teachers' opinions showed that they perceived themselves sufficiently capable of overcoming the problems they face when using technology. Furthermore, all of them declared that the Smrt English course is user-friendly, and they have received adequate training to meet what the course demands concerning the use of ICTs.

To overcome the problems they face when using ICTs, some teachers commented that they watch tutorials on YouTube or ask a colleague for support (FG2TS_Manuel; FG1TS_Graciela). Manuel widely explained what he does to become skilful in the use of ICTs to teach English:

> When I don't know how to use an App I use ICTs to learn… I get supported by the same ICTs. For example, when I did not know how to use *Google Docs*, I watched tutorials on *YouTube* and I learned step-by-step how to use this application. (FG2TS_Manuel)

The teachers' declarations reflected their openness to learning to use new technologies. Linda mentioned that when she is not familiar with new software, she tries to learn how to use it and adapt it to English teaching (FG2TS_Linda). Teachers also said that they ask for support from their colleagues. For example, Ildefonso pointed out that teachers generally were very generous and taught him how to do certain things with ICTs, or they shared the online activities they used in their classes with him (FG1TS_Ildefonso).

Similar to teachers, students stated that they were capable enough to use ICTs to learn English. They said that they used computers from a young age; therefore, using ICTs resulted familiar for them. As well, everyone commented that the Smrt course was easy to understand because its instructions were clear. The researcher asked Mara if she found it difficult to combine English learning and the use of electronic devices, and she responded 'On the contrary, it is easier for me because… I can make connections between image and meaning' (FG2L2_Mara). All students agreed with Rosa when she said she would like that they used more ICTs in the classroom like tablets or smartphones, and not only computers. She said 'I think we must keep up with technology and with online resources too' (FG1L4_Rosa).

The transferability of skills relative to the use of ICTs in language learning to other areas of language and other subjects was an unexpected theme that emerged from the data. For instance, Roxana said that 'writing dialogues on the computer helps me learn to form sentences correctly, and when the teacher asks me a question, it is easier for me to think about how to answer' (FG2L2_Roxana).

Regarding the transferability of skills to other subjects, Eduardo commented: 'In this semester, I learned to use the presentation software *Prezi* in my English class, and I have used it in other subjects as well' (FG1L4_Eduardo).

On the other hand, although the majority of students commented they were competent enough to use ICTs to learn English, some students stated that they needed to be trained on the use of specific ICTs befor working with them (FG1L4_Anette; FG1L4_Maria; FG2L4_Iris). Moreover, some students said that sometimes using ICTs was difficult for them. For example, Elsa said:

> I am not very good with computers. I do use them, but sometimes I get lost…it's not clear to me what I have to do because the information is in English, and if the teacher goes very quickly, I am left behind and don't know what to do. (FG1L2_Elsa)

Another student, Nancy, said that although she considered she had the abilities needed to use ICTs, she had found it extremely difficult to make a video. She said she had never edited videos

before, and because instructions were in English, the whole experience was very stressing for her (FG2L4_Nancy). Furthermore, one student, Roxana, openly said that using ICTs was easy for her, but she did not like to be in front of a computer all the time to learn English (FG2L2_Roxana).

In sum, most teachers and students considered they have the necessary skills to teach and learn English with technology. They declared that ICTs are essential for language learning. However, their opinions unveiled the existence of some issues related to the use of technology such as obligatoriness of its use, resentment as a result of the imposition of ICTs, and feelings of isolation from the decisions made by the university administration.

Regarding the students, their comments revealed that they find it difficult to understand instructions in English as well as learning to use new software because their vocabulary is still limited. As for the fourth-level students, their comments showed that challenging activities that imply the use of new software make them feel anxious. Moreover, they would like to use other electronic devices in the classroom and not only computers.

5.5 Organisational and technical infrastructure

The EFL teachers and students' opinions about the organisational and technical infrastructure offered by the university to support the use of ICTs were very similar. For this reason, their contributions to the group discussions are presented together in this subsection.

The teachers and students' perceptions of the assistance provided by the institution for the proper use of technology in the teaching and learning of EFL were divided into three categories: a) Internet connectivity, b) technical support, and c) classroom arrangement.

5.5.1.1 Internet connectivity

Regarding the reliability of the internet connection, responses varied among teachers. For some, the Internet connection was better than years ago and hardly ever failed. Conversely, some teachers commented that they continued to have problems with the Internet in the current semester, but only for short periods. In this respect, Daniel said:

> A reliable Internet connection is essential for the use of ICTs and optimal performance of teaching and learning activities. This small problem has had a big impact on teachers and students' daily activities. (FG2TS_Daniel)

Concerning the students' opinions, all second-level students commented that the university widely supported their learning of English by providing them with well-equipped classrooms, Internet connection, and technical support. On the other hand, the fourth-level students' opinions about the Internet connectivity coincided with the ones expressed by the teachers about constant Internet failures that cause interruptions and discomfort. Coincidentally, some students said that the speed of the Internet was very slow, and some programs were downloaded too slowly (FG14L_Sonia; FG14L_Anette; FG14L_Eduardo; FG14L_Maria).

5.5.1.2 Technical support

Concerning the technical support provided by the university, teachers' responses were inconsistent. Some teachers said that the technical support staff responded fast when they reported a failure with the equipment or the Internet (FG1TS_Ildefonso; FG1TS_Graciela; FG2TS_ Mariela; FG1TS_Linda). Conversely, some teachers argued that several computers were not working in their classrooms even though they had reported them several times to the technical department. For this reason, some students had to bring their laptops, tablets, or smartphones to class. However, when students did not bring their electronic devices, the teacher asked another student to share the computer with him or her, causing discomfort to both students (FG1TS_Nora; FG2TS_Manuel).

Students' commentaries confirmed what the teachers said about the lack of technical assistance. For example, Rocio and Iris said, 'A whole row of computers are not working in the classroom this semester. Even though the teacher and the students reported them, no one has come to repair them' (FG2L4_Rocio; FG2L4_Iris).

Despite the comments from some teachers and students about the lack of technical support, the positive comments related to the work performed by the support staff outnumbered the negative ones. Teachers and students' recognised that most computers were working properly in the classrooms. Their declarations showed that they are aware of the improvements achieved in the response time of the support department to solve the equipment failures.

5.5.1.3 Classroom arrangement

Teachers and students' comments concerning the classrooms were very positive. Most teachers said that the classrooms were very comfortable. They explained that since there was a maximum of 24 students per classroom, they did not feel crowded (FG1TS_Nora; FG1TS_Ildefonso; FG1TS_Graciela). Additionally, students gave great importance to the fact that each classroom had a smart TV and air conditioning (FG2L4_Juan; FG14L_Eduardo; FG14L_Maria; FG14L_Rosa).

Conversely, teachers and students stated that one aspect that made them feel a little uncomfortable in the classrooms is the arrangement of the furniture and computer equipment. Teachers Mela and Mariela said that they would like to have more space to apply interactive activities in which students walk around the classroom, but there was not enough space because of the equipment (FG1TS_Mela; FG2TS_Mariela). Similarly, Juan, a fourth-level student, reported that 'the only inconvenient that I see is that computers are arranged in circles, and some students have to be twisted to be able to see when the teacher explains or projects something on the TV screen in the front, and it is very uncomfortable' (FG2L4_Juan).

These comments showed that the furniture and computer equipment arrangement in the classroom causes discomfort to some students and impedes the application of some activities that require physical movement.

5.6 Attitudes toward the use of ICTs in EFL

Most EFL teachers and second and fourth-level students showed positive attitudes towards the use of ICTs. Two main themes emerged from their comments such as a) affective feelings towards the use of ICTs, and b) perceived learning benefits.

5.6.1.1 Affective feelings towards the use of ICTs

All teachers declared that they felt very comfortable using ICTs in their teaching practice. They stated that ICTs were practical tools that facilitated English teaching and learning (FG1TS_Rina; FG1TS_Alberto; FG1TS_Nora). In this sense, Nora said:

> I like to use ICTs because they enhance my daily teaching. I make *PowerPoint* presentations, project videos, we play games, etc. When the students ask for a topic that wasn't planned for the class, I can find it in seconds on the Internet. (FG1TS_Nora)

Similar to teachers, the majority of students expressed positive comments regarding the use of ICTs to learn EFL. Everyone agreed that ICTs made them feel engaged with the class. Furthermore, using ICTs was fun and made them feel confident that they had understood the activity instructions (FG1L2_Alex; FG1L2_Vania; FG1L2_Olivier).

5.6.1.2 Perceived learning benefits

Teachers' discussions demonstrated that they were aware of the learning benefits ICTs offered to students. In this respect, most teachers said that they liked to work with technology because it facilitated their students' language learning. For example, Mariela said:

> I like it very much using technology because in Smrt we can find many resources that facilitate our teaching. I use images to teach vocabulary. I also use *quizlets*, which are quick exams that provide students with automated feedback. I also use games like *Jeopardy* to reinforce grammar and vocabulary. (FG2TS_Mariela)

Teachers commented that computers and the Internet are essential tools in modern education. They highlighted that the great variety of teaching materials they could find on the Internet allowed them to select more engaging and motivating activities for their students. Ildefonso said that if students were happy with the use of new technologies, they would be more willing to learn (FG1TS_Ildefonso).

From the students' perspective, the majority claimed that the use of ICTs was beneficial for language learning. Some students said they felt well using ICTs because they made it easier for them to learn English in many ways. For example, they could review the exercises several times before class (FG1L2_Elsa; FG1L2_Olivier; FG2L2_Mara; FG1L4_Diana). Roxana added, 'ICTs help me learn English because most of my social networks are in English, and they help me reinforce what I learned in class' (FG2L2_Roxana). Raul said that he felt he learned better using ICTs, maybe because of the dynamics of the games from the Internet or the apps (FGL2_Raul).

Students' commentaries showed that they consider the class more interesting and interactive when they use ICTs. They stated that the University of Pitic had a better educational system because it incorporates the use of technology. However, they recognised that when teachers did not use technology to the fullest, the classes turned boring. Moreover, they argued that the wide variety of activities from the Internet allowed them to satisfy their learning styles. About this, Sonia commented that she was happy using ICTs because she was a visual student, and ICTs could meet her learning style (FG1L4_Sonia). They declared they were modern students open to technological changes.

On the other hand, Nancy and Roxana disagreed with their peers and said that even though they liked using ICTs to learn English, they preferred the old way. They explained that they felt they learned more using the textbook and a notebook (FG2L4_Nancy; FG2L2_Roxana).

Different from teachers and students' positive opinions, these two students explained they preferred not using ICTs to learn English. Their commentaries reflected that they are used to

studying English with traditional methods, which consist of using the textbook, a workbook, and minimum use of technology.

5.7 Actual use of ICTs

This section presents information related to teachers and students' actual use of ICTs in the teaching and learning of EFL. To have a better understanding of how technology is used both inside the classroom and outside it, the results of focus group interviews and classroom observations are presented together. The similarities and mismatches between the information reported by the participants and the use of technology observed are explained (see the Observation Report in Appendix Q).

5.7.1 EFL teachers' actual use of ICTs

During group discussions, EFL teachers were enthusiastic when discussing the main uses they gave to ICTs in in-class and out-of-class activities. Some provided a detailed explanation about how they used technology and why they put more emphasis on some skills more than others, while others explained the main uses they gave to ICTs in a general way. Their comments generated three main themes: a) The use of ICTs to introduce the main topic, b) ICTs as a supplement of the Smrt course and c) the combination of the Smrt course and traditional methods.

5.7.1.1 The use of ICTs to introduce the main topic

Teachers' commentaries demonstrated that some of them use ICTs to introduce the main topic of the lesson, and then, they continue to teach using the Smrt contents. For example, Daniel commented that when he begins a new lesson, he projects a *PowerPoint* presentation containing the new grammar formula, images, and examples of sentences. Also, he said he uses Internet videos to expand his explanation (FG2TS_Daniel). Similarly, Mariela commented that, at the beginning of a lesson, she uses images related to the main topic. She said she integrated a variety of resources such as cartoons, a landscape, news, and videos to the topic of the class (FG2TS_Mariela). Likewise, Linda explained that she helped her students learn the new vocabulary of the lesson by applying the segmentation technique, in which students separate the sounds of the words. She asked them to practice pronunciation using exercises from Internet sites as *Epic Phonics* (FG2TS_Linda). Alicia commented:

> At the beginning of a lesson, I always search for information on the Internet that helps students engage in the class. For example, I use *Google Maps* and ask the students, how do you get to this place? I do this with topics such as 'Giving Directions' to promote their participation. (FG1TS_Alicia)

According to the previous comments made by the teachers in group interviews, the use of a variety of ICTs to introduce the main topic of the lesson was observed in three of the classrooms visited, and they then continued to teach with the Smrt course. Two examples of classroom observations are presented as follows:

In observation 1, teacher Manuel used the Internet game *Spin off the Wheel* during the warm-up activity to ask questions of the previous lesson to the fourth-level students. Then, he used an Internet video to introduce the grammar topic about modal auxiliary verbs. The teacher asked questions and clarified the students' doubts. In another activity, the teacher used the online game *Kahoot!* to test the students' knowledge on the topic. When the students answered incorrectly, the teacher explained the grammar point again. After these activities, he continued to teach modal auxiliary verbs using the exercises of the Smrt course. In this class, ICTs were used to foster teacher-student interaction. In fact, the students were not asked to work in pairs or teams.

Observation 2 represents another example of how teachers use ICTs at the beginning of a lesson, in this case, to get students familiar with useful vocabulary. Teacher Mela explained the instructions of the activity to the fourth-level students. Students worked in teams searching for the meaning of new vocabulary words in online dictionaries. Each student had to write a sentence that included the words assigned by the teacher. Then, the teacher read aloud a sentence and asked the teams to guess which team had written it. When the activity finished, the teacher asked the students to continue to work in the *Language in Use section* of Smrt. In this class, ICTs were mainly used to promote student-student and teacher-student interactions.

5.7.1.2 ICTs as a supplement of the Smrt course

The use of ICTs to supplement the contents of Smrt arose in the group discussions. The use of the free educational platform *Schoology* was found to be very popular among the teachers, who looked for ways to communicate with their students other than the Gmail. For example, Rina said that she mainly used the audios and videos of Smrt to help the students develop listening skills, vocabulary, and pronunciation. Moreover, she used the platform *Schoology* because it helped her save time since students could take the exams online and receive their scores automatically. The platform also allowed her to take attendance, send and receive messages, and organise her documents (FG1TS_Rina). Mela added:

> I use ICTs in many ways. I use videos to reinforce and expand the explanation of the topic seen in Smrt, or I play a video and then, I ask questions related to it. I project images from the Internet while I am explaining to facilitate the students' understanding. I use online dictionaries and urban dictionaries because they like to learn the slang that is spoken in the United States. I also use platform *Schoology*. The students upload assignments there, I send them messages through the platform, and they send me messages too, either about the class or personal messages. I also like to upload songs and have them listening, singing, and reading the lyrics; I also upload stories to the platform, etc. (FG1TS_Mela)

Graciela explained that the Smrt course facilitated the teaching of English because it included many activities; therefore, she could start with a listening activity, and then continue with grammar or reading. She pointed out that she usually applied extra activities taken from the Internet like online games because they were fun and to reinforce grammar and vocabulary (FG1TS_Graciela). Additionally, Amalia commented about two online resources she used in combination with the Smrt contents:

> I use Smrt to teach the four areas of English. I also use online resources linked to Smrt. For example, I use the platform *quizlet*, where the students can listen to the sound of a word, its definition, do exercises and receive immediate feedback. For beginners, there is another platform called *Spelling City* that is very similar to *quizlet*. (FG1TS_Amalia)

Some classrooms observations confirmed the declarations made by some teachers about the use of the Smrt course and other technologies to complement and facilitate the students learning. For example, in observation 3, teacher Alicia taught the different ways to express the future tense in the English language to second-level students. The teacher used the content of the Grammar section of Smrt to explain and provide examples. Students made a copy of the document and did some exercises by themselves. After some minutes, they shared with the teacher a copy of their exercises, and she projected the correct responses on the TV screen to check them one by one. Later, she used the online game *Kahoot!* for students continued to practise the future tense. Teacher Alicia directed the exercises, and the students answered on their computers. In this case, ICTs were used to promote teacher-student interaction.

In observation 8, the same pattern of use of ICTs was seen. Observation 8, allowed to see the same pattern of use of ICTs. Teacher Rina asked for her second-level students to open the file of homework stored in their *Google Drive*. Then, she projected the activity answers on the TV screen and explained the use of '*There is/There are'* again. Once they finished checking the assignment, the teacher projected a list of links to grammar exercises and pointed out which ones they should practice for the exam. Students spent the rest of the class doing grammar exercises individually, and the teacher monitored their work, walking around the classroom providing help.

5.7.1.3 The combination of the Smrt course and traditional methods

During the discussions, some teachers commented on the importance of combining ICTs with hand-made materials to keep a balance between technology and traditional methods in their teaching practice (FG1TS_Alberto; FG1TS_Nora; FG1TS_Ildefonso; FG1TS_Sara). Teachers explained why they considered that mixing ICTs and traditional teaching was better for their teaching practice. For example, Alberto said that he asked for students to work on the computer and in their notebooks because some of them did not have a computer or Internet access at home (FG1TS_Alberto). Sara added that, for her, the use of ICTs depended on the level of difficulty of the topic. She said that if she considered that the grammar point could be complicated or confusing, she used the whiteboard to explain and asked for students to work on their notebooks (FG1TS_Sara).

Regarding this, in observation 7, teacher Nora used the Smrt course and traditional teaching methods to fourth-level students. She explained the grammar formula of the present perfect tense and question formation with the auxiliary verbs 'have' and 'will' as well as the verb 'to be'. The teacher drew a timeline on the whiteboard and explained the past, present, and future tense. After that, she asked students to write in their notebooks five affirmative sentences, five negatives, and 5 question sentences using the auxiliary verbs seen in class. Students worked in pairs and individually during the activity, and she monitored their work providing assistance. Then, she called some students to write a sentence and a question on the whiteboard. If students made a mistake, the teacher corrected it and explained for the whole class one more time. In short, this class resembled the traditional teaching methods in that the students were quiet, their participation was controlled by the teacher, and the main didactic material used by the students was the notebook.

In general, in both the focus group interviews and the classroom observations, the teaching of grammar and vocabulary was consistent. During the discussions, the majority of teachers regarded as 'very important' the use of ICTs to teach grammar and vocabulary. They firmly agreed that ICTs were essential not only to facilitate grammar learning but to make it more fun. Hence, comments like the following were very common: 'I use ICTs mainly to teach grammar. For example, I explain the main topic, and then, I use ICTs to have my students working individually…' (FG2TS_Jose), or '… I start the class with a warm-up activity. Then, I introduce the lesson topic and get them to do grammar exercises' (FG1TS_Ildefonso).

Group interviews provided evidence that most teachers used ICTs mainly to teach grammar and vocabulary, followed by pronunciation, and listening and reading skills. For instance, Jose said 'To teach vocabulary and pronunciation, the first assignment I give to my students is a list of words,

and they have to investigate their meaning and their pronunciation' (FG2TS_Jose). Only two teachers mentioned that they used ICTs to develop writing and speaking skills. For example, Amalia and Manuel said that they used *Google Docs* to share documents with their students to have them work on writing activities in which they could make corrections at the moment and provide them with some guidance (FG1TS_Amalia; FG2TS_Manuel). Manuel added that to develop the students' speaking skills, he asked his students to watch videos from the Cafe section of Smrt as homework, and during class, they responded orally to some questions or gave their opinion of the video (FG2TS_Manuel). On the other hand, most EFL teachers commented that they put less emphasis on the use of ICTs to develop writing and speaking skills. Some teachers said their students only practised writing or speaking when they were working on grammar or reading exercises (FG1TS_Alicia; FG1TS_Rina; FG1TS_Mela), while others openly stated that they did not use ICTs to develop the writing and speaking skills (FG1TS_Graciela; FG1TS_Ildefonso; FG2TS_Jose; FG2TS_Mariela).

Classroom observations did not provide evidence on the use of some ICTs mentioned by the teachers in focus groups such as *Google Docs* in collaborative activities, the use of students' smartphones to record conversations and send messages, or projection of videos made by the students among others. However, students' comments about how they used ICTs to learn EFL supplied evidence of the utilisation of these tools.

5.7.2 EFL students' actual use of ICTs

Participant students declared using ICTs primarily to work with the Smrt course as a basis to develop the four language skills and sub-skills. The main uses of ICTs they described, in a certain way, reflect those reported by the teachers. Nonetheless, their commentaries about the technologies they use in out-of-class activities demonstrated more clearly how they use of ICTs and the areas of language they seek to develop with the use of technology. Two themes emerged from their commentaries: a) the use of ICTs in self-study hours, and b) the use of ICTs in group assignments and collaborative projects.

Students explained that they use ICTs in their self-study hours for several reasons. Sometimes, they simply wanted to review the topics seen in class. As Vania pointed out, 'When I am at home, I open Smrt and study what the teacher taught in class in my free time, especially grammar and listening activities' (FG1L2_Vania). Several students explained that in out-of-class activities, they

used ICTs to search for information that helped them understand better the topic, watch videos, or do homework. Some students stated that they dedicated some time to study to reinforce the themes they did not fully understand in the classroom. For example, Roxana said, 'At home, I use ICTs to search for more information on the Internet about something I didn't understand very well in class and to watch videos to improve listening' (FG2L2_Roxana). Most students declared that in their free time, they used the online resources linked to Smrt and other websites to learn English. Students' declarations showed they are aware they can become independent learners with the use of technology. In this regard, Diana said:

> In my opinion, ICTs help me learn English by myself. When I watch a tutorial or navigate on the web I learn English, but that's an extra, and it depends on each student. Then, in class, I can understand what the teacher says because I have already learned some vocabulary on the Internet. (FG1L4_Diana)

In general, the analysis of the discussions of second- and fourth-level students revealed their priorities about the use of technology to develop the different areas of language during self-study hours. The majority of second-level students considered very important the use of ICTs to learn vocabulary and develop their listening skills. On the other hand, the comments of the fourth-level students concerning the use of ICTs showed that they use them in a more integrated way. For example, Iris and Diana said they mainly used ICTs to develop their listening and reading skills, and that helped them learn grammar more easily (FG2L4_Iris; FG1L4_Diana). Eduardo clearly described the areas of language in which he primarily used ICTs as following:

> I use ICTs to search for information such as readings in English... I see a lot of videos in English every day...and I can say that my understanding of English is high. I also use ICTs to find the meaning of new words [in online dictionaries] and for grammar exercises. (FG1L4_Eduardo)

Concerning students' discussions about the use of ICTs in teamwork assignments and collaborative projects, laptops and smartphones stood out as the electronic devices most commonly used by students in out-of-class activities. Although the order may vary, their comments suggested that depending on the type of assignment or project, they perform the following actions: a) search for information on the Internet, b) open their *Google* account, c) share documents through *Google Drive*, d) communicate with each other through *Gmail* or using instant messaging applications such as *WhatsApp* and *Facebook Messenger*, and e) submit the assignment to the teacher's *Gmail,* to the *Schoology* platform, or present it in the classroom. For example, Raul explained how he and his peers used ICTs in a teamwork assignment that consisted of creating a *PowerPoint* presentation:

> We worked in teams to create a *PowerPoint* presentation entitled Organic Food. I was not familiar with this topic. The first thing I did was to read about it on the Internet. I used *Google Translator* and an online dictionary to know the meaning of the words I did not

> know and their pronunciation. We shared a document through *Google Drive* and everybody included a paragraph. We decided the sequence and made corrections. We communicated through *WhatsApp* and *Gmail*. We sent the presentation to the teacher for her to organise the turns to present. (G2L2_Raul)

Similarly, Heriberto explained how he and his peers used technology to work in a final project, in which they had to make a video:

> As a final project, we made a video about organizing a party. First, we wrote the dialogue by sharing our part in a document through *Google Drive* to work on the same document. We used online dictionaries and *Google Translator* to understand the meaning and pronunciation of some words. We rehearsed and recorded the video in a *smartphone* many times because some words were difficult to pronounce. When we finished it, we used the application *Crop & Trim Videos* to trim some segments we didn't like, change the background colour, and amplified the image for it to fit better in the computer screen. (FG2L2_Heriberto)

Students' arguments demonstrated how they deal with challenging activities that involve writing and speaking, in terms of their engagement in the activity and the degree of agency in the use of ICTs. Their discussions demonstrated their application of learning strategies such as word repetition, spelling correction, and memorization to be able to write and speak correctly. Students' degree of agency in the use of ICTs was visible in the way they stated they apply different technologies to search for information, share documents, and communicate with each other. Moreover, the fact that they make their own decisions when using technology was evident. For example, in the case of the students who made a video, they commented that editing was not part of the instructions of the activity.

Conversely, the majority of students expressed that although these types of activities were fun, they were also very difficult and stressful for them. Their comments revealed that the little emphasis put on applying activities that promote the development of productive skills may cause unnecessary stress for them and affect their performance.

5.8 Intention to continue to use ICTs in the teaching and learning of EFL

Teachers and students declared that they were willing to continue using ICTs in the future. They explained that technology offers a lot of possibilities and makes teaching more practical. For example, they declared that online tutorials are very useful to enrich the explanation of a given topic, computer games are excellent tools to reinforce grammar, and videos are very useful to develop the listening skills and provide students with authentic material. Teachers also mentioned that using ICTs makes their teaching more practical because they helped them to save

time and finish the lesson as planned. For instance, Daniel said 'Before technology, we used flashcards to teach vocabulary, and if we didn't have the image we needed for a word, we drew on the whiteboard wasting valuable time' (FG2TS_Daniel). Amalia added 'I used to carry a big hard plastic box with scissors, colour pencils, toys, colouring pages among other school supplies to work in class, but I do not need to do that anymore' (FG1TS_Amalia).

Teachers also expressed their desire for students to know that they are up to date in the use of ICTs because, as they said, students want to do everything on the Internet. For example, Linda said, 'There will be new tools in the future and we, as English teachers, have to use them' (FG2TS_Linda). Furthermore, some teachers stated they work for other schools where the classrooms were not equipped with technology, or where they only had a CPU and projector, but even then they tried to integrate ICTs as much as possible in their English classes (FG1TS_Graciela; FG1TS_Ildefonso; FG1TS_Mela; FG1TS_Alberto; FG2TS_Manuel). In this regard Ildefonso said:

> In another school where I work, there is no technology in the classroom, but I take my laptop to class to show images. We practice grammar playing '*Kahoot!*' with our phones, and I keep in touch with the students through *Facebook* and *WhatsApp*. I use technology as much as possible to make the class more attractive and fun for students. (FG1TS_Ildefonso)

On the other hand, other teachers commented to work for private schools where the educational environment was completely different since, in these schools, ICTs were part of students' learning tools. For instance, Amalia said that, in the secondary school where she taught English, students had to bring their own tablets as part of their supplies (FG1TS_Amalia). In the same vein, Linda said she worked for a private university where she used the educational platform Blackboard in all subjects, including English (FG2TS_Linda). These teachers affirmed that, for them, it would be almost impossible to think of not using ICTs in the future.

Concerning the second- and fourth-level students, just like the teachers, they stated that they would continue to use ICTs to learn English. Most of them commented that they wanted to reinforce the English they had already learned. Likewise, they recognised that English was essential for their majors and ICTs helped them understand the reading materials. They highlighted that important books were online, and online courses related to their majors were in English too (FG1L2_Alex; FG1L2_Tino; FG2L2_Raul; FG1L4_Anette; FG2L4_Rocio; FG1L4_Maria). Moreover, they said that they wanted to continue to study English in the future and ICTs made learning easier (FG1L2_Tino; FG1L2_Vania; FG2L2_Heriberto; FG1L4_Diana; FG1L4_Maria; FG2L4_Juan).

There were differences between the participant students' commentaries. For example, only the fourth-level students commented that learning English with technology was important for their

future jobs. Perhaps this is because most fourth-level students are about to finish their majors, and this may influence their interests. Their comments suggested that they are willing to continue to study English through ICTs because, as future professionals, they are aware that new technologies facilitate language learning. Similarly, everyone agreed that, in some cases, their hiring depended on how well they spoke English. Some students affirmed that speaking English was essential for their majors. For example, Maria said, 'I will continue to use ICTs to learn English when I finish all the levels of Smrt because I am studying Tourism, and in this area, the speaking of the English language is essential' (FG1L4_Maria).

5.9 Barriers encountered by EFL teachers and students when using ICTs

Participant teachers and students commented on the barriers they encounter when using ICTs within the blended learning modality to teach and learn English. The nine barriers identified are described as follows:

a) The lack of students' technology literacy

Teachers stated that some students do not know how to use ICTs for educational purposes. Among the problems they mentioned are that some students do not know how to search for information on the Internet and/or are not familiar with educational platforms. Teachers said that perhaps these students do not have Internet at home or maybe they did not use ICTs in their former schools. Therefore, they are not familiar with *Google Drive* or Internet pages. They commented that they have to stop teaching to help these students, so they are not left behind (FG1TS_Alberto; FG2TS_Linda; FG2TS_Manuel).

b) ICTs are great distractors for students

Teachers and students agreed that ICTs are excellent tools for language learning, but also great distractors. Teachers commented that the university had blocked some pages like *YouTube* and *Facebook* to avoid bandwidth saturation. However, students continued to visit other pages during class, which prevented them from understanding the teacher's explanation and instructions. About this, teacher Ildefonso said, 'Students visit other pages. For example, sports pages' (FG1TS_Ildefonso). Another problem mentioned by the teachers is that students see the English classrooms as computer labs, and get distracted doing homework of other subjects (FG1TS_ Graciela).

Concerning students, they recognised that when they are studying English in the classroom or at home, they got easily distracted by *WhatsApp* messages, *Facebook*, or other social networks. For example, Sonia said that 'I get distracted by advertisements from other pages... you know, something pops up offering discounts...' (FG1L4_Sonia).

Class observations provided little evidence of this barrier. From the eight classrooms visited, it was detected only in one of them as a male student who was playing a computer game not related to language learning, while the rest of his classmates were working on different activities of the class.

c) The lack of ongoing training

Referring to teacher training in the use of ICTs, some teachers mentioned that they would like to receive continuous training. They said that since the university adopted the Smrt English course, they had only attended training courses on the use of ICTs once or twice. Amalia commented, 'Last year, we had a two-hour course with people from Smrt. They showed us different applications we could use in class, but it was more like an informative meeting…' (FG1TS_Amalia). The teachers agreed on the importance of receiving training through longer-lasting workshops where they could have the opportunity to practice and clarify doubts.

d) Slow speed and connection failures of the Internet

Some teachers commented that the Internet connection was better than years before. Notwithstanding, teachers and students expressed that the slow Internet speed continues to be a problem. They explained that sometimes it takes a lot of time to load videos or pages, causing delays and interrupting the class flow. Additionally, teachers and students affirmed that the Internet does not fail very often. However, students commented that when it happens, they cannot do anything because the whole course is online.

e) The lack of Internet connection or electronic devices at home

Teachers commented that the lack of access to technological resources was an important barrier that prevented students from becoming skilled in the use of technology. They said that this could be the cause of the common practice of not doing homework assignments on the weekend, which was customary among students who lived in small cities nearby the university. Teachers argued that perhaps this occurred because of the lack of Internet connection where students lived, or students were not used to working with ICTs, or they did not own a computer. Jose said:

> They finish school and go to their cities by the weekend, and some of them don't have a computer at home, or there is no Internet where they live. I am talking about very small cities or very small rural areas. (FG2TS_Jose)

Some teachers disagreed with Jose. They asserted that students knew how to use technology, but only for what they liked. Therefore, they found it difficult or less interesting to use technology for academic purposes. Amalia agreed with Jose's opinion and affirmed, 'some students don't have Internet at home and can only access to the Internet on the university campus…' (FG1TS_Amalia). She commented that this was a problem because when she asked students to participate in a forum, watch a video, or any other online activity, students could not do it.

As in teachers' declarations, some students commented they did not have Internet at home. In this regard, Rosa explained that she is a student who works to pay her expenses, and she cannot afford to pay the Internet service. She commented that not having Internet at home is an important barrier for her since she has to use the computers of the computer lab to do assignments, but she depends on their availability (FG1L4_Rosa).

f) The combination of ICTs and English learning

All teachers agreed with Alberto's comment, 'How ironic, but one barrier I have found is the teaching of English in combination with the use of ICTs. Apps and websites are in English, and students get lost trying to understand instructions' (FG1TS_Alberto). Teachers explained they used different Internet pages to reinforce what they taught in class, but since these websites were in English, some students found it difficult to understand, especially at the beginning of the semester.

Similarly, some students' comments coincided with the ones made by teachers about it being difficult for them to learn English with technology, particularly, to those from the first levels. In this regard, second-level students said that due to their English not being very good yet, they found it difficult to understand the explanations and follow instructions because the Smrt course and Internet pages are in English. For example, Camila said, 'Sometimes, I do not know which pages to search for to study English, and when I find one, I have problems to understand because it is in English' (FG2L2_Camila). Jessica described why it is difficult for her to study English using ICTs:

> My English is not very good. I took English in secondary and high school, but it was too basic. I need a lot of support to use ICTs during class, and with homework and to do the final project. (FG2L2_Jessica)

Heriberto and Jessica explained that they had many problems to do the final project last semester. It consisted of making an animated video using the platform *GoAnimate.* They said that even though the teacher explained and showed in class how to choose characters, change physical features, select different scenarios, write and record dialogues at the moment of doing it by themselves they had many doubts. Besides, the tutorial recommended by the teacher was in English, which made it more difficult for them to understand instructions. They said they asked for help from their peers to be able to finish the project (FG2L2_Heriberto; FG2L2_Jessica).

g) *Computer equipment failures*

Referring to this barrier, second-level students said that when computers failed they simply could not do anything (FG1L2_Olivier; FG2L2_Raul; FG2L2_Mara). Tino explained, 'we must upload everything we do on platforms, I mean, English homework and assignments from other subjects' (FG1L2_Tino). Also, students from the fourth level commented that in their classroom four computers were not working. They said that the teacher had sent a report to the support department at the beginning of the semester, but they were still unrepaired (FG2L4_Nancy; FG2L4_Rocio; FG2L4_Iris).

In one of the classrooms visited, this problem was noticed. In teacher Ricardo's classroom, three computers did not work. The teacher allowed a student to work on his computer and he used his own laptop to teach the class. Another student had brought her own laptop, and the other one was using his smartphone. There was a notorious discomfort in the teacher and the students. Additionally, the teacher worked with his laptop on top of the CPU because he did not have an adequate place to put it.

h) *Students 'self-mute' in collaborative writing activities*

Unlike the barriers mentioned by teachers and second-level students, two fourth-level students, Juan and Diana, commented that similar to students who stop participating in a speaking activity and remain quiet, they tend to 'self-mute' in collaborative writing activities. About this, Juan explained why he stops participating in online collaborative writing activities:

> When I'm working with some peers using *Google Docs*, the teacher can see what we write and make corrections in the same document, and it's O. K., … but if the teacher corrects something I've written, I feel very ashamed and I can't continue writing because I am afraid to make more errors. (FG2L4_Juan)

i) Factors relative to the use of ICTs that emerged in discussions

Regarding additional barriers to the use of ICTs in the teaching and learning of EFL that emerged during discussions, teachers Graciela and Ildefonso commented that another factor could be the lack of economic support to educational institutions, due to the bad administration of the financial resources by the state government. Graciela said:

> The state government is focused exclusively on administrative affairs. The computing equipment only exists on paper, since the state government does not apply the resources it receives from the federation, or maybe it applies them in other areas, but not in education. (FG1TS_Graciela)

Ildefonso agreed with Graciela and said that he works for a public elementary school where 'conditions are deplorable' (FG1TS_Ildefonso). He said that the school lacked basic equipment such as comfortable chairs and air conditioning in the classrooms. Hence, the possibility of having an Internet connection was very remote when there were other priorities.

5.10 Chapter summary

This chapter has presented the research results of six focus group interviews and eight classroom observations. The findings from group interviews demonstrated that teachers and students are aware of the advantages of using ICTs in the teaching and learning of EFL, revealing three types of affordances offered by new technologies, namely language skill development affordances, social affordances, and educational affordances.

Participant teachers and students regarded ICTs as very useful to enhance the teaching and learning of the four language skills and sub-skills. However, the majority of teachers considered that ICTs were very useful to teach grammar and vocabulary, and did not consider ICTs useful to develop speaking and writing skills.

Classroom observations showed that the teachers mostly use the computer to teach with Smrt English course and extra activities from the Internet in their teaching practice, in which grammar and vocabulary stood out as the language sub-skills most frequently taught, against to the speaking and writing skills that were less emphasized by the teachers. While this situation may be originated for many reasons, one thing is certain: the English language is not being taught in an integrated way, and this situation requires the attention of the teachers and the institution.

In addition, findings revealed that ICTs facilitate the teacher-student interaction and student-student interaction; since they can communicate with each other in real-time using instant

messaging applications (synchronous communication), or at their own pace by sending emails or participating in forums (asynchronous communication).

In terms of the new teaching and learning environment, technology facilitates the building of learning communities, also known as communities of practice in the case of teachers. Through which they communicate and support each other when using new ICTs. Perhaps, for this reason, the majority of teachers and students share the sense that they are sufficiently capable to use technology, and have similar opinions about the assistance received from the support staff as they reported having problems with the Internet connection and computer failures.

Finally, this chapter explained in detail teachers and students' actual use and continuance intention to use of ICTs; as well as the barriers they encounter when using technology, those that are specific to the area of language learning, and others that emerged in group discussions and classroom observation.

Chapter 6 Discussion and conclusion

6.1 Introduction

This chapter discusses the research findings shown through surveys, focus groups, and classroom observations in light of the literature reviewed in Chapter 2. The study tested an adapted version of the UTAUT model to establish the extent to which factors considered as key predictors of acceptance and use of information technology (IT) contribute to EFL teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL. Furthermore, the study aimed to establish the EFL teachers and students' actual usage of ICTs to better understand the links between expectations of technology use and its actual use.

Section 6.2, discusses the findings of the factors included in the adapted version of the UTAUT model in terms of their contribution to EFL teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL. Section 6.3 presents the statistical relationship between attitudes, actual use, and intention to continue to use ICTs. Section 6.4 contains aspects related to the teachers and students' actual use of ICTs within the blended learning modality. Section 6.5 encompasses information about the barriers that hinder the teachers and students' use of ICTs. Section 6.6 contains the implications found in this study for the body of research, higher-level institutions, EFL teachers, and EFL students. Section 6.7 includes the limitations of the study and suggestions for future research. Lastly, section 6.8 presents the significance of the study.

6.2 Factors that contribute to EFL teachers and students' attitudes

Examining the factors that affect individuals' attitudes towards the use of ICTs for English language learning is critical, since these factors may influence technology usage and future use behaviour (Alzaidiyeen, 2017).

This section presents the findings that respond to research question 1:

- To what extent do the constructs included in the adapted version of the UTAUT model (performance expectancy, effort expectancy, social influence, ICT self-efficacy and facilitating conditions) contribute to EFL teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL?

Results of the descriptive statistical analysis carried out with data obtained from the ETQ and ESQ surveys (see Appendix L) demonstrated that both EFL teachers and students have positive

attitudes towards the use of ICTs in the teaching and learning of EFL. Indicating that, overall, teachers and students regard ICTs as useful in enhancing their teaching and learning practices as well as easy to use. Moreover, the majority of teachers and students do not feel pressured by the opinions of outsiders to the university about them using ICTs in language learning. On the contrary, they consider they are competent enough to use technology and are willing to continue to use it in the future. The above is consistent with numerous empirical studies whose findings have shown that teachers and students have positive attitudes towards the integration and use of ICTs in the teaching and learning of EFL (e.g., Liu, 2009; Chan Yuen *et al.*, 2011; Gilakjani and Leong, 2012; Srichanyachon, 2014; Dogan and Akbarov, 2016; Park and Jung, 2016; Alzahrani and O'Toole, 2017). As well, it suggests that despite the use of ICTs is obligatory in the university; this does not discourage teachers and students from using new technologies.

In addition, multiple linear regression analysis revealed that, in general, all the constructs of the UTAUT model have a positive association with teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL. These results agree with those obtained by Dwivedi *et al.* (2017) and Rana *et al.* (2017) in their studies about factors that influence individuals' attitudes towards the acceptance and use of technology. The meta-analysis conducted by Dwivedi *et al*. (2017) found that attitudes play a central role in the acceptance and use of technological innovations, since independent variables such as performance expectancy, effort expectancy, facilitating conditions, and social influence had an impact on the dependent variable, attitudes, which in turn influenced actual use.

The following subsections present detailed information on the contribution of the factors contained in the UTAUT model to EFL teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL; the interpretation of this information is based on the analysis of data carried out through quantitative and qualitative methods. In the case of multiple linear regression analysis, the contributions of the factors performance expectancy, effort expectancy, social influence, ICT self-efficacy and facilitating conditions are explained according to their level of association or correlation. The correlation coefficient (or '**r**') is commonly used to measure the strength of association between independent variables and the dependent variable (Field, 2009).The values of '**r**' range from -1 to 1. A value of ±.1 represents a small effect, ±.3 is a medium effect, and ±.5 is a large effect (Field, 2009). This study explained the strength of association using the correlation coefficient squared ($\mathbf{r^2}$), also known as the coefficient of determination, that measures the variability in one variable that is shared by the other.

The contribution of each factor to teachers and student's attitudes is explained as follows:

6.2.1 The contribution of performance expectancy to teachers and students' attitudes

The construct performance expectancy demonstrated to be the strongest in explaining the total variance of the aforementioned dependent variable in both groups. It had an r^2 = .527 in teachers' data and an r^2 = .549 in students' data. These results are in line with the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh *et al.,* 2003), which states that performance expectancy is the strongest predictor of intention and posterior use of technology, in both mandatory and voluntary settings. Findings are also consistent with the UTAUT, which claims that people are extrinsically motivated to use technology because of the benefits they can achieve, such as better job performance or promotions. This study found that teachers and students are extrinsically motivated to use ICTs since they are aware of the benefits they provide to enhance their teaching and learning practise. The results are similar to many studies where performance expectancy was the strongest predictor of technology uptake (e.g., Cakir and Solak, 2014; Fageeh, 2015; Tan, 2015; Lawrence, 2016; Ouedraogo, 2017). Besides, findings agree with a variety of general knowledge studies related to technology usage, in which performance expectancy, also conceived as perceived usefulness, had a significant impact on attitudes (e.g., Alshare and Lane, 2011; Pynoo *et al.*, 2011; Dwivedi *et al.*, 2017; Rana *et al.*, 2017). The significant relationship between performance expectancy and attitudes was echoed by teachers and students' opinions expressed in focus group interviews. Participant teachers and students recognised that the attributes of ICTs (Dwivedi *et al.*, 2017) are beneficial to improve their teaching and learning practices.

On the other hand, there were differences between teachers' opinions about the usefulness of ICTs in EFL. The majority of teachers considered ICTs useful to facilitate the teaching and learning of EFL. Their commentaries focused on the usefulness of the Smrt contents, its links to free online resources, and the many teaching materials availble on the Internet. Nevertheless, most teachers shared the belief that ICTs are less useful to develop speaking and writing skills. Concerning speaking skills, they pointed out that students are not competent enough to hold conversations. As for the use of ICTs to develop writing, the majority of teachers agreed that teaching this language skill would be very time-consuming since it demands a detailed revision from the teacher, and students do not have the competence to write long paragraphs. These findings are consistent with Li's (2013) declarations, who says that EFL teachers perceive writing as a complex task considered for a long time as an inefficient and time-consuming process (Li, 2013). In the same vein, Wolff (2000) states that if writing is an intricate procedure, it is even more difficult

when learning a foreign language. However, Wolff notes that language learning only occurs if the teaching of writing is included (Wolff, 2000).

Classroom observations showed that teachers mainly use the computer to teach with Smrt English course and extra activities from the Internet, in which grammar and vocabulary stood out as the language sub-skills most frequently taught. In comparison, speaking and writing skills were less emphasised by the teachers. The reason why teachers may be neglecting using ICTs to teach writing could be attributed to the time they would have to dedicate to provide support to the students in this type of activities. Alghasab (2016) points out that teachers' intervention is crucial to the success of this type of learning activity since their leadership promotes collaborative behaviours such as collective interest, peer correction, and students' engagement in collaborative dialogues. In this sense, Sandolo (2010) asserts that research time and energy could be better applied to understand teachers' desires and abilities to envision new uses for emerging technologies, for example, the use of blogs and instant messaging to develop writing skills.

However, the fact that teachers do not dedicate time to teach writing skills may be beyond their preferences and technical skills. In a study conducted by Peyton and Schaetzel (2016) in the United States, they found that writing has not been a focus in many ESL education programs. They pointed out that teachers receive limited professional development in this area and most of the writing consisted of narrative, note-taking, and grammar structures, primarily at lower-level writing. They recommend providing teachers with opportunities to participate in learning communities, professional development, and collaborations that have this emphasis. In the case of the present study, findings revealed the need for the teachers' professional development in this area of language.

Students' opinions coincided with the comments of the teachers about the helpfulness of ICTs to learn EFL. Interestingly, they did not mention that ICTs are useful to develop the writing skills, suggesting that they are not used to practice writing. Also, some students said that they would like the teacher to assign more activities in which they use ICTs, like Skype, to develop speaking skills. Some students commented that they use applications on their smartphones to practice this sub-skill. These comments reflect the little emphasis expressed by the teachers on the use of ICTs to develop oral abilities.

6.2.2 The contribution of effort expectancy to teachers and students' attitudes

The UTAUT declares that effort expectancy is the second predictor of intention and posterior use of technology (Venkatesh *et al.,* 2003). Consistent with the UTAUT, effort expectancy proved to be the second strongest construct in explaining the total variance of attitudes as the dependent variable. Effort expectancy had an r^2 = .440 in teachers' data and r^2 = .450 in students' data. These results are similar to many studies in which this factor related to technology attributes (Dwivedi *et al.,* 2017) has demonstrated to be a strong predictor of the use of technology (e.g., Liu, 2013; Cakir and Solak, 2014; Huang *et al.*, 2014; Lawrence, 2016). Findings further showed that effort expectancy, also conceived as perceived ease of use, influence teachers and students' attitudes towards ICTs (e.g., Shen and Chuang, 2010; Fageeh, 2015; Dizon, 2016; Rana *et al.*, 2017).

The UTAUT states that if people perceive ICTs are easy, clear, and understandable, they will be more likely to use them. Conversely, if they think that technology is too complicated, they probably will not use it (Venkatesh *et al.,* 2003). In this respect, comments expressed by most teachers and students confirmed what the model declares. In focus group interviews, they affirmed that using ICTs was easy for them and said they believed they could become skilful in their use. Moreover, teachers commented that if they did not know how to use new software (e.g., to design online exams), they used to ask a colleague for support. This result is consistent with McKenney *et al.* (2016), who said that when EFL teachers work collaboratively to design technology-enhanced learning materials, they learn from each other since they share and apply knowledge while addressing design challenges. In the case of students, they said that when they did not know how to use new software, they asked their peers for help (e.g., to edit videos) or watched online tutorials.

On the other hand, although most students reported that using ICTs was very easy, some students regarded learning EFL with ICTs as difficult. They explained that their English was not very good or they were not familiar with the use of some ICTs. However, they used to ask their peers for help when they had problems. These comments establish that even though students experience difficulties related to language learning with technology, they are resourceful, communicative, and supportive of each other because they have built a community of learners.

6.2.3 The contribution of social influence to teachers and students' attitudes

Regarding the social influence construct, multiple regression analysis revealed that there is a statistical association between teachers and students' social influence beliefs and their attitudes. Social influence explained the total variance of attitudes as the dependent variable with an r^2 = .265 in teachers' data and an r^2 = .349 in data. Basing the interpretation of the results according

to the UTAUT model, it can be observed that people's opinions about whether teachers and students' should use ICTs in language teaching and learning, their desire to gain prestige, and social environment as a whole have a small effect on teachers' attitudes and a moderate effect on students.

Comments made by teachers and students in focus group interviews supported these findings. Teachers declared that what other people thought about whether or not they should use ICTs to teach English was not important for them. However, they deemed as very important what the university administration and their students could think about whether and how well they use new technologies. Similarly, most students said that people's suggestions about whether they should use ICTs to learn English are not important to them, except for their teachers' opinion. Most students commented that the only person whose opinion was important for them and could influence their behaviour was their teacher. These statements are consistent with research studies in which the contextual factor of social influence impacts teachers and students' attitudes (e.g., Reddy and Sireesha, 2015; Agcam and Babanoglu, 2016).

6.2.4 The contribution of ICT self-efficacy to teachers and students' attitudes

Regarding ICT self-efficacy findings, multiple regression analysis indicated that there is a statistically moderate association (r^2 = .379) between teachers' ICT self-efficacy beliefs and their attitudes towards the use of ICTs in EFL. This finding is similar to other studies in which there is a moderate statistically significant relationship between self-efficacy and attitudes towards technology (e.g., Adalier, 2012; Yorganci, 2017). As for students, results revealed a weak association (r^2= .270) between students' ICT self-efficacy beliefs and their attitudes towards the use of ICTs in EFL.

As previously mentioned in section 2.7.3.1, the ICT self-efficacy construct was included in the adapted version of the UTAUT model as an independent variable to examine its contribution to teachers and students' attitudes towards ICTs. The section provided examples of numerous studies in which the self-efficacy factor demonstrated to have a significant effect on teachers and students' attitudes towards the use of ICTs(e.g., Compeau and Higgins, 1995; Fageeh, 2015; Berkant, 2016; Ngo, 2017). Moreover, empirical studies showed that there is a reciprocal relationship between computer self-efficacy and attitudes, meaning that a positive or a negative change in one of these variables would affect the other (Yesilyurt *et al.,* 2016). Nevertheless, the

results of the present study found a moderate association between teachers' perceptions of ICT self-efficacy and attitudes towards ICTs, and a weak association in the case of students. This finding may be attributed to the fact that ICTs were already in use when this study took place, and therefore, not in an acceptance stage. Likewise, participants' responses to surveys showed very positive opinions in regards to attitudes as well as ICT self-efficacy. Perhaps, these are the reasons why the possible changes in ICT self-efficacy beliefs contribute moderately to teachers' attitudes towards the use of ICTs in EFL and weakly in the case of students.

In addition, these results are comparable to teachers and students' opinions about their perceptions of ICT self-efficacy in focus group interviews. Most teachers and students commented that they are capable enough to use ICTs and overcome the problems they face when using technology in language teaching and learning. Moreover, they said that they used different strategies to get ahead when they have problems using ICTs such as asking for help to a more experienced colleague in the case of the teachers, and their peers in the case of students.

A theme that emerged from the data concerning students' ICT self-efficacy was their ability to transfer newly acquired skills to different areas of language or other subjects. Taking a comment of a second-level student as an example, he said that he learned to use the presentation software *Prezi* in his English class. Since then, he has continued to use *Prezi* in other subjects. That is, this student used ICTs to learn English and transferred the skills developed to other areas. This finding agrees with the asseverations made by Bozdogan and Özen (2014) regarding the transfer of technical skills recently acquired by students to other subjects, which reveals a successful integration of technology in the learning process. In another example, two students commented that they watch videos to improve their listening and reading skills, and this helps them learn grammar more easily.

On the other hand, though few, some students explained that their English was not good and they were not skilful in the use of ICTs either. This demonstrates how difficult it is still for some students to learn English through technology, which creates feelings of anxiety towards the use of ICTs in language learning. These findings concur with the study conducted by Celik and Yesilyurt (2013), who found that students' attitudes towards technology-supported education can be affected by factors such as anxiety and lack of computer self-efficacy. In the same vein, Quezada *et al.* (2017) points out that when teachers plan a lesson, they need to set goals based on students' level and language needs, that are realistic with what students can do with language and what they should be able to do to prevent them from developing feelings of anxiety. Moreover, Quezada *et al.* (2017) emphasise the need for developing EFL teachers' professional

competence to fill in the gaps of the methodologies and ICTs to address students' language needs adequately.

6.2.5 The contributions of facilitating conditions to teachers and students' attitudes

Multiple regression analysis conducted in teachers' data indicated that there is a statistically moderate association between teachers and students' perceptions of the facilitating conditions and their attitudes towards ICTs. Facilitating conditions explained the total variance of attitudes as the dependent variable with an $r^2 = .378$ in teachers' data and an $r^2 = .384$ in students' data. These results demonstrated that this contextual factor, which involves aspects such as technical support and institutional regulations, though moderately, contributes to EFL teachers and students' attitudes towards the use of ICTs.

Findings from focus groups and classroom observations agreed with those obtained through statistical methods. Most teachers commented that the adoption of ICTs had been a process, and nowadays, the Internet connection and equipment in the classrooms were better than years before. Likewise, second-level students affirmed they were happy about having computers and Internet access in the classroom. However, this construct received negative comments from some teachers and fourth-level students concerning the Internet and classroom equipment failures, lack of technical support, and Internet speed. This finding demonstrates that, even though the majority of teachers and students expressed positive opinions about the facilitating conditions, the Internet and equipment failures can cause great discomfort in those teachers and students that are being affected by them.

A theme that emerged from discussions and confirmed in classroom visits was the furniture and computer equipment arrangement. Teachers and students said that tables and computers arranged in circles in the classroom cause discomfort for several reasons. For example, the lack of space impedes the application of activities that require students to walk. Some students have to twist in their seats to see the teacher, TV screen, and/or whiteboard in the front of the classroom. This result is consistent with research studies that have shown that facilitating conditions can have a negative or positive effect on EFL teachers and students' attitudes and their use of technology (e.g., Murat, 2012; Alresheed and Leask, 2015; Fageeh, 2015; Liu and Huang, 2015).

6.3 Statistical relationship between attitudes, actual use and continuance intention to use

This section discusses the findings that respond to research question 2:

- What is the relationship between teachers and students' attitudes, actual use, and continuance intention to use ICTs in EFL teaching and learning?

The Pearson product-moment correlation coefficient calculated in the teachers and students' data revealed that there is a highly significant relationship between *attitudes, actual use,* and *continuance intention to use*. The strong association between these variables suggests, without indicating causality, that any variation in the teachers and students' attitudes towards ICTs could be reflected in their actual use and their continuance intention to use ICTs to teach and learn EFL. Correlations between teachers and students' attitudes and actual use were very significant; in the case of teachers, the Pearson r-value was .605, and for students, it was .689. These findings are consistent with research studies in which attitudes appear as a factor that influences the use of technology (e.g., Sang *et al.*, 2010; Tzeng, 2011; Aydin, 2013; Cakir and Solak, 2014; Fageeh, 2015; Madawi and Tariq, 2016; Park and Jung, 2016). For example, Al-Seghayer (2016) found that ESL/EFL instructors' negative attitudes about using computers were one of the factors that were impeding the use of computer-assisted reading (CAR) in the language classroom (Al-Seghayer, 2016). In another study, Alzahrani and O'Toole (2017) found that attitudes towards the Internet are likely to affect students' adoption and use of new learning approaches. Similarly, Sang *et al.* (2010) investigated students and teachers' thinking processes and ICT integration. Among the variables explored, attitude towards computer use in education was the strongest predictor of prospective computer use. Furthermore, research studies that have included the attitude construct to the UTAUT model have found that attitudes influence the use of technology (e.g., Thomas, Singh and Gaffar, 2013; Dwivedi *et al.*, 2017).

Reciprocally, the use of technology may influence teachers and students' attitudes. Park and Jung (2016) found that the effective use of video clips such as TED talks, sitcoms, TV news reports, and movies as part of an English course has the potential to eliminate students' rejection to the target language and to transform negative attitudes into positive ones. Results also agree with Masalela's (2009) asseveration that teachers need to be well-informed of students' attitudes, since reliability, convenience, and effectiveness of a technology tool may strongly influence their attitudes towards blended instruction.

Regarding the association between teachers and students' attitudes and their continuance intention to use ICTs, results demonstrated that there is a highly significant relationship between

these variables. Pearson r-value was .701 in the case of teachers, and .689 in students' data. These findings are in line with the claims made by Bouchefra and Baghoussi (2017) about the influence of attitudes on the future use of technology. They stated that teachers' attitudes towards new technologies not only impact their teaching practices but influence their students' attitudes and their future decisions of adopting the technology.

Likewise, findings are consistent with García's (2018) study about the use of ICTs in the EFL classroom in Ecuador. Results showed a positive correlation between the teaching practices with the use of technology and students' motivation to continue to use them. Findings also demonstrated that teachers liked to use ICTs because they helped them improve their teaching methodology (García, 2018). Venkatesh *et al.* (2011) found that the constructs of the UTAUT model added to the Expectation Confirmation Theory model to assess the pre-and post-adoption of new technologies, explained the variables of disconfirmation, attitude, satisfaction, and continuance intention to use the information system (IS).

Concerning the association between teachers and students' actual use and continuance intention to use, results showed a highly significant relationship. Correlation in teachers' data had an r-value of .603, which is strong. In the case of students, the association was even stronger since the r-value was .953, showing an almost perfect correlation. These findings agree with Bax (2011), who declares that the use of modern technology in the language classroom has become normal. Bax affirms that language teaching and learning are immersed in a sociotechnical and sociocultural environment, in which the use of technology does not occur in isolation, but through a combination of cultural aspects, social communication, interaction, and mutual support (Bax, 2011). As results of this study reveal, the fact that teachers and students use and are willing to continue to use ICTs gives evidence of the *normalisation* of new technologies in the teaching and learning of EFL. Moreover, the significant association between students' actual use and continuance intention to use, reflects what Prensky (2001) said of digital natives (i.e., students who were born into the digital age), referring to they work better when networked.

6.4 ICT usage in the blended learning modality

Because ICTs do not exist in isolation, but they intertwine with the rest of the elements in the blended system such as tools, teachers, students, administration, and facilities among others (Lim *et al.,* 2012), the most important thing is to know how they are being used in the classroom and

how they facilitate teaching and learning processes (Motteram, 2013). Hence, examining what kinds of ICTs are being used by EFL teachers and students and how it was essential to this study.

This section discusses the findings that respond to the following research questions:

3. In what ways do the ICTs most frequently used within the blended learning modality impact the teaching and learning of EFL?

a) To what degree are ICTs being used in both in-class and out-of-class activities?

As previously seen in section 4.2, the results of the ETQ questionnaire showed that the electronic devices most frequently used were the desktop computer, followed by laptop and smartphone. The fact that computers are the electronic device most frequently used by teachers and students was something expected, since all the classrooms are equipped with computers for this purpose. Besides, the use of other electronic devices such as laptops, smartphones, and cellphones is optional for teachers and students. Perhaps this is why laptops and smartphones were minimally used during classroom observations. On the other hand, in focus groups, students reported that when they work on out-of-class team assignments or projects, the electronic devices they use most are the smartphones, followed by laptops. This finding agrees with Jung (2015), who said that the use of mobile electronic devices allow EFL students to participate in various activities, extend their learning, and enrich them with new possibilities. Similarly, Hismanoğlu (2011) asserts that technology offers a variety of interactive resources to facilitate students' language learning through real-world situations. In this respect, in informal conversations the researcher had with EFL teachers, three of them commented that they preferred to use their laptops in class and apply speaking activities in which the students had to use their phones to make it more authentic.

The Smrt English course stood out as the most frequently used online resource by EFL teachers according to the results of the ETQ questionnaire. This finding is because Smrt is the course officially adopted by the university to teach English. Therefore, the Smrt website is used by teachers first, and then they work with activities taken from the Internet to reinforce or extend a topic of Smrt, as they confirmed in group discussions. These results are similar to the declarations of Norberg *et al.* (2011), in what they call 'the new normal' of a new educational reality where digital tools are not conceived as new technologies but embedded into the educational practices through a multiplicity of sources. In this sense, the fact that teachers dedicate time to search for materials online aside from using the Smrt course to teach indicates that they have adapted to the new educational environment and have developed positive attitudes towards the use of ICTs to teach English. Likewise, this is congruent with recommendations made by researchers about the importance of attitudes towards technology, who state that teachers' positive attitudes towards technology are essential for its successful use. For instance, Kusano *et al.* (2013) affirm

that teachers' attitudes towards the use of technology in the classroom serve as an indicator of how well technology will be integrated into their daily teaching. Fageeh (2015) asserts that investigating attitudes towards technology is crucial since emotional reactions should be seriously considered as prevalent to enhance teaching and learning processes. Hockly (2016) adds that, at the individual level, teachers and students' attitudes towards the use of new technologies may significantly affect other elements related to their use, which represents an important challenge to consider in the area of English language teaching.

Conversely, online resources such as the teacher's own webpage, voice over Internet protocol (e.g., Skype), and blogs were less used by the teachers. The above may be attributed to the lack of training in these types of software in which teachers may need more preparation, or to the lack of necessary equipment (e.g., webcams for online speaking). In this respect, findings agree with the asseverations of Drigas and Charami (2014), who say that it is crucial to consider that teachers are not always familiar with the technological tools they are expected to use in their classes. Thus, their training needs should be taken into account. About this issue, Rabah (2015) mentions that having more training in the use of technology and equipment is either a need or a challenge for teachers since the annual training they have is not enough.

6.4.1 The impact of using ICTs in the teaching and learning of EFL

Sharp (2011) states that teachers must know about the affordances and limitations of ICTs to better understand how to integrate them into the language classroom. Likewise, Jukes *et al.* (2010) assert that students expect to have an educational experience where they learn through exploration, interaction, and collaboration rather than in the traditional face-to-face lectures. In the present study, focus group interviews demonstrated that teachers and students are aware of the benefits of using ICTs in the teaching and learning of EFL. Their comments revealed three types of affordances offered by new technologies, namely language skill development affordances, social affordances, and educational affordances. Table 27 presents these affordances and their impact on teaching and learning. Some of the aspects included in the table arose in group interviews and others from research studies that obtained similar results (see Appendix R).

6.4.1.1 Impact of language skill development affordances on teaching and learning of EFL

Findings of the impact of the affordances of ICTs on English language teaching are consistent with Al-Kamel (2018), who asserts that ICTs may positively impact the teaching and learning of EFL.

Nevertheless, their effectiveness will depend on the way they are used. Also, he points out that the learning possibilities of ICTs allow focusing on one specific language skill or sub-skill, namely reading, listening, writing, speaking, grammar, vocabulary, and pronunciation. For example:

Regarding the effect of ICTs on the teaching and learning of grammar, findings revealed that grammar exercises and grammar videos from the Smrt English course, as well as interactive grammar exercises from the Internet (e.g., *Kahoot!*), impact the teaching and learning of this language sub-skill in a variety of ways. For instance, ICTs allow teachers to reinforce and extend the explanation of the lesson's topic. Similarly, new technologies provide students with a great variety of exercises that help them focus their attention, avoid boredom, and in many cases, receive automated feedback (Golonka *et al.,* 2014). Furthermore, ICTs allow students to revise their work at their pace, boost their engagement (Al-Kamel, 2018), and overcome feelings of failure (Lianjiang, 2017).

In addition, the affordances of ICTs impact the teaching and learning of vocabulary, pronunciation, and listening. Vocabulary exercises from Smrt and the Internet, the use of online resources linked to Smrt such as interactive software (e.g., Spelling City) and online dictionaries (e.g., Oxford Learner's Dictionary), audios, and videos allow students to associate images, pronunciation, and written text. Results are comparable with the declarations made by Golonka *et al.* (2014), regarding that online dictionaries speed searches for a lexical item so that the reading process is minimally interrupted. Moreover, ICTs facilitate students' learning of words and phrases through games, help them become familiar with different accents of English native speakers, and makes it possible to listen to authentic materials on the web (Al-Kamel, 2018).

Reading exercises from the Smrt English course, websites linked to Smrt (e.g., *Global times* and *DOGOnews*), and online resources (e.g., online magazines) foster the development of reading skills by providing students with a variety of reading activities with appealing content, and the possibility to read authentic materials (Golonka *et al.,* 2014). Lastly, the use of audio messages and free applications for smartphones (e.g., *Hello Talk to the World*), allows students to practice speaking with their peers and native speakers.

It is important to note that the impact of ICTs on the development of writing skills was not mentioned in this section. The reason is that neither the teachers nor the students made any commentaries about how ICTs benefit writing skills. On the contrary, as previously mentioned in section 5.2.1.4, this is an area of language in which the use of ICTs was regarded as not very helpful by the teachers, contradicting the declarations made by Rabah (2015) that the primary goal of ICTs is to facilitate the teaching and learning processes. Focus group interviews revealed that the use of ICTs to develop writing skills is being neglected. This finding emphasises the

importance of providing teachers with opportunities for professional development in this area (Peyton and Schaetzel, 2016) since the demand for technology-skilled teachers to prepare students in the use of ICTs has grown (Hubbard, 2009); as well as the need for skilful teachers in the use of ICTs (Attwell and Hughes, 2010).

Similarly, the use of ICTs to develop speaking skills was also considered as not very useful by the teachers. Perhaps, they apply speaking activities in the face-to-face time in the classroom; however, observations provided little evidence of this. Furthermore, teachers' comments on students' lack of communicative competence suggest that they do not practise this language skill very often. Classroom observations were of great help to identify problematic areas that otherwise would have been impossible to see through surveys and focus groups since there were no comments on them during group meetings. For instance, computers lack of necessary gadgets for students to practice speaking online, such as webcams and headsets with microphone, which prevents students from practising speaking and pronunciation using, for example, skype in the classroom.

6.4.1.2 Social and educational affordances

Social and educational affordances of ICTs impact the teaching and learning of EFL in many ways. Results of the present study showed that new technologies allow teachers to scaffold students in online and face-to-face mode (Cho and Cho, 2016). Moreover, findings demonstrated that scaffolding also takes place between students when they help each other to learn new software. In group discussions, two students explained that making an animated video using the platform *GoAnimate* had been very difficult for them. They had to ask for help to their peers to be able to finish the project. These findings agree with Gillies (2008), who says that the notion of teacher-student scaffolding has evolved, and currently, support can be provided between student peers. Gillies asserts that student-student scaffolding has proven to be very effective in educational settings since the more advanced students can give support to those who are left behind.

As Sharp (2011) points out, teachers and students demonstrated to be aware not only of the affordances of ICTs but also of their limitations. Teachers commented that one limitation of the Smrt English course is that it displays the outcomes of exams in percentages. Hence, neither the teachers nor the students know which answers are correct or incorrect. Since teachers did not know how to create online exams, they asked for help to a more experienced colleague to teach them. Findings showed that teachers built a community of practice to support one another,

similar to students, who formed a community of learners. Being part of a community, helps them diminish a sense of isolation and develop a sense of belonging as a result of their participation and collaboration in the community (Schrader, 2015; Lianjiang, 2017). The finding is consistent with Wenger (1998), who describes a community of practice, or community of learners in the case of students, as an organisation in which people learn through informal communities formed by them as they pursue common learning goals (Wenger, 1998). Results are also in line with (Fleck, 2012), who affirms that the dynamic of a learning community allows the following types of interaction: learning materials and students; teachers and students, and between student peers. In this respect, the study identified these types of interactions supported by the use of ICTs. Besides, students benefit from the type of blended learning of the Smrt course, consisting of face-to-face classes with the teacher in the classroom and online content, and online work off-campus. This combination is comparable to an EFL course designed by Whittaker (2013) that she described as an unusual blend or multimodality, in which students benefited from taking classes with a teacher and working online in a self-access centre and outside it. Moreover, the affordances of ICTs allow interaction between teacher-student, student-student, and interaction with native speakers of the target language (Golonka *et al.,* 2014) through synchronous (e.g., instant messaging applications) and asynchronous (e.g., *Gmail*) communication. Also, ICTs facilitate the organisation and access to documents online, giving time to teachers and students to focus on the important work (Norberg, 2017) and helping them develop a sense of autonomy (Al-Kamel, 2018).

6.4.2 Actual use of ICTs

This section discusses the findings that respond to research question 4:

- How do EFL teachers and students actually use ICTs within the blended learning modality?

Regarding the use of technology, the teachers' questionnaire (ETQ) revealed the electronic devices and online resources most commonly used in the classroom, as well as the time the teachers dedicate to use technology during class. Results of the ETQ coincided with those obtained through classroom observations and focus groups. The eight classroom observations allowed to see that teachers use ICTs during the whole class. The teachers' role is of leaders who direct the sequence of the activities and guide the students to work on online activities of the Smrt course and the Internet. As well, teachers emphasise more the use of ICTs to teach grammar and vocabulary than other areas of language. The patterns of interaction vary depending on the type of activity, either teacher-student, student-student, and student-content, and computers are the electronic device mainly used. These findings are similar to those of some research studies in which ICTs are regarded as highly useful to teach grammar and vocabulary (see

section 2.4.2). For example, Franciosi (2017) found that computer-game based lessons applied in EFL classes can improve the transferability of vocabulary words outside of the learning context. He asserts that one of the main goals of English language teaching is the transfer of skills to use them in communicative situations. Similarly, empirical studies have found that online concordancers and authentic texts foster the learning of grammar, promote vocabulary acquisition, and improve students' awareness of syntactic patterns (Yavuz, 2014; Türkmen and Aydin, 2016).

Regarding out-of-class activities that involve the use of ICTs to develop the four language skills and sub-skills, results of the ETQ questionnaire revealed that grammar and vocabulary activities are the most commonly assigned by teachers. Against writing and speaking activities, which are less assigned in out-of-class activities. That is, the areas of language where teachers put more emphasis on the use of ICTs in the classroom, are the same areas they emphasise most in out-of-class activities. Nonetheless, students' focus groups provided evidence that, in out-of-class activities, the patterns of use of technology change. They use ICTs to reinforce the skills and sub-skills of their interest and work with online resources and electronic devices of their choice.

As previously indicated in section 5.7.2, students reported that they use ICTs primarily to work with the Smrt course to develop the four language skills and sub-skills. Also, their commentaries showed how they use new technologies in self-study hours, teamwork assignments, and to participate in collaborative projects outside the classroom. These findings are consistent with the literature that considers blended learning as the most effective teaching approach since the complementary combination of face-to-face and online mode facilitate students' learning (King, 2016). Hence, the notion that blended learning potentially being greater than the sum of its parts (Graham, 2006) can be observed in the learning possibilities this modality offers to learners. For example, the form of blended learning used in this study allows students to be benefited from the teacher's explanation in the classroom and face-to-face discussions (Stein and Graham, 2014). They can also interact with the teacher, other students, and content over the Internet inside the classroom and outside it synchronously and asynchronously. Moreover, this learning modality fosters students to be responsible for their own learning and become independent students by making the most of the blend of traditional and virtual instruction.

During group interviews, students' comments on how they use ICTs to participate on collaborative assignments outside the classroom, in general, followed the next pattern: first, they create a

group in a social network to communicate with each other (for example, *WhatsApp*). Then, they share a document to work through *Google Drive*. After that, they add the information they investigated online to the document and make corrections. While searching for information, they regularly use *online dictionaries* and *Google Translate* to learn the meaning of words and their pronunciation. Once they finish the task, they send it to the teacher's mailbox in *Gmail*. However, if the activity asks to record a video, they get together in a place to do it. Furthermore, findings revealed that the majority of students use free video editors (e.g., *Vivavideo*) to edit the videos they record on their smartphones, even though video editing is not part of the activity asked by the teacher.

These results reflect what the theory of cognitive constructivism declares that learners construct knowledge and meaning from their personal experience, since these elements are not passively received from the environment (Levy, 1998). As a case in point, some students said that, initially, they did not want to use *GoAnimate* software to create animated videos, but they did it and discovered it was fun. This finding agrees with cognitive constructivism, which claims that students need to assimilate a new experience first, for it to be accepted.

The majority of teachers and students reported being capable enough to use ICTs to teach and learn EFL. Their declarations revealed how they overcome the difficulties they encounter when using new or more complex software. In the case of teachers, it was observed that in addition to watching online tutorials, they ask for the support of more experienced teachers and organise workshops to learn to use new software. Likewise, students dedicate time to review and reinforce in their self-study hours but also ask their teachers and peers for help. These actions agree with the principles of socio-cultural constructivism, which emphasises the collaborative nature of learning (Vygotsky, 1978). Moreover, these findings are consistent with the research literature in that, such interactions may help students develop their high order thinking skills such as critical thinking, problem-solving, and project work; as well as reflect on their own learning process, and co-construct knowledge (Joosten *et al.*, 2013; Hockly, 2016).

The degree of agency of teachers and students in the use of ICTs is consistent with Kögler (2012) and Gallagher (2012). They state that the sense of agency leads people to make decisions consciously or unconsciously based on their experience and knowledge. The fact of being who decides and takes action upon those decisions (Korsgaard, 2014) was evident in teachers and students. They can communicate with each other over the Internet, apply teaching and learning strategies, use different electronic devices and online resources, search for information, share documents, look for the support of more technology skilful colleagues and peers, and build learning communities.

The findings discussed in this section demonstrate that there is a trajectory of acceptance and use of ICTs, ranging from a patchy use and no use of towards their full acceptance and integration. In section 1.6, the researcher explained that when the university adopted the blended learning modality in 2012, the use of ICTs became obligatory to teach EFL. As a result, some teachers accepted it (mainly newly hired teachers), and many others showed some resistance to the innovation and expressed not feeling very happy about not using the textbook. However, nowadays, teachers seem to fully accept and integrate ICTs in their daily teaching. Furthermore, they show positive attitudes towards technology and act upon to become more skilful in its use. Similarly, although the majority of students had little or no experience in language learning with technology, they have demonstrated knowing how to use it to facilitate their learning of EFL.

After analysing the information through data triangulation, the study revealed that the level of maturity in the implementation of ICTs reached by the research site, teachers, and students, is situated at the threshold of stage 3, according to the Blended Learning Adoption Framework proposed by Graham *et al.* (2013). Stage 3, refers to institutions that have reached a mature implementation and growth of blended learning (see section 2.2.3), meaning that they have well established educational processes, policies, definition and purpose of blended learning. Although this study found that the university, faculty, and students show signs of maturity in the integration and use of ICTs, it also detected some areas require specific attention to reaching the level of mature implementation and growth. For example, faculty professional development, technical support, evaluation of students' outcomes, evaluation of teachers and students' satisfaction, among other aspects considered in stage 3.

6.5 Barriers encountered by EFL teachers and students when using ICTs

This section presents the findings that respond to research question 5:

- What barriers do EFL teachers and students encounter when using ICTs in the blended learning modality?

The literature shows many factors that may obstruct teachers and students' integration and use of ICTs. In this study, the barriers identified are institutional-related (extrinsic), teacher or student-related (intrinsic), as well as barriers that specifically affect the area of language learning with technology (Harrington, 2010; Mirzajani *et al.*, 2015). Gilakjani (2014) highlights the

importance of identifying the barriers that delay the use of technology in EFL instruction for their further removal. Similarly, Mirzajani *et al.* (2015) argue that it is necessary to understand how the different barriers affect ICT users and how institutions advocate for decision-makers to solve them. In the present study, the ETQ and ESQ questionnaires, focus groups, and class observations served to identify the barriers encountered by EFL teachers and students when using ICTs. Although all barriers are significant, this section only describes those that are common to participant teachers and students to simplify the discussion. The barriers are:

6.5.1 Lack of knowledge of easy-to-use online resources

Consistent with the body of research, this study revealed that the lack of knowledge of easy-to-use online resources affects teachers and students' use of ICTs in EFL. For example, about the use of online concordances, an EFL teacher commented, 'I don't know what is available, useful, or easy to use. My scope is too narrow' (Chen, 2008, p. 1023). Similarly, Solano *et al.* (2017) assert that more training in how to use technological tools is necessary, due to the possibility of teachers thinking that ICTs are difficult to use, which may influence their choice of using them in their daily practice. In this respect, this study found that the lack of easy-to-use online resources also affects the students' learning. In focus group interviews, two fourth-level students said that the teacher should indicate which Internet pages to use because they did not know websites to learn English. This comment contradicts what Prensky (2001) said, 'Our students today are all "native speakers" of the digital language of computers, video games and the Internet' (p. 01). This may be attributed to the complexity that entails learning EFL with ICTs.

6.5.2 The classroom is not well equipped to use ICTs

Teachers and students' responses to the ETQ and ESQ questionnaires demonstrated that the classrooms are well equipped to use ICTs. However, observations revealed that in one of the classrooms students outnumbered computers; consequently, there were not enough computers for students. This finding shows an institution-related factor that points to the need for evaluating how well the university provides the equipment necessary to support the teaching and learning processes (Ertmer, 1999).

Teachers also mentioned that some students do not have electronic devices at home (e.g., computer, laptop, smartphone); for this reason, many of them cannot do homework over the weekend. Teachers' statements show that the lack of enough computer labs at the university campus affects students learning since those who do not have electronic devices at home could benefit from doing homework in the computer labs. These findings are consistent with empirical

studies that found that factors out of teachers' control such as insufficient computer facilities (Park and Son, 2009) and inaccessible equipment (Mirzajani *et al.*, 2015) affect teachers and students' attitudes towards the use of ICTs and delay the achievement of the learning objectives. Concerning insufficient equipment problems, Ellsworth (2000) states that stakeholders in the educational field must ensure that the necessary resources are equally available for teachers and students (Ellsworth, 2000).

6.5.3 Availability and reliability of Internet connection

As reported by teachers in group discussions, the Internet does not fail very often at the university. However, when the connection is lost, the teachers and students are affected. Internet failures do not stop clasess but alter the regular progress of the English courses. An option for teachers and students is working in the computer lab when the Internet fails, but they depend on the availability of computers. In group interviews, teacher Daniel said that 'A reliable Internet connection is essential for the use of ICTs and optimal performance of the teaching and learning activities. This small problem has a great impact on teachers and students' daily activities' (FG2TS_Daniel). These findings coincide with the study of Alresheed and Leask (2015), in which they found that insufficient Internet access in the classrooms and students' low access to computer laboratory among other factors contribute to the failure of integrating CALL in school settings.

6.5.4 Lack of technical support

Concerning the technical support provided by the university, what stands out is the delay or lack of response of the technical support staff to fix computer equipment failures. For example, in one of the classrooms visited three computers were not working. Although most computers worked correctly, this caused discomfort among students who opined that computer failures affected them significantly. These results agree with Becta's (2004) findings concerning teachers' perceived barriers to the use of ICTs. Among others, teachers reported that technical problems (e.g., fears of things going wrong and lack of technical support) were among the most common barriers to ICTs usage. Later, in another study conducted by Becta (2007) to review teachers' e-maturity, it was discovered that the issues still faced by teachers when using technology were the lack of technical support, minimum use of technology, and lack of continuity in the use of technology at home.

Further, the lack of efficient technical support can significantly affect teachers and students' use of ICTs. For example, Aydin (2013) found that EFL teachers were not interested in using computers because they did not feel supported by the administration and technical support department (Aydin, 2013). Yilmaz (2011) argues that schools should have technical support staff in charge of repairing the equipment and Internet connections for a continuance use of computer technologies. The literature shows many studies that explore the barriers that hinder the use of new technologies in EFL. Their results have in common that the lack of efficient technical support affects the use of ICTs (e.g., Park and Son, 2009; Li and Ni, 2010; Murat, 2012; Gilakjani, Sabouri and Zabihniaemran, 2015).

6.5.5 Barriers that affect specifically the use of ICTs in the area of EFL

Some barriers that teachers and students mentioned in focus group interviews were similar to those reported in the ETQ and ESQ questionnaires or the ones detected in classroom observations. However, new barriers emerged that can be identified as specific to the area of language learning with technology. These barriers are:

6.5.5.1 Students tend to 'self-mute' during online collaborative writing activities

During group interviews, EFL teachers and students agreed that one of the barriers that hinder the use of online collaborative writing tasks is students' low level of English. Taking the comment of a fourth-level student as an example, he said: 'sometimes when the teacher makes some [online] corrections to something I've written, I feel ashamed and stop writing to avoid making more mistakes' (FG2L4_Juan). This finding coincides with the results found in Harrington's (2010) study, which discovered that, in online discussion boards, some EFL/ESL students tend to 'self-mute' (i.e., they stop writing) as they would do in face-to-face interactions due to feeling intimidated by more skilful peers, or as in this case, by the teacher (Harrington, 2010). Also, the fact that students stop writing in collaborative writing activities is consistent with the findings obtained by Wu (2015), in a study on the effects of blog-supported collaborative writing. He found that EFL students who achieved average and low test scores did not want to write via blogs because their scores made them feel less confident in their writing abilities to use blogs. In the same vein, Mirzajani *et al.* (2015) point out that attitudinal barriers may include fear to be embarrassed in front of classmates, perceptions that technology does not improve learning, and it is difficult to use among others. These barriers are similar to those expressed by EFL students in the studies conducted by Wu (2010), Harrington (2010), and in the present study.

6.5.5.2 The combination of English language learning and the use of ICTs

Another barrier that arose during group discussions with teachers and students was precisely the combination of English language learning and the use of ICTs. Some second-level students reported finding it difficult to learn English with technology because the Smrt course and online resources are in English, and their English was not proficient yet. Regarding this, the research literature does not show any studies that categorise the combination of language learning and technology as a barrier. However, experts in the field acknowledge that ICTs and ELT are complex systems (Motteram, 2013) that interact inside of a quickly changing environment (Hubbard, 2009). Therefore, the complexity entailed in language learning with technology combined with the poor linguistic competences with which many students enter the university (Székely, O'Donoghue and Pérez, 2015) is, perhaps, the main reason why learning English with ICTs is difficult for some first levels students.

At least in part, students struggling to learn English with technology may be attributed to the fact that the language used by some teachers for class delivery is Spanish. In three observations, teachers taught the class in their mother tongue, affecting with this not only the students' development of linguistic competences but indirectly the use of technology. Students' recurring comments about how difficult it is for them learning to use ICTs because their English is not very good might be related to the use of Spanish in the classroom, and possibly outside of it. In this respect, Nguyen (2017) asserts that teachers' language learning experiences have an impact on their teaching style because the way they learned English in the past significantly influences their teaching today (Nguyen, 2017). Borjian (2015) goes further and critics the narrowness of English training programs in Mexico, which affect teachers' communicative proficiency, and in turn, to their students.

In sum, the barriers presented in this section, point to the importance of looking for solutions at the macro (institutional) and micro (individual) levels for their removal. In this sense, necessary changes have to be made by the university, teachers, and students to overcome the obstacles that affect the teaching and learning of EFL within the blended learning modality. As suggested in the literature, the barriers at the institutional or individual level that affect both teachers and students should be eliminated first, including those that affect specifically the teaching and learning of EFL.

6.6 Implications of the study

New modes of teaching and learning have emerged, such as the blended learning modality, in which information and communication technologies (ICTs) satisfy students' learning needs (Pareja-Lora *et al.*, 2016). However, the gap in technology-related skills points to the need for programs that allow the continuing professional development of teachers for them to be updated in the use of new technologies (Attwell and Hughes, 2010).

The purpose of this study was to establish to what extent factors considered as key predictors of acceptance and use of information technology (IT) contribute to teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL. Also, it explored whether there is a relationship between their attitudes, actual usage, and continuance intention to use ICTs. To achieve these aims, a version of the UTAUT model (Venkatesh *et al.*, 2003) adapted to the context of this study served as a framework to examine the elements of interest in the investigation (see section 3.3). The study also established EFL teachers and students' actual use and continuance intention to use ICTs to develop the four language skills (reading, listening, speaking, and writing) and sub-skills (grammar, vocabulary, and pronunciation) within the blended learning modality at a tertiary level. It also sought to provide insight into the impact of ICTs on the teaching and learning of EFL.

Moskal *et al.* (2013) point out that a successful blended learning program requires the alignment of institutional, faculty, and student goals. In this sense, the results of the study suggest that changes have to be made at the macro (institutional) and micro level (teachers and students) to fully benefit the teaching and learning of EFL through technology.

6.6.1 Implications at the institutional level

At the institutional level, the university should be responsible for providing faculty and students with training and computer equipment to develop all areas of the English language in an integrated way. In this regard, the findings revealed that teachers and students are not fully benefiting from the use of ICTs, in part perhaps, because computers do not have the necessary gadgets to develop the speaking and listening skills such as headphones, microphones, and webcams. Additionally, there is a lack of ongoing training for teachers in the use of new technologies. The above is consistent with Hernandez-Ramos (2005), who states that the accessibility to computers is as important as the availability and integration to ICTs in educational settings. In this case, the university administration should know how computers and online resources are being used by participants to identify those devices whose absence significantly affect the teaching and learning of EFL inside and outside the classroom.

Furthermore, the study revealed the need for an institutional policy that includes a systematic strategy for the teaching of EFL with technology (Hughes and Tulimirovic, 2015). Although teachers show good attitudes towards the use of technology and have some computer skills, the lack of necessary equipment and ongoing training prevents them from teaching English in an integrated way (Chapelle, 2003; Hubbard, 2009; Attwell and Hughes, 2010; Drigas and Charami, 2014). Therefore, the university should seriously consider solving this issue as teachers use online resources mainly to teach grammar and vocabulary. Also, the teaching of writing is being neglected, and little emphasis is put on the development of speaking. These findings contradict the principles of the CLT approach, which promotes the improvement of communicative skills and reveals some characteristics of the traditional teaching methods in language teaching (Richards and Rodgers, 2001). Likewise, results agree with Oz (2014), who says that even though teachers and students have positive attitudes towards ICTs, this does not guarantee their proper use (Oz, 2014).

According to Oz (2014), many obstacles hinder the use of ICTs, even in the presence of positive attitudes. The present investigation noticed that several institutional-related barriers affect EFL teachers and students' use of ICTs. This study recommends eliminating them in the following order: 1) lack of knowledge of easy-to-use online resources, 2) lack of ongoing training, 3) lack of availability and reliability of Internet connection, and 4) lack of technical support. Barriers 1 and 2 are related to training needs, while 3 and 4 are tied to the facilitating conditions to work with ICTs within the blended learning modality.

6.6.2 Implications for teachers

As an EFL teacher said in a group interview, 'Technology is the present and the future' (FG2TS_Daniel). This declaration implies that teachers and students must learn to use technology for educational purposes. What stands out is that the integration, frequency, and use of ICTs in English language teaching greatly depends on teachers' knowledge and attitudes towards technology (del Puerto and Gamboa, 2009). However, teachers are not using ICTs that require specialised training such as the creation of a webpage, blogs, and the use of wikis among others, which makes it necessary to offer training programs that allow them to become skilful in the use of a wider range of ICTs in EFL (Gilakjani, 2014). In this respect, experts in the field of ELT say that numerous factors affect the use of ICTs in the teaching of EFL. Nevertheless, the globalised world where we live expects teachers to be skilful in the use of new technologies; mainly, in student-

centred approaches, where the teacher is seen as a facilitator who is responsible for choosing and integrating adequate software in the learning tasks to ensure students' assimilation of knowledge (Chapelle, 2001; Hubbard and Levy, 2006; Hashemi and Azizinezhad, 2011).

Teachers are co-responsible with the university for searching for channels of communication and informing about their training needs or lack of resources. This would help them diminish the feeling of isolation from the university expressed by some teachers in group discussions. They could suggest to the university to implement an introductory course to ICTs as part of the new students' induction course at the beginning of the semester, to reduce the existing disparity between students' technology skills. Moreover, given the fact that EFL teachers have built a community of practice (Wenger, 1998) to receive support from more experienced colleagues and to continue to learn to use ICTs that they consider complex, their interest and willingness to be up-to-date in technology may encourage other teachers to join the community.

Concerning the use of different types of online resources, teachers should make sure that students understand instructions when using ICTs. Therefore, taking into account that *effort expectancy* strongly contributes to students' attitudes, teachers should promote the use of new technologies that students perceive as easy to use, especially those who declared having poor English. Besides, the fact that *performance expectancy* strongly contributes to teachers and students' attitudes is determinant to achieve educational goals through technology. Teachers should emphasise the usefulness of ICTs to learn EFL to keep students' motivation high and foster positive attitudes towards them. Solano *et al.* (2017) say that if students are motivated and interested in using technology, they will learn more effectively and according to their individual needs in an interactive way.

In addition, it is favourable that there is a moderate association between perceived social influence and attitudes towards ICTs, since teachers and students' use of technology are minimally affected by the opinions of people that are important for them. Although, it is interesting that for teachers, students' opinions about their abilities to use ICTs are important, and reciprocally, the only person whose opinion could influence most students' behaviour is their teacher's. This finding allows us to infer that the implementation of ongoing training courses could be of great help for these groups that are influential to one another.

6.6.3 Implications for students

Within the social constructivist approach, knowledge is not expected to be transmitted from teachers or books to students (or receivers) but constructed collectively by students, or between the teacher and students (Weinstein, 2001). That is, constructivist environments promote

collaborative construction of knowledge, scaffolding, and coaching (Herrington and Oliver, 2000), which implies that students have an active role in the student-centred approach. In the field of language learning through technology, this suggests that students should share with the teacher their technology literacies as many students are technologically savvy and their contributions could enrich the class and helpless skilful peers.

As seen in this study, students are able to get ahead in learning situations in which they deal with language and technology by working collaboratively. In this regard, Lee (2000) asserts that the Internet and computing devices make it possible for students to gain experience in handling huge amounts of information as they become producers and not only recipients of knowledge. At the same time, they develop thinking skills and decide what to explore (Lee, 2000). This study agrees with Lee's asseverations because the degree of agency observed in students' declarations regarding how they use of ICTs when working collaboratively, allows seeing that they are making their own decisions and acting upon them based on their experience and knowledge. Their comments in group discussions, which were confirmed by their teachers, proved them to be skilful, resourceful, cooperative, and able to negotiate when using technology in a class project. Moreover, the learning autonomy developed by students was evident in the way they use ICTs in their self-study hours to study, review, or reinforce what they have seen in class using electronic devices and online resources of their choosing.

Conversely, this study calls stakeholders to be sensitive with those students for whom learning EFL with technology is not easy. It is essential to consider that students are dealing with two complex and dynamic systems, learning English as a foreign language and using technology (Hubbard, 2009; Motteram, 2013). The study revealed some issues that hinder some students' learning; for example, some students enter the university with poor English, others do not have Internet service or a computer at home, and some others, live in municipalities where the Internet connection continually fails. Perhaps, because of these problems, the declarations made by some students contradict their new role within the social constructivist approach. In this sense, some students commented that it was difficult for them to search for online materials to learn English, and they expressed that the teacher should tell them which Internet pages to use. These results are consistent with the findings of the study conducted by Tri and Nguyen (2014), who found that some 'learners expected that teachers to instruct them how to search for and use learning resources on the Internet' (p. 43). This study agrees with Tri and Nguyen's (2014) proposal of implementing workshops to teach students how to search for online materials to

enhance their learning of EFL through ICTs. Also, it recommends not assuming that students are 'native speakers' of digital technologies (Prensky, 2001) simply because they were born in the digital age, but to take into account the context where they study.

6.7 Limitations of the study and suggestions for future research

This section presents the limitations of the study. The first limitation is that the study did not assess the intervening effect of the moderating factors included in the UTAUT model, namely age, gender, and experience. Further investigations could examine the influence of these moderating factors on behavioural intention to use technology since the present study removed this variable from the model because it did not apply in the context of this research. The second limitation is that data collection took place at one point in time. For this reason, it was not possible to explore participants' pre-and post-usage attitudes towards ICTs. Further studies should examine the dynamics of continuance usage of technology.

Other limitations are that the study explored actual usage of ICTs and attitudes towards technology; however, it did not examine the relationship between the use of ICTs and students' performance, or whether the use of appropriate equipment and software improves students' outcomes, and therefore, the learning process. Hence, more investigation is needed to explore these themes.

6.8 Significance of the study

McKay (2006) said 'Research contributes to more effective teaching, not by offering definitive answers to pedagogical questions, but rather by providing new insights into the teaching and learning processes' (p. 1). In the same way, this investigation contributes to the extension of knowledge providing new insight into the field of language learning through technology in higher education within the blended learning modality.

This study used the UTAUT model as a theoretical framework, which is one of the most prominent models that has been applied and tested for predicting system usage and making decisions related to the adoption and use of technology in numerous fields (Chao, 2019). It provides a framework that not only describes the acceptance of ICTs but explains the actual use of new technologies (Venkatesh *et al.,* 2003) (see section 2.7). However, the study adapted the model according to the context of the investigation. The reason for this is that the university where the study took place established the use of ICTs as mandatory. The initial resistance of the faculty to the innovation motivated the researcher to examine participants' attitudes towards ICTs (see section 1.6). Therefore, the study used an adapted version of the UTAUT model to examine the

factors that contribute to teachers and students' attitudes towards technologies that were already in use, instead of exploring the factors that affect their acceptance. For this reason, the study also examined the actual use of ICTs and continuance intention to use those ICTs.

The modifications to the model consisted of replacing the construct named behavioural intention to use by *attitudes* (Ajzen and Fishbein, 1977), the addition of the constructs *ICT self-efficacy* (Bandura, 1986) as an independent variable, and *continuance intention to use* (Bhattacherjee, 2001) as a dependent variable. Additionally, as explained in section 3.3.1, the investigation did not examine the effect of the moderating factors of the UTAUT model because they were not applicable in the context of this study.

This study provides new insight into the field of language learning with technology at a tertiary context within the blended learning environment in several ways. At the theoretical level, it contributes to the Unified Theory of Acceptance and Use of Technology by adding new constructs to the model and giving attitudes a central role. It is the first study that has proposed and tested an adapted version of the UTAUT model to establish the factors that contribute to EFL teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL, in addition to determining the actual use of technologies and continuance intention to use those technologies. The research literature says that understanding EFL teachers and students' attitudes towards technology is essential since they may influence its integration and use (Gilakjani and Leong, 2012). Moreover, teachers' attitudes towards new technologies not only impact their teaching practices but also influence their students' attitudes and their future decisions to adopt the technology (Bouchefra and Baghoussi, 2017).

As the UTAUT model states, the attributes of technology, performance expectancy followed by effort expectancy, were the most important motivators for EFL teachers and students to use and desire to continue to use ICTs; which means that the perceived usefulness and ease of use of technology strongly contribute to teachers and students' positive attitudes towards the use of ICTs. On the other hand, facilitating conditions proved they can negatively affect teachers and students' attitudes toward ICTs if the conditions in which the technology is used do not improve. This contextual factor demonstrated that the slow response of the technical support department, lack of equipment, Internet failures, and even the arrangement of the computers in the classroom, among others, may affect the teaching and learning of EFL.

The UTAUT model has proved to be very useful to analyse the predictive power of the factors that

contribute to teachers and students' attitudes towards the use of ICTs in the teaching and learning of EFL. Moreover, the strong association between attitudes, actual use, and continuance intention to use shows, without indicating causality, that attitudes are important to determine teachers and students' decisions of usage and future use of ICTs. Therefore, this study recommends the reincorporation of attitudes in the model as it used to be during the designing phase of UTAUT.

Concerning technology usage, the study brings to the surface a clear understanding of the links between the expectation of technology use and its actual use, by demonstrating that there is a need for an institutional policy that includes a systematic strategy for the teaching of English language with technology (Hughes and Tulimirovic, 2015). Also, it reveals the necessity for the implementation of ongoing programs for teachers' professional development that help them become skilful in a broader range of ICTs, which will enable them to use more specialised technologies to teach English in an integrated way, avoiding overemphasising some areas of the language and neglecting others. This information can be useful for making informed decisions about the selection and systematic application of new technologies in the EFL area.

Additionally, the study contributes to the knowledge society by providing three types of affordances of ICTs that emerged from the data to facilitate language learning, as well as explaining their impact on the teaching and learning of EFL, namely a) language skill development affordances; b) social affordances, and c) educational affordances (see section 5.2). Haines (2015) asserts that developing an awareness of the affordances and constraints of ICTs may be useful to have a better understanding of the different ways they can be utilised in the language classroom. In this study, teachers and students demonstrated their awareness of the affordances and limitations of ICTs. In the case of teachers, they overcame the limitations of Smrt by using additional software (e.g., the educational platform *Schoology*) and building communities of practice (Wenger, 1998) to get support from more experienced colleagues. As for students, they proved to be aware of the learning possibilities offered by ICTs in the way they use them to communicate with their teacher or peers, make their own decisions, exercise autonomy in learning, and to transfer the skills acquired in their English class to different areas of language or other subjects. Students demonstrated to be aware not only of the affordances of ICTs to enhance their learning but to facilitate the teaching of their teachers. Furthermore, students declared to evaluate a class as boring or engaging depending on the variety of ICTs used by the teacher.

Even though ICTs provide teachers and students with numerous benefits, there are some barriers that hinder their use in language teaching and learning (Harrington, 2010; Gilakjani, 2014; Mirzajani *et al.*, 2015). A significant contribution of this investigation to the knowledge society

consists of the identification of barriers that specifically affect the area of language learning with technology. For instance, students tend to 'self-mute' (i.e., stop writing) in online collaborative writing activities because they feel pressured by the teacher or more advanced students. This information may be useful to help teachers reflect on how to address error correction when working in online mode to take care of students' affective filter. Another barrier detected is the complexity that language learning with technology entailed when combined with students' poor linguistic competences. Being aware of this barrier could help teachers adjust or think of new teaching strategies, considering that entering the university with poor English is sometimes beyond students' control as broadly depends on the quality of English language teaching in previous educational levels. Likewise, avoiding the use of Spanish as the language of instruction could help, since it indirectly affects the use of technology.

Although the findings of a case study cannot be generalised, the insight provided by this study into the field of language learning with technology may be of great help for educational institutions and language teachers that investigate the teaching and learning of EFL within the blended learning modality.

I have chosen to finish this thesis with the following quote:

> ICTs can contribute to universal access to education, equity in education, the delivery of quality learning and teaching, teachers' professional development and more efficient education management, governance and administration. (UNESCO, 2016)

List of References

(2016) 'Information Technology', *Merriam-Webster.com*. Available at: https://www.merriam-webster.com/dictionary/information%20technology.

Aborisade, P.A. (2013) 'Blended Learning in English for Academic Purposes Courses: A Nigerian Case Study ', in Tomlinson, B. and Whittaker, C. (eds.) *Blended Learning in English Language Teaching: Course Design and Implementation*. London: British Council pp. 35-41.

Abunowara, A.M. (2014) 'Using Technology in EFL/ESL Classroom', *International Journal of Humanities and Cultural Studies (IJHCS)*, 1(2), p. 18.

Adalier, A. (2012) 'Turkish and English Language Teacher Candidates' Perceived Computer Self-Efficacy and Attitudes toward Computer', *Turkish Online Journal of Educational Technology - TOJET*, 11(1), pp. 192-201.

Adams Becker, S. *et al.* (2017) *NMC Horizon Report: 2017 Higher Education Edition*. Austin, Texas: The New Media Consortium.

Agcam, R. and Babanoglu, M.P. (2016) 'An Investigation on EFL Teachers' Attitude toward Teaching Profession', *Higher Education Studies*, 6(3), pp. 21-31.

Ajzen, I. (1991) 'The Theory of Planned Behavior ', *Organizational Behavior and Human Decision Processes*, 50, pp. 179-211.

Ajzen, I. (2005) *Attitudes, Personality, and Behavior. [electronic resource]*. 2nd edn.: Maidenhead, Berkshire, England ; New York : Open University Press, 2005. Mapping social pschology.

Ajzen, I. and Fishbein, M. (1977) 'Attitude-behavior relations: A theoretical analysis and review of empirical research', *Psychological Bulletin*, 84(5), pp. 888-918.

Ajzen, I. and Fishbein, M. (1980) *Understanding Attitudes and Predicting Social Behavior*. Englewood Cliffs, N.J: Prentice-Hall.

Akbari, E., Pilot, A. and Simons, P. (2015) 'Autonomy, Competence, and Relatedness in Foreign Language Learning through Facebook', *Computers in Human Behavior*, 48, pp. 126-134.

Akkoyunlu, B. and Soylu, M.Y. (2008) 'A Study of Student's Perceptions in a Blended Learning Environment Based on Different Learning Styles' 11. pp. 183-193. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=edswss&AN=000254930100013&site=eds-live.

Al-Alwan, A.F. and Mahasneh, A.M. (2014) 'Teachers' Self-efficacy as Determinant of Students' Attitudes toward School: A Study at the School Level', *Review of European Studies*, 6(1), pp. 171-179.

Al-Kamel, M. (2018) 'The positive Effect of ICT on the English Language Learning and Teaching', *Dialoguing Borders: Vital Issues in Humanities, Commerce, IT and Management*. Mahrashtra, India.

Al-Seghayer, K. (2016) 'Factors that Facilitate or Hinder the Use of Computer-Assisted Reading in the L2 Reading Classroom', *Reading Matrix: An International Online Journal*, 16(2), pp. 64-80.

List of References

Al Dafaei, I.M. *et al.* (2013) 'The Mediating Effect of Self-Efficacy towards the Relationship between Attitudes and Level of Use towards Instructional Computer Technology in Oman', *International Journal of Asian Social Science*, Zurida(12), p. 2382.

al hinai, I. (2015) *Teachers Doing Research with Their Own Students: a Blessing or a Curse?*

Al Qasim, N. and Al Fadda, H. (2013) 'From Call to Mall: The Effectiveness of Podcast on EFL Higher Education Students' Listening Comprehension', *English Language Teaching*, 6(9), pp. 30-41.

Albirini, A. (2006) 'Teachers' Attitudes toward Information and Communication Technologies: the Case of Syrian EFL Teachers', *Computers & Education*, 47, pp. 373-398.

Alexander, M.W. *et al.* (2009) 'Comparing AACSB Faculty and Student Online Learning Experiences: Changes between 2000 and 2006', *Journal of Educators Online*, 6(1).

Alghasab, M. (2016) 'The Impact of EFL Teachers' Mediation in Wiki-Mediated Collaborative Writing Activities on Student-Student Collaboration. In S. Papadima-Sophocleous, L. Bradley & S. Thouësny (Eds), CALL communities and culture – short papers from EUROCALL 2016 (pp. 1-6)'.

Alkhawaldeh, N.I. and Menchaca, M. (2014) 'Barriers to Utilizing ICT in Education in Jordan', *International Journal on E-Learning*, 13(2), p. 127.

Alresheed, S. and Leask, M. (2015) 'Integrating Computer-Assisted Language Learning in Saudi Schools: A Change Model', *Turkish Online Journal of Educational Technology - TOJET*, 14(4), pp. 69-77.

Alshare, K. and Lane, P. (2011) 'Predicting Student-Perceived Learning Outcomes and Satisfaction in ERP Courses: An Empirical Investigation', *Communications of the Association for Information Systems*, 28(1), pp. 572–584.

Alshehri, M.A. (2012) *Using the UTAUT Model to Determin Factors that Affecting Acceptance and Use of E-government Services in the Kindom of Saudi Arabia*. Doctor of Phylosophy. Griffith University. Available at: https://www120.secure.griffith.edu.au/rch/file/1c7cab3e-da14-452a-8379-95387756bd56/1/Alshehri_2013_02Thesis.pdf.

Altbach, P.G., Reisberg, L. and Rumbley, L.E. (2009) *Trends in Global Higher Education: Tracking an Academic Revolution*. Available at: http://unesdoc.unesco.org/images/0018/001832/183219e.pdf.

Alzahrani, M.G. and O'Toole, J.M. (2017) 'The Impact of Internet Experience and Attitude on Student Preference for Blended Learning', *Journal of Curriculum and Teaching*, 6(1), pp. 65-78.

Alzahrani, M.G. and O'Toole, J.M. (2017) 'The Impact of Internet Experience and Attitude on Student Preference for Blended Learning', *Journal of Curriculum and Teaching*, 6(1), p. 14.

Alzaidiyeen, N.J. (2017) 'English as a Foreign Language Students Attitudes towards the Utilization of iPad in Language Learning', *Malaysian Online Journal of Educational Technology*, 5(3), pp. 16-24.

Allen, I.E. *et al.* (2016) *Online Report Card: Tracking Online Education in the United States* (978-0-9840288-8-7). Available at: http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED572777&site=eds-live.

Arteaga, C. (2011) 'Uso de las TIC para el Aprendizaje del Inglés en la Universidad Autónoma de Aguascalientes', *Apertura. Revista de innovación educativa*3, (2).

Attuquayefio, S.N. and Addo, H. (2014) 'Using the UTAUT Model to Analyze Students' ICT Adoption', *International Journal of Education and Development using Information and Communication Technology*, 10(3), pp. 75-86.

Attwell, G. and Hughes, J. (2010) 'Pedagogic Approaches to Using Technology for Learning - Literature review', *Lifelong Learning UK. Skills for Learning Professionals*, p. 78. Available at: Pedagogical-appraches-for-using-technology-literature-review-january-11-FINAL.pdf.

Ausubel, D.P. (1968) *Educational psychology; a cognitive view*. New York: Holt, Rinehart and Winston.

Awada, G. and Diab, H.B. (2018) 'The Effect of Google Earth and Wiki Models on Oral Presentation Skills of University EFL Learners', *International Journal of Teaching and Learning in Higher Education*, 30(1), pp. 36-46.

Aydin, S. (2013) 'Teachers' Perceptions about the Use of Computers in EFL Teaching and Learning: The Case of Turkey', *Computer Assisted Language Learning: An International Journal*, 3(3), pp. 214-233.

Bagozzi, R.P., Davis, F.D. and Warshaw, P.R. (1992) 'Development and Test of a Theory of Technological Learning and Usage', *Human Relations*, 45(7), pp. 659-686.

Bandura, A. (1977) 'Self-efficacy: Toward a unifying theory of behavioral change', *Psychological Review*, 84(2), pp. 191-215.

Bandura, A. (1978) 'Reflections on Self-efficacy', in Rachman, S. (ed.) *Advances in Behavioral Research and Therapy*. Oxford, England: Pergamon Press

pp. 237-269.

Bandura, A. (1982) 'Self-efficacy mechanism in human agency', *American Psychologist*, 37(2), pp. 122-147.

Bandura, A. (1986) *Social foundations of thought and action : a social cognitive theory*. Englewood Cliffs, N.J. : Prentice Hall, 1986. Prentice Hall series in social learning theory.

Bandura, A. (1989) 'Regulation of Cognitive Processes through Perceived Self-efficacy', *Developmental Psychology*, 25(5), pp. 729-735.

Bandura, A. (1999) 'Exercise of Personal and Collective Efficacy in Changing Societies', in Bandura, A. (ed.) *Self-efficacy in Changing Societies*.

Bax, S. (2003) 'CALL – Past, present and future', *System*, 31(1), pp. 13-28.

Bax, S. (2011) 'Normalisation Revisited: The Effective Use of Technology in Language Education', *International Journal of Computer-Assisted Language Learning and Teaching (IJCALLT)* 1(2), pp. 1-15.

Beauchamp, G. and Kennewell, S. (2010) 'Interactivity in the Classroom and its Impact on Learning', *Computers & Education*, 54, pp. 759-766.

Becta (2004) *A Review of the Research Literature on Barriers to the Uptake of ICT by Teachers*. Available at: http://dera.ioe.ac.uk/1603/1/becta_2004_barrierstouptake_litrev.pdf (Accessed: 21/11/2016).

Becta (2007) *Harnessing Technology Review 2007: Progress and Impact of Technology in Education*. Available at:

http://dera.ioe.ac.uk/7368/7/harnessing_technology_review07_Redacted.pdf (Accessed: 21/11/2016).

Becuwe, H. *et al.* (2017) 'Conditions for the Successful Implementation of Teacher Educator Design Teams for ICT Integration: A Delphi Study', *Australasian Journal of Educational Technology*, 33(2), pp. 159-172.

Beetham, H. and Sharpe, R. (2007) *An Introduction to Rethinking Pedagogy for a Aigital Age*. Abingdon, Oxon: Routledge. Rethinking Pedagogy for a Digital Age.

Bell, J. (2010) *Doing your research project : a guide for first-time researchers in education, health and social science*. 5th edn. Maidenhead: Open University Press : McGraw-Hill Education. Open UP study skills.

Beneitone, P. *et al.* (eds.) (2007) *Reflexiones y Perspectivas de la Educación Superior en América Latina. Informe Final, Proyecto Tuning America Latina 2004-2007*. España: Publicaciones de la Universidad de Deusto.

Berg, B.L. (2001) *Qualitative Research Methods for the Social Sciences*. Allyn and Bacon.

Berkant, H.G. (2016) 'Faculty of Education Students' Computer Self-Efficacy Beliefs and Their Attitudes towards Computers and Implementing Computer Supported Education', *European Journal of Contemporary Education*, 15(1), pp. 123-135.

Bhattacherjee, A. (2001) 'Understanding Information Systems Continuance: An Expectation-Confirmation Model', (3), p. 351.

Bhattacherjee, A. and Premkumar, G. (2004) 'Understanding Changes in Belief and Attitude toward Information Technology Usage: A Theoretical Model and Longitudinal Test', *MIS Quarterly*, 28(2), pp. 229-254.

Bindu, C.N. (2017) 'Attitude towards, and Awareness of Using ICT in Classrooms: A Case of Expatriate Indian Teachers in UAE', *Journal of Education and Practice*, 8(1), pp. 10-17.

Blackley, S. and Sheffield, R. (2015) 'Digital Andragogy: A Richer Blend of Initial Teacher Education in the 21st Century', *Issues in Educational Research*, (4), p. 397.

Blake, R. (2000) 'Computer Mediated Communication: A Window on L2 Spanish Interlanguage', *Language Learning & Technology: A Refereed Journal for Second and Foreign Language Educators*, 1(1), pp. 120-36.

Blake, R. (2016) 'Technology and the Four Skills', *Language Learning and Technology*, 20(2), pp. 129-142.

Borg, S. (2010) 'Language Teacher Research Engagement', *Language Teaching*, 43(4), pp. 391-429.

Borjian, A. (2015) 'Learning English in Mexico: Perspectives from Mexican Teachers of English', *CATESOL Journal*, 27(1), pp. 163-173.

Bouchefra, M. and Baghoussi, M. (2017) 'Algerian EFL University Teachers' Attitudes towards Computer Assisted Language Learning: The Case of Djilali Liabes University', *International Journal of Education and Literacy Studies*, 5(2), pp. 132-139.

Boyles, P.C. (2011) 'Maximizing Learning Using Online Student Assessment', *Online Journal of Distance Learning Administration*, 14(3).

Bozdogan, D. and Özen, R. (2014) 'Use of ICT Technologies and Factors Affecting Pre-Service ELT Teachers' Perceived ICT Self-Efficacy', *Turkish Online Journal of Educational Technology - TOJET*, 13(2), pp. 186-196.

Brislin, R.W. (1986) 'The Wording and Translation of Research Instruments', in Lonner, W.J. and Berry, J.W. (eds.) *Field methods in cross-cultural research.* Thousand Oaks, CA: Sage Publications, Inc, pp. 137-164.

Brown, M.G. (2016) 'Blended Instructional Practice: A Review of the Empirical Literature on Instructors' Adoption and Use of Online Tools in Face-to-Face Teaching', *Internet and Higher Education*, 31, pp. 1-10.

Brown, S.A. *et al.* (2002) 'Do I Really Have to? User Acceptance of Mandated Technology', *European Journal of Information Systems*, 11(4), p. 283.

Bueno-Alastuey, M.C. and López Pérez, M.V. (2014) 'Evaluation of a Blended Learning Language Course: Students' Perceptions of Appropriateness for the Development of Skills and Language Areas', *Computer Assisted Language Learning*, 27(6), pp. 509-527.

Cahyono, B.Y. and Mutiaraningrum, I. (2016) 'Indonesian EFL Teachers' Familiarity with and Opinion on the Internet-Based Teaching of Writing', *English Language Teaching*, 9(1), pp. 199-208.

Cakir, R. and Solak, E. (2014) 'Exploring the Factors Influencing E-Learning of Turkish EFL Learners through TAM', *Turkish Online Journal of Educational Technology - TOJET*, 13(3), pp. 79-87.

Canning, J. (2014) *Statistics for the Humanities*. 1st edn. Available at: http://www.statisticsforhumanities.net/book/wp-content/uploads/2014/07/StatisticsforHumanities%205Sept14.pdf (Downloaded: 16/June/2017).

Celik, V. and Yesilyurt, E. (2013) 'Attitudes to Technology, Perceived Computer Self-Efficacy and Computer Anxiety as Predictors of Computer Supported Education', *Computers & Education*, 60(1), pp. 148-158.

Cianciotta, M.A. (2016) *Stimuli Influencing Small Business Owner Adoption of a Software-as-a-Service Solution: A Quantitative Study*. ProQuest LLC. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED567728&site=eds-live http://gateway.proquest.com/openurl?url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:dissertation&res_dat=xri:pqm&rft_dat=xri:pqdiss:10022986.

Cohen, L., Manion, L. and Morrison, K. (2011) *Research Methods in Education. [electronic resource]*. 7th edn.: London : Routledge, 2011.

Coll, C. (2008) 'Aprender y Enseñar con las TIC: expectativas, realidad y potencialidades', *Boletín de la Institución Libre de Enseñanza*, pp. 17-40.

Comas-Quinn, A. (2011) 'Learning to Teach Online or Learning to Become an Online Teacher: An Exploration of Teachers' Experiences in a Blended Learning Course', *ReCALL: The Journal of EUROCALL*, 3(3), pp. 218-232.

Combes, B., Pagram, J. and Gulatee, Y. (2018) 'Which Tech will I Use? Trends in Students' Use and Ownership of Technology in a Thai University, an Ongoing Study', *Journal of ICT Research and Applications*, 12(2), pp. 138-153.

Compeau, D., Higgins, C.A. and Huff, S. (1999) 'Social Cognigtive Theory and Individual Reactions to Computing Technology: A Longitudinal Study', *MIS Quarterly*, 23(2), pp. 145-158.

List of References

Compeau, D.R. and Higgins, C.A. (1995) 'Computer Self-Efficacy: Development of a Measure and Initial Test', *MIS Quarterly*, 19(2), pp. 189-211.

Conole, G. and Dyke, M. (2004) *What are the affordances of information and communication technologies?*

Cox, M. (2014) 'The Impact of Technology on Teaching and Learning: Lessons from Research', in Leask, M. and Pachler, N. (eds.) *Learning to Teach Using ICT in the Secondary School*. London, UK and New York, NY: Routledge.Taylor & Francis Group, p. 260.

Cox, M., Preston, C. and Cox, K. (2000) 'What Factors Support or Prevent Teachers from Using ICT in their Classrooms?', *Education-line*.

Craig, R. and Williams, A. (2015) 'Data, Technology, and the Great Unbundling of Higher Education', *Educause Review*, 50(5), pp. 11-25.

Creswell, J.W. (2003) *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. 2nd edn. Thousand Oaks, CA: Sage Publications.

Creswell, J.W. (2014) *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. 4th edn. Los Angeles, Calif.; London: Sage.

Crook, C. *et al.* (2010) *The Impact of Technology: Value-added Classroom Practice Final Report* Becta. Available at: http://oro.open.ac.uk/34523/1/the_impact_of_technology.pdf.

Cruz, E.J. and Velasco, L.F. (2016) 'Understanding the Role of Teaching Materials in a Beginners' Level English as a Foreign Language Course: A Case Study', *Profile Issues in Teachers' Professional Development, Vol 18, Iss 2, Pp 125-137 (2016)*, (2), p. 125.

Chan Yuen, F. *et al.* (2011) 'Pre-service Teachers' Training in Information, Communication and Technology for the ESL Classrooms in Malaysia', *Turkish Online Journal of Distance Education (TOJDE)*, 12(3), p. 97.

Chandler, D. and Munday, R. (2011) *A Dictionary of Media and Communication. [electronic resource]*. Oxford ; New York : Oxford University Press, 2011. 1st ed. Oxford paperback reference.

Chang, C.C. *et al.* (2013) 'The Influence of Perceived Convenience and Curiosity on Continuance Intention in Mobile English Learning for High School Students Using PDAs', *Technology, Pedagogy and Education*, 22(3), pp. 373-386.

Chao, C.-M. (2019) 'Factors Determining the Behavioral Intention to Use Mobile Learning: An Application and Extension of the UTAUT Model', *Frontiers in psychology*, 10, pp. 1652-1652.

Chapelle, C. (2001) *Computer applications in second language acquisition: foundations for teaching, testing and research*. Cambridge: Cambridge University Press.

Chapelle, C. (2003) *English language learning and technology. [electronic resource]: lectures on applied linguistics in the age of information and communication technology*. Philadelphia: John Benjamins Pub., 2003. Language learning and language teaching: v. 7.

Charbonneau-Gowdy, P. (2015) 'It Takes a Community to Develop a Teacher: Testing a New Teacher Education Model for Promoting ICT in Classroom Teaching Practices in Chile', *Electronic Journal of e-Learning*, 13(4), pp. 237-249.

Chen, Y.-L. (2008) 'A Mixed-Method Study of EFL Teachers' Internet Use in Language Instruction', *Teaching and Teacher Education*, 24, pp. 1015-1028.

Cho, M.-H. and Cho, Y. (2016) 'Online Instructors' Use of Scaffolding Strategies to Promote Interactions: A Scale Development Study', *International Review of Research in Open and Distributed Learning*, 17(6), pp. 108-120.

Chuttur, M. (2009) 'Overview of the Technology Acceptance Model: Origins, Developments and Future Directions', *All Sprouts Content. Paper 290*.

Darnell, B. (2014) *Achievement Strategies, Inc.* Available at: http://achievementstrategies.org/.

Dashtestani, R. (2014) 'Exploring English as a Foreign Language (EFL) Teacher Trainers' Perspectives on Challenges to Promoting Computer Literacy of EFL Teachers', *JALT CALL Journal*, 10(2), pp. 139-151.

Davidson, L.Y.J., Richardson, M. and Jones, D. (2014) 'Teachers' Perspective on Using Technology as an Instructional Tool', *Research in Higher Education Journal*, 24.

Davies, G. and Hewer, S. (2012) *Introduction to New Technologies and How they Can Contribute to Language Learning and Teaching. Module 1.1 in Davies G. (ed.)* Available at: http://www.ict4lt.org/en/en_mod1-1.htm (Accessed: 10/10/2017).

Davis, F. (1985) *A Technology Acceptance Model for Empirically Testing New End-user Information Systems: Theory and Results*. Massachusetts Institute of Technology. Available at: https://www.researchgate.net/publication/354650.

Davis, F.D. (1993) 'User Acceptance of Information Technology: System Characteristics, User Perceptions and Behavioral Impacts', *International Journal of Man-Machine Studies*, 38(3), pp. 475-487.

Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1989) 'User Acceptance of Computer Technology: A Comparison of Two Theoretical Models', *Management Science*, 35(8), pp. 982-1003.

Dawson, S., Manderson, L. and Tallo, V.L. (1993) 'A manual for the use of focus groups ', *Boston, MA: International Nutrition Foundation for Developing Countries*.

de Aldama, C. and Pozo, J.I. (2016) 'How Are ICT Used in the Classroom? A Study of Teachers' Beliefs and Uses', *Electronic Journal of Research in Educational Psychology*, 14(2), pp. 253-286.

del Puerto, F.G. and Gamboa, E. (2009) 'The Evaluation of Computer-Mediated Technology by Second Language Teachers: Collaboration and Interaction in CALL', *Educational Media International*, 46(2), pp. 137-152.

Demirtas, H., Comert, M. and Ozer, N. (2011) 'Pre-Service Teachers' Self-Efficacy Beliefs and Attitudes towards Profession', *Education and Science*, 36(159), pp. 96-111.

Díaz, F. and Hernández, G. (2002) *Estrategias Docentes para un Aprendizaje Significativo. Una Interpretación Constructivista*. 2nd edn. Mexico: McGraw-Hill Interamericana.

Dizon, G. (2016) 'Measuring Japanese EFL Student Perceptions of Internet-Based Tests with the Technology Acceptance Model', *The Electronic Journal for English as a Second Language*, 20(2), p. 17.

Dogan, A. and Akbarov, A. (2016) 'Teachers' Attitudes toward the Usage of Mobile Devices in EFL Classroom', *European Journal of Educational Research*, 5(1), pp. 11-17.

Dörnyei, Z. (2001) *Motivational Strategies in the Language Classroom. [electronic resource]*. Cambridge: Cambridge University Press, 2001. Cambridge Language Teaching Library.

Dörnyei, Z. (2007) *Research Methods in Applied Linguistics : Quantitative, Qualitative, and Mixed Methodologies*. Oxford: Oxford University Press.

Dreyer, C. and Nel, C. (2003) 'Teaching Reading Strategies and Reading Comprehension within a Technology-Enhanced Learning Environment', *System*, 31, pp. 349-365.

Drigas, A. and Charami, F. (2014) 'ICTS in English Learning and Teaching', *International Journal of Recent Contributions from Engineering, Science & IT (iJES)*, 2(4), p. 10.

Driscoll, M. (2002) 'Blended Learning: Let's Get Beyond the Hype [online]', *IBM Global Services*.

Dudeney, G. and Hockly, N. (2007) *How to… Teach English with Technology*. Harlow: Pearson Education Limited.

Dwivedi, Y.K. *et al.* (2017) 'Re-Examining the Unified Theory of Acceptance and Use of Technology (UTAUT): Towards a Revised Theoretical Model', *Information Systems Frontiers*, pp. 1-16.

Dziuban, C. *et al.* (2015) 'A Deconstruction of Blended Learning'. Presented at the 11th Annual Sloan-C Blended Learning Conference and Workshop.

Dziuban, C. *et al.* (2018) 'Blended Learning: The New Normal and Emerging Technologies', *International Journal of Educational Technology in Higher Education*, 15(1).

Dziuban, C.D. *et al.* (2016) *Conducting Research in Online and Blended Learning Environments: New Pedagogical Frontiers*. Taylor and Francis Inc.

Egbert, J. *et al.* (2011) 'Moving Forward: Anecdotes and Evidence Guiding the Next Generation of CALL', *International Journal of Computer-Assisted Language Learning & Teaching*, 1(1), p. 1.

Ellsworth, J.B. (2000) *Surviving Change: A Survey of Educational Change Models*. Syracuse, N. Y.: Eric Clearinghouse on Information and Technology.

ENFACE (2007) *Modelo Educativo del Centro de Estudios Superiores del Estado de Sonora. ENFACE*. Available at: https://www.ues.mx/Docs/aspirantes/modelo/LBG_modelo_ENFACE.pdf.

Engelbert, R. and Graeml, A.R. (2013) 'Use of Information Technology in Mandatory Settings: A Proposal for an Objective View of Appropriation', *Proceedings of the Nineteenth Americas Conference on Information Systems*. Chicago, Illinois, August 15-17, 2013 pp. 3833-3841. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=edselc&AN=edselc.2-52.0-84893261012&site=eds-live.

Ertmer, P.A. (1999) 'Addressing First- and Second- Order Barriers to Change: Strategies for Technology Integration', (4), p. 47.

ETS (2002) *Digital Transformation A Framework for ICT Literacy: A Report of the InternationalICT Literacy Panel. Educational Testing Services* Available at: https://www.ets.org/Media/Tests/Information_and_Communication_Technology_Literacy/ictreport.pdf.

Fageeh, A.I. (2015) 'EFL Student and Faculty Perceptions of and Attitudes towards Online Testing in the Medium of Blackboard: Promises and challenges', *JALT CALL Journal*, 11(1), pp. 41-62.

Farr, F. and Murray, L. (2016) *The Routledge handbook of language learning and technology*.

Field, A.P. (2009) *Discovering Statistics Using SPSS : (and sex, drugs and rock 'n' roll)*. 3rd edn. Los Angeles: SAGE Publications.

Fischer, C.T. (2005) *Qualitative Research Methods for Psychologists. [electronic resource]: Introduction to Empirical Studies*. Amsterdam ; Boston, MA : Elsevier Academic Press, 2005.

Fishbein, M. and Ajzen, I. (1975) *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*. Reading, Mass.: Addison-Wesley, 1975. Addison-Wesley series in social psychology.

Fisher, T., Higgins, C. and Loveless, A. (2006) *Teachers Learning with Digital Technologies: a Review of Research and Projects* Available at: https://www.nfer.ac.uk/publications/FUTL67/FUTL67.pdf (Downloaded: June 6th, 2016).

Fitzpatrick, A. (2004) *Information and Communication Technologies in the Teaching and Learning of Foreign Languages: State-of-the-Art, Needs and Perspectives. Analytical Survey*. UNESCO Institute for Information Technologies in Education, Moscow.

Fleck, J. (2012) 'Blended learning and learning communities: Opportunities and challenges', *Journal of Management Development*, 31, pp. 398-411.

Floridi, L. (2014) *The 4th Revolution: How the Infosphere is Reshaping Human Reality*. Oxford: Oxford University Press.

Floris, F.D. (2014) 'Using Information and Communication Technology (ICT) to Enhance Language Teaching & Learning: An Interview with Dr. A. Gumawang Jati', *TEFLIN Journal: A Publication on the Teaching & Learning of English*, 25(2), p. 139.

Forkosh-Baruch, A. and Avidov-Ungar, O. (2019) 'ICT Implementation in Colleges of Education: A Framework for Teacher Educators', *Journal of Information Technology Education: Research*, 18, pp. 207-229.

Franciosi, S.J. (2017) 'The Effect of Computer Game-Based Learning on FL Vocabulary Transferability', *Journal of Educational Technology & Society*, (1), p. 123.

Freidhoff, J.R. (2008) 'Reflecting on the Affordances and Constraints of Technologies and Their Impact on Pedagogical Goals', *Journal of Computing in Teacher Education*, 24(4), pp. 117-122.

Friesen, N. (2012) *Report: Defining Blended Learning*. Available at: http://learningspaces.org/papers/Defining_Blended_Learning_NF.pdf (Accessed: October 9th, 2017).

Frolova, N. (2017) 'Electronic Means of Foreign Language Learning in the System of Higher Education', *Educational Research and Reviews*, 12(3), pp. 116-119.

Gallagher, S. (2012) 'Multiple aspects in the sense of agency', *New Ideas in Psychology*, 30(1), pp. 15-31.

García, A.N. (2018) *Ecuadorian High School Teachers' Perceptions on ICT use in their EFL Classes*. Universidad Técnica Particular de Loja.

Gardiner, K. (2015) 'Reasons to Be Open – Embracing the Digital Landscape', *Paper presented at the Association for Learning Technology Conference (ALT-C)*. 8-10 Sep., 2015.

Gardner, R.C. (1985) *Social Psychology and Second Language Learning : The Role of Attitudes and Motivation*. London : Edward Arnold, 1985. The social psychology of language: 4.

Garrison, D.R., Anderson, T. and Archer, W. (2000) 'Critical Inquiry in a Text-Based Environment: Computer Conferencing in Higher Education', *Internet and Higher Education*, 2(2-3), pp. 87-105.

Garrison, D.R. and Kanuka, H. (2004) 'Blended Learning: Uncovering Its Transformative Potential in Higher Education', *Internet and Higher Education*, 7(2), pp. 95-105.

Garrison, D.R. and Vaughan, N.D. (2008) *Blended Learning in Higher Education: Framework, Principles, and Guidelines*. San Francisco, CA, US: Jossey-Bass.

Garrison, D.R. and Vaughan, N.D. (2013) 'Institutional Change and Leadership Associated with Blended Learning Innovation: Two Case Studies', *Internet and Higher Education*, 18, pp. 24-28.

Gedik, N., Kiraz, E. and Ozden, M.Y. (2013) 'Design of a Blended Learning Environment: Considerations and Implementation Issues', *Australasian Journal of Educational Technology*, 29(1), pp. 1-19.

Gilakjani, A.P. (2014) 'A Detailed Analysis over Some Important Issues towards Using Computer Technology into the EFL Classrooms', *Universal Journal of Educational Research*, 2(2), pp. 146-153.

Gilakjani, A.P., Leong, L.-M. and Ismail, H.N. (2013) 'Teachers' Use of Technology and Constructivism', *I.J. Modern Education and Computer Science*, 5(4), pp. 49-63.

Gilakjani, A.P. and Leong, L.M. (2012) 'EFL Teachers' Attitudes toward Using Computer Technology in English Language Teaching', *Theory and Practice in Language Studies*, 2(3), pp. 630-636.

Gilakjani, A.P., Sabouri, N.B. and Zabihniaemran, A. (2015) 'What Are the Barriers in the Use of Computer Technology in EFL Instruction?', *Review of European Studies*, 7(11), pp. 213-221.

Gilbert, A. (2015) 'An Exploration of the Use of and the Attitudes Toward Technology in First-Year Instrumental Music'.

Gilbert, J. (2013) 'A Collaborative Online Reading and Research Project', in Tomlinson, B. and Whittaker, C. (eds.) *Blended Learning in English Language Teaching: Course Design and Implementation*. London: British Council, pp. 27-34.

Gillies, R.M. (2008) 'The Effects of Cooperative Learning on Junior High School Students' Behaviours, Discourse and Learning During a Science-Based Learning Activity', *School Psychology International*, 29(3), pp. 328-347.

Glazer, F.S. (2012) 'Blended Learning [electronic resource] : Across the Disciplines, Across the Academy', in Glazer, F.S. (ed.) *New Pedagogies and Practices for Teaching in Higher Education Series*. 1st edn. Sterling, Va.: Stylus Pub.

Golonka, E.M. *et al.* (2014) 'Technologies for Foreign Language Learning: A Review of Technology Types and Their Effectiveness', *Computer Assisted Language Learning*, 27(1), pp. 70-105.

González, J. and Wagenaar, R. (2006) *Tuning Educational Structures in Europe: Universities' Contribution to the Bologna Process: An Introduction*. Bilbao: University of Deusto; Groningen: University of Groningen, cop. 2006.

Gorbani, J. (2015) 'Assessing Similarities between E-learning and Adult Education', *Life Science Journal*, 12(9), pp. 86-90.

Gordon, N. (2014) *Flexible pedagogies: Technology Enhanced Learning*. Available at: https://www.heacademy.ac.uk/flexible-pedagogies-technology-enhanced-learning.

Graham, C.R. (2006) 'Blended learning systems: Definition, current trends, and future directions. In C. J. Bonk & C. R. Graham (Eds.)', in *The handbook of blended learning: Global perspectives, local designs*. San Francisco, CA: Pfeiffer, pp. 3-21.

Graham, C.R. (2011) 'Theoretical Considerations for Understanding Technological Pedagogical Content Knowledge (TPACK)', *Computers & Education*, 57, pp. 1953-1960.

Graham, C.R. and Dziuban, C.D. (2008) 'Blended Learning Environments', in Spector, J.M., Merrill, M. David, Merrienboer, Jeroen Van, & Driscoll, Marcy P. (ed.) *Handbook of research on educational communications and technology* 3rd edn. New York, London: Lawrence Earlbaum Associates. Taylor & Francis Group, pp. 269-276.

Graham, C.R., Woodfield, W. and Harrison, J.B. (2013) 'A Framework for Institutional Adoption and Implementation of Blended Learning in Higher Education', *Internet and Higher Education*, 18, pp. 4-14.

Greene, J.C. and Caracelli, V.J. (1997) 'Defining and Describing the Paradigm Issue in Mixed-Method Evaluation', *New Directions for Evaluation*, (74), pp. 5-17.

Grgurovic, M. (2010) *Technology-Enhanced Blended Language Learning in an ESL Class: A Description of a Model and an Application of the Diffusion of Innovations Theory*. Doctoral Dissertation. Iowa State University.

Gruba, P. and Hinkelman, D. (2012) 'Blending Technologies in Second Language Classrooms', New York: Palgrave Macmillan, pp. 1-181.

Haines, K. (2015) 'Learning to Identify and Actualize Affordances in a New Tool', *Language Learning & Technology: A Refereed Journal for Second and Foreign Language Educators*, 1(1), pp. 165-180.

Hair, J.F. *et al.* (2014) *Multivariate data analysis. [electronic resource]*. Harlow : Pearson, 2014. 7th ed.

Hall, J.K. (2012) *Teaching and Researching Language and Culture*. 2nd edn. New York: Routldedge. Taylor & Francis Group.

Halliday, M.A.K. (1993) 'Towards a Language-Based Theory of Learning', *Linguistics and Education: An International Research Journal*, 5(2), pp. 93-116.

Hammond, M. (2010) 'What is an Affordance and Can it Help us Understand the Use of ICT in Education?', *Education and Information Technologies*, 15(3), pp. 205-217.

Harmer, J. (2007) *The Practice of English Language Teaching*. 4th edn.: Harlow, Longman.

Harrington, A.M. (2010) 'Problematizing the Hybrid Classroom for ESL/EFL Students', *TESL-EJ*, 14(3).

Hashemi, M. and Azizinezhad, M. (2011) 'The Capabilities of Oovoo and Skype for Language Education', *Procedia - Social and Behavioral Sciences*, 28, pp. 50-53.

Hashemi, M. and Aziznezhad, M. (2011) 'Computer Assisted Language Learning Freedom or Submission to Machines?', *Procedia - Social and Behavioral Sciences*, 28, pp. 832-835.

Hernandez-Ramos, P. (2005) 'If Not Here, Where? Understanding Teachers' Use of Technology in Silicon Valley Schools', *Journal of Research on Technology in Education*, 38(1), pp. 39-64.

List of References

Hernandez, D.A., Hueck, S. and Charley, C. (2016) 'General Education and Special Education Teachers' Attitudes towards Inclusion', *Journal of the American Academy of Special Education Professionals*, pp. 79-93.

Hernández, E.T. (2011) ''El Sistema Nacional E-Mexico y su Realidad Social en las Poblaciones Indigenas'', *XI Congreso Nacional de Investigación Educativa* Nuevo Leon, Mexico. p. 9. Available at: http://www.comie.org.mx/congreso/memoriaelectronica/v11/docs/area_13/1045.pdf (Accessed: May 10).

Hernández, R., Fernández, C. and Baptista, P. (2010) *Fundamentos de Metodología de la Investigación*. Madrid: MacGraw-Hill.

Herrington, J. and Oliver, R. (2000) 'An Instructional Design Framework for Authentic Learning Environments', *Educational Technology Research and Development*, (3), p. 23.

Hesse-Biber, S.N. (2010) *Mixed methods research. [electronic resource] : merging theory with practice*. New York : Guilford Press, c2010.

Hesse-Biber, S.N. and Leavy, P. (2006) *The practice of qualitative research*. Thousand Oaks ; London : SAGE Publications, c2006.

Hinkelman, D. and Gruba, P. (2012) 'Power within Blended Language Learning Programs in Japan', *Language Learning & Technology*, 16(2), pp. 46-64.

Hinton, P.R. (2004) *SPSS Explained*. London: Routledge.

Hismanoğlu, M. (2011) *The integration of information and communication technology into current ELT coursebooks: A critical analysis*. 2011 / 01 / 01 /. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=edselc&AN=edselc.2-52.0-84858765816&site=eds-live.

Hoang, N.T. (2015) *EFL Teachers' Perceptions and Experiences of Blended Learning in a Vietnamese University*. Doctor of Education Queensland University of Technology.

Hockly, N. (2016) *Focus on Learning Technologies*. Oxford: Oxford University Press.

Hofmann, J. (2011) ' Blended Learning', Alexandria, VA: American Society for Training & Development.

Huang, C.-K., Lin, C.-Y. and Villarreal, D.S. (2014) 'Contextual Language Learning: Educational Potential and Use of Social Networking Technology in Higher Education'. Research-publishing.net. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED565104&site=eds-live.

Huang, H.-M. and Liaw, S.-S. (2005) 'Exploring Users' Attitudes and Intentions toward the Web as a Survey Tool', *Computers in Human Behavior*, 21, pp. 729-743.

Huang, H.C. (2013) 'E-reading and E-Discussion: EFL Learners' Perceptions of an e-Book Reading Program', *Computer Assisted Language Learning*, 26(3), pp. 258-281.

Huang, R.T. *et al.* (2014) 'Exploring the Moderating Role of Perceived Flexibility Advantages in Mobile Learning Continuance Intention (MLCI)', *International Review of Research in Open and Distance Learning*, 15(3), pp. 140-157.

Hubbard, P. (2004) 'Learner Training for Effective Use of CALL', in Fotos, S. *et al.* (eds.) *New perspectives on CALL for second language classrooms.* Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers, pp. 45-67.

Hubbard, P. (2006) 'Evaluating CALL Software. In L. Ducate and N. Arnold (Eds),' in *Calling on CALL: From Theory and Research to New Directions in Foreign Language Teaching* San Marcos, Texas: CALICO. Pre-publication copy, pp. 1-26.

Hubbard, P. (2009) 'General Introduction', in Hubbard, P. (ed.) *Computer Assisted Language Learning*, pp. 1-20.

Hubbard, P. and Levy, M. (2006) *Teacher Education in CALL. [electronic resource]*. Philadelphia, PA : John Benjamins Pub. Co., c2006. Lanuage learning and language teaching: v. 14.

Hue, L.T. and Ab Jalil, H. (2013) 'Attitudes towards ICT Integration into Curriculum and Usage among University Lecturers in Vietnam', *International Journal of Instruction*, 6(2), pp. 53-66.

Hughes, S.P. and Tulimirovic, B. (2015) *ICT Use and Perceived Effectiveness in an Adult EFL Learning Context* (2340-8561). Available at: http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED571500&site=eds-live.

Hymes, D.H. (1972) 'On Communicative Competence', in Holmes, J.B.P.a.J. (ed.) *Sociolinguistics. Selected readings.* Harmondsworth: Penguin., pp. 269-293.

IDP (2010-2015) *Institutional Development Program* Mexico: University of Pitic

INEGI (2017) *Estadisticas a Proposito del Dia Mundial del Internet (17 de mayo)* Available at: http://www.inegi.org.mx/saladeprensa/aproposito/2017/internet2017_Nal.pdf (Accessed: October 15).

Isleem, M. (2003) *Relationships of Selected Factors and the Level of Computer Use for Instructional Purposes by Technology Education Teachers in Ohio Public Schools: A Statewide Survey*. Doctor of Philosophy. The Ohio State University. Available at: https://etd.ohiolink.edu/!etd.send_file?accession=osu1059507787&disposition.

Izadpanah, S. and Alavi, M. (2016) 'The Perception of EFL High School Students in Using of Computer Technology in the Process of Learning: Merits and Demerits', *Advances in Language and Literary Studies, Vol 7, Iss 3, Pp 146-156 (2016)*, (3), p. 146.

Jacobi, L. (2017) 'The Structure of Discussions in an Online Communication Course: What Do Students Find Most Effective?', *Journal of University Teaching and Learning Practice*, 14(1).

John, S.P. (2015) 'The Integration of Information Technology in Higher Education: a Study of Faculty's Attitude towards IT Adoption in the Teaching Process', *Contaduría y administración*, (suppl 1), p. 230.

Johnson, R.B., Onwuegbuzie, A.J. and Turner, L.A. (2007) 'Toward a Definition of Mixed Methods Research', *Journal of Mixed Methods Research*, 1(2), pp. 112-133.

Joosten, T.M. *et al.* (2013) 'The Impact of Instructional Development and Training for Blended Teaching on Course Effectiveness', in Picciano, A.G., Dziuban, C.D. and Graham, C.R. (eds.) *Blended Learning: Research Perspectives*. New York & London: Routledge Ltd., pp. 173-189.

Jukes, I., McCain, T. and Crockett, L. (2010) *Understanding the Digital Generation: Teaching and Learning in the New digital Landscape*. Thousand Oaks, CA: Corwin Press. Twenty first century fluency series.

Jung, H.-J. (2015) 'Fostering an English Teaching Environment: Factors Influencing English as a Foreign Language Teachers' Adoption of Mobile Learning', *Informatics in Education*, 14(2), pp. 219-241.

Karahanna, E. and Straub, D.W. (1999) 'Research: The Psychological Origins of Perceived Usefulness and Ease-of-Use', *Information & Management*, 35, pp. 237-250.

Karsten, R. and Roth, R. (1998) 'Computer Self-efficacy: A practical indicator of student computer competency in introductory IS courses', *Informing Sci.*, 1(3), pp. 61-68.

Kelly, A. and Safford, K. (2009) 'Does Teaching Complex Sentences Have to Be Complicated? Lessons from Children's Online Writing', *Literacy*, 43(3), pp. 118-122.

Kentnor, H. (2015) 'Distance Education and the Evolution of Online Learning in the United States', *Curriculum and Teaching Dialogue*, 17(1 and 2), pp. U Denver Legal Studies Research Paper No. 15-41.

Kern, R. (2006) 'Perspectives on Technology in Learning and Teaching Languages', *TESOL Quarterly: A Journal for Teachers of English to Speakers of Other Languages and of Standard English as a Second Dialect*, 40(1), pp. 183-210.

Kessler, G. (2010) 'When They Talk About CALL: Discourse in a Required CALL Class', *CALICO Journal*, (2), p. 376.

Khechine, H. *et al.* (2014) 'UTAUT Model for Blended Learning: The Role of Gender and Age in the Intention to Use Webinars', *Interdisciplinary Journal of E-Learning and Learning Objects*, 10, pp. 33-52.

Khine, M.S. (2001) 'Attitudes toward Computers among Teacher Education Students in Brunei Darussalam', *International Journal of Instructional Media*, 28(2), p. 147.

Kia, J. and Ahmadi, L. (2015) 'Attitudes toward Using the Internet for Language Learning: A Case of Iranian English Teachers and Learners', *International Journal of Research Studies in Educational Technology*, 4(1), pp. 63-78.

Kim, H. (2002) 'Teachers as a barrier to technology-integrated language teaching', *English Teaching*, 57(2), pp. 35-64.

Kim, Y.J., Chun, J.U. and Song, J. (2009) 'Investigating the Role of Attitude in Technology Acceptance from an Attitude Strength Perspective', *International Journal of Information Management*, 29, pp. 67-77.

King, A. (2016) *Blended Language Learning: Part of the Cambridge Papers in ELT series*. [PDF] Cambridge: Cambridge University Press.

Kirschner, P. *et al.* (2004) 'Designing Electronic Collaborative Learning Environments', *Educational Technology Research and Development*, (3), p. 47.

Kögler, H.-H. (2012) 'Agency and the Other: On the Intersubjective Roots of Self-identity', *New Ideas in Psychology*, 30(1), pp. 47-64.

Korsgaard, C.M. (2014) *The Normative Constitution of Agency*. Oxford University Press.

Kramsch, C. (1986) 'From Language Proficiency to Interactional Competence', *Modern Language Journal*, 4(4), pp. 366-72.

Krueger, R.A. (1994) *Focus groups : a practical guide for applied research*. 2 edn.: Thousand Oaks, Calif. : SAGE, 1994.

Kumar, N., Rose, R.C. and D'Silva, J.L. (2008) 'Teachers' Readiness to Use Technology in the Classroom: An Empirical Study', *European Journal of Scientific Research*, 21(4), pp. 603-616.

Kusano, K. *et al.* (2013) 'The Effects of ICT Environment on Teachers' Attitudes and Technology Integration in Japan and the U.S', *Journal of Information Technology Education: Innovations in Practice*, 12, pp. 29-43.

Lai, C.-C. and Kritsonis, W.A. (2006) 'The Advantages and Disadvantages of Computer Technology in Second Language Acquisition', *Online Submission*.

Lamy, M.-N. and Hampel, R. (2007) *Online Communication in Language Learning and Teaching*. Basingstoke, England: Palgrave Macmillan. Research and Practice in Applied Linguistics (Research and Practice in Applied Linguistics), 280 pp.

Lantolf, J.P. (2000) *Sociocultural Theory and Second Language Learning*. Oxford: Oxford University Press.

Laumakis, M., Graham, C. and Dziuban, C. (2009) 'The Sloan-C Pillars and Boundary Objects As a Framework for Evaluating Blended Learning', *Journal of Asynchronous Learning Networks*, 13(1), pp. 75-87.

Launer, R. (2010) 'Five Assumptions on Blended Learning: What is Important to Make Blended Learning a Successful Concept?', in Tsang, P. *et al.* (eds.) *Lecture Notes in Computer Science*. Berlin: Springer.

Laurillard, D. (2016) *Blended Learning Essentials: Getting Started. [MOOC]*. Available at: https://www.futurelearn.com/courses/blended-learning-getting-started/2/steps/73769.

Law, N., Pelgrum, W.J. and Plomp, T. (2008) *Pedagogy and ICT use in schools around the world: findings from the IEA SITES 2006 study*. [S.l.]: Springer; Hong Kong: Comparative Education Research Centre, the University of Hong Kong, 2008. CERC studies in comparative education: 23.

Lawrence, B.A.M. (2016) 'iPad Acceptance by English Learners in Saudi Arabia', *English Language Teaching*, 9(12), pp. 34-46.

Lawrence, J.E. and Tar, U.A. (2018) 'Factors that Influence Teachers' Adoption and Integration of ICT in Teaching/Learning Process', *Educational Media International*, 55(1), pp. 79-105.

Laws, S.D., Harper, C. and Marcus, R. (2003) *Research for Development. [electronic resource] : A Practical Guide*. London ; Thousand Oaks, Calif. : SAGE, 2003.

Lee, K.-w. (2000) 'English Teachers' Barriers to the Use of Computer-assisted Language Learning', *The Internet TESL Journal*, 6(12).

Lee, M.-C. (2010) 'Explaining and Predicting Users' Continuance Intention toward E-learning: An Extension of the Expectation–Confirmation Model', *Computers & Education*, 54, pp. 506-516.

Levy, M. (1998) 'Two Conceptions of Learning and Their Implications for CALL at the Tertiary Level', *ReCALL: The Journal of EUROCALL*, 1(1), pp. 86-94.

Li, G. and Ni, X. (2010) 'Elementary In-Service Teachers' Beliefs and Uses of Technology in China: A Survey Study', *International Journal of Technology in Teaching & Learning*, 6(2), p. 116.

Li, X. (2013) 'The Application of "Three Dimensional" Model in the Teaching Design of EFL Writing', *English Language Teaching*, 6(2), pp. 32-44.

Lianjiang, J. (2017) 'The Affordances of Digital Multimodal Composing for EFL Learning', *ELT Journal: English Language Teaching Journal*, 71(4), pp. 413-422.

Lim, C., Tan, A. and Chen, W. (2012) *Extrinsic and Intrinsic Barriers in the Use of ICT in Teaching: A Comparative Case Study in Singapore*. 2012/01/01/. ASCILITE. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=edselc&AN=edselc.2-52.0-84912553299&site=eds-live.

Lin, W.-C. and Yang, S.C. (2013) 'Exploring the Roles of Google.doc and Peer e-Tutors in English Writing', *English Teaching: Practice and Critique*, 12(1), pp. 79-90.

Liu, J. (2009) 'A Survey of EFL Learners' Attitudes toward Information and Communication Technologies', *English Language Teaching*, 2(4), pp. 101-106.

Liu, J. (2013) *E-learning in English Classroom: Investigating Factors Impacting on ESL (English as Second Language) College Students' Acceptance and Use of the Modular Object-Oriented Dynamic Learning Environment (Moodle)*. Iowa State University. Graduate Theses and Dissertations. Paper 13256.

Liu, Y.C. and Huang, Y.-M. (2015) 'Using the UTAUT Model to Examine the Acceptance Behavior of Synchronous Collaboration to Support Peer Translation', *JALT CALL Journal*, 11(1), pp. 77-91.

Long, M.H. and Doughty, C.J. (2009) *The handbook of language teaching*. Chichester, UK: Wiley-Blackwell.

López-Bonilla, L.M. and López-Bonilla, J.M. (2017) 'Explaining the Discrepancy in the Mediating Role of Attitude in the TAM', *British Journal of Educational Technology*, 48(4), pp. 940-949.

Lopez-Perez, M.V., Perez-Lopez, M.C. and Rodriguez-Ariza, L. (2011) 'Blended Learning in Higher Education: Students' Perceptions and their Relation to Outcomes', *Computers & Education*, 56, pp. 818-826.

López-Bonilla, L.M. and López-Bonilla, J.M. (2011) 'The role of attitudes in the TAM: A theoretically unnecessary construct?', *British Journal of Educational Technology*, 42(6), pp. E160-E162.

Lopez, M. and Flores, K. (2010) *Las TIC en la Educacion Superior de Mexico. Politicas y acciones*. Guadalajara, Mexico.

Lorenzo, G. and Moore, J.C. (2002) *The Sloan Consortium Report to the Nation: Five Pillars of Quality Online Education*. New York: Sloan-C.

Lwoga, E.T. and Komba, M. (2014) 'Understanding University Students' Behavioural Continued Intentions to Use Elearning in Tanzania', *Proceedings and report of the 7th UbuntuNet Alliance annual conference* pp. 167-188.

Madawi, A. and Tariq, E. (2016) 'Perceptions of Using Social Media as an ELT Tool among EFL Teachers in the Saudi Context', *English Language Teaching*, 9(7), pp. 1-9.

Madigan, R. *et al.* (2016) 'Acceptance of Automated Road Transport Systems (ARTS): An Adaptation of the UTAUT Model', *Transportation Research Procedia*, 14, pp. 2217-2226.

Mansouri, V. (2015) 'Vocabulary Instruction: Software Flashcards vs. Word Clouds', *Advances in Language and Literary Studies*, 6(1), pp. 41-45.

Marcelo, C. and Vaillant, D. (2009) *Desarrollo Profesional Docente. ¿Cómo se aprende a enseñar?* Madrid: NARCEA, S. A. DE EDICIONES.

Marek, M.W. and Wu, W.-C.V. (2014) 'Environmental Factors Affecting Computer Assisted Language Learning Success: A Complex Dynamic Systems Conceptual Model', *Computer Assisted Language Learning: An International Journal*, 27(6), pp. 560-578.

Masalela, R.K. (2009) 'Potential Benefits and Complexities of Blended Learning in Higher Education: The case of the University of Botswana', *Turkish Online Journal of Distance Education*, 10(1), pp. 66-82.

Mayadas, A.F. and Picciano, A.G. (2007) 'Blended Learning and Localness: The Means and the End', *Journal of Asynchronous Learning Networks*, 11(1), pp. 3-7.

McKay, S.L. (2006) *Researching second language classrooms*. Mahwah, N.J. ; London : Lawrence Erlbaum, 2006. ESL & Applied Linguistics Professional Series.

McKenney, S. *et al.* (2016) 'Collaborative Design of Technology-Enhanced Learning: What Can We Learn from Teacher Talk?', *TechTrends: Linking Research and Practice to Improve Learning*, 60(4), pp. 385-391.

McKnight, K. *et al.* (2016) 'Teaching in a Digital Age: How Educators Use Technology to Improve Student Learning', *Journal of Research on Technology in Education*, 48(3), pp. 194-211.

Means, B., Bakia, M. and Murphy, R. (2014) 'Learning Online: What Research Tell Us About Whether, When and How (first edition)', *Distance Education Report*, 18(24), pp. 4-4.

Means, B. *et al.* (2013) 'The Effectiveness of Online and Blended Learning: A Meta-Analysis of the Empirical Literature', *Teachers College Record*, 115(3).

Means, B. *et al.* (2010) 'Evaluation of Evidence-based Practices in Online Learning', Washington: US Department of Education.

Mechlova, E. and Malcik, M. (2012) 'ICT in Changes of Learning Theories', *ICETA 2012 - 10th IEEE International Conference on Emerging eLearning Technologies and Applications, Proceedings*. 2012/01/01. pp. 253-262. doi: 10.1109/ICETA.2012.6418326.

Melki, A. *et al.* (2017) 'Information and Communications Technology Use as a Catalyst for the Professional Development: Perceptions of Tertiary Level Faculty', *International Journal of Education & Development using Information & Communication Technology*, 13(3), p. 128.

Merriam, S.B. (1998) *Qualitative Research and Case Study Applications in Education*. 2nd edn. San Francisco: Jossey Bass.

Miles, M.B. and Huberman, A.M. (1994) *Qualitative Data Analysis: An Expanded Sourcebook*. 2nd edn. Thousand Oaks, CA: Sage.

Mirzajani, H. *et al.* (2015) 'A Review of Research Literature on Obstacles That Prevent Use of ICT in Pre-Service Teachers' Educational Courses', *International Journal of Education and Literacy Studies*, 3(2), pp. 25-31.

Mishra, P. and Koehler, M.J. (2006) 'Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge', *Teachers College Record*, 108(6), pp. 1017-1054.

Moore, G. and Benbasat, I. (1991) 'Development of an Instrument to Measure the Perceptions of Adopting an Information Technology Innovation', *Information Systems Research*, (3), p. 192.

Moore, J.C. (2012) 'A Synthesis of Sloan-C Effective Practices, December 2011', *Journal of Asynchronous Learning Networks*, 16(1), pp. 91-115.

Moskal, P., Dziuban, C. and Hartman, J. (2013) 'Blended Learning: A Dangerous Idea?', *Internet and Higher Education*, 18, pp. 15-23.

Motteram, G. (2013) *Innovations in learning technologies for English Language teaching*. London, UK: British Council.

Motteram, G. and Sharma, P. (2009) 'Blending Learning in a Web 2.0 World', *International Journal of Emerging Technologies & Society*, 7(2), pp. 83-96.

Mumtaz, S. (2000) 'Factors Affecting Teachers' use of Information and Communications Technology: A Review of the Literature', *Journal of Information Technology for Teacher Education*, 9(3), p. 319.

Murat, H. (2012) 'Prospective EFL Teachers' Perceptions of ICT Integration: A Study of Distance Higher Education in Turkey', (1), p. 185.

Nachoua, H. (2012) 'Computer-Assisted Language Learning for Improving Students'Listening Skill', *International Conference on Education and Educational Psychology (ICEEPSY 2012), Procedia - Social and Behavioral Sciences 69*, pp. pp. 1150 – 1159.

Neuman, W.L. (2014) *Social Research Methods. [electronic resource]: Qualitative and Quantitative Approaches*. Harlow : Pearson, 2014. 7th ed. Pearson new international ed. Pearson custom library.

Neumeier, P. (2005) 'A Closer Look at Blended Learning-Parameters for Designing a Blended Learning Environment for Language Teaching and Learning', *ReCALL: The Journal of EUROCALL*, 2(2), pp. 163-78.

Ngo, H.T.P. (2017) *Information and Communication Technologies in Learning English as a Foreign Language (EFL): Attitudes of EFL Learners in Vietnam*. Doctor of Philosophy in Education. University of Hawai'i. Available at: https://search.proquest.com/docview/1954690108 (Accessed: February 3rd, 2016).

Nguyen, C.D. (2017) 'Connections between learning and teaching: EFL teachers' reflective practice', *Pedagogies*, 12(3), pp. 237-255.

Niemiec, M. and Otte, G. (2010) 'An Administrator's Guide to the Whys and Hows of Blended Learning', *Journal of Asynchronous Learning Networks*, 14(1), pp. 91-102.

Nistor, N. and Heymann, J.O. (2010) 'Reconsidering the role of attitude in the TAM: An answer to Teo (2009a)', *British Journal of Educational Technology*, 41(6), pp. E142-E145.

Nolen, A.L. and Putten, J.V. (2007) 'Action Research in Education: Addressing Gaps in Ethical Principles and Practices', *Educational Researcher*, 36(7), pp. 401-407.

Nomass, B.B. (2013) 'The Impact of Using Technology in Teaching English as a Second Language', *English Language and Literature Studies*, 3(2).

Norberg, A. (2017) *From Blended Learning to Learning Onlife : ICTs, Time and Access in Higher Education*. 72. Umeå University. Available at: http://urn.kb.se/resolve?urn=urn:nbn:se:umu:diva-130567 (Accessed: 2017-01-23t23:39:47.595+01:00).

Norberg, A., Dziuban, C.D. and Moskal, P.D. (2011) 'A Time-Based Blended Learning Model', *On the Horizon*, 19(3), pp. 207-216.

North, B., Ortega, A. and Sheehan, S. (2010) *A Core Inventory for General English. British Council/EAQUALS*. Available at: http://clients.squareeye.net/uploads/eaquals2011/documents/EAQUALS_British_Council_Core_Curriculum_April2011.pdf.

O'Connor, C., Mortimer, D. and Bond, S. (2011) 'Blended Learning: Issues, Benefits, and Challenges', *International Journal of Employment Studies*, 19(2), pp. 62-82.

Olejarczuk, E. (2014) 'The E-Learning Component of a Blended Learning Course', *Teaching English with Technology: A Journal for Teachers of English*, 3(3), pp. 58-68.

Oliver, M. and Trigwell, K. (2005) 'Can "Blended Learning" Be Redeemed?', *E-Learning*, 2(1), pp. 17-26.

Oliver, R.L. (1980) 'A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions', *Journal of Marketing Research (JMR)*, 17(4), pp. 460-469.

Osiurak, F., Jarry, C. and Le Gall, D. (2010) 'Grasping the Affordances, Understanding the Reasoning: Toward a Dialectical Theory of Human Tool Use', *Psychological Review*, 117(2), pp. 517-540.

Ouedraogo, B. (2017) 'Model of Information and Communication Technology (ICT) Acceptance and Use for Teaching Staff in Sub-Saharan Africa Public Higher Education Institutions', *Higher Education Studies*, 7(2), pp. 101-118.

Owston, R. (2018) 'Empowering Learners through Blended Learning', *International Journal on E-Learning*, 17(1).

Oxford, R. (2001) 'Integrated Skills in the ESL/EFL Classroom', *ESL Magazine*, 4(1), pp. 18-20.

Oz, H. (2014) 'Prospective English Teachers' Ownership and Usage of Mobile Devices as M-learning Tools', *Procedia - Social and Behavioral Sciences*, 141, pp. 1031-1041.

Ozkal, N. (2013) 'Predictions of Positive Attitudes towards Social Studies Course According to Self-Efficacy Beliefs', *Mersin University Journal of Education Faculty* 9(2), pp. 399-408.

Pachler, N. (2014) 'Perspectives on and Theories of Learning with Digital Technologies', in Pachler, N. and Leask, M. (eds.) *Learning to Teach Using ICT in the Secondary School: A Companion to School Experience*. 3rd edn. Milton Park, Abingdon, Oxon: Routledge, pp. 1-17.

Pachler, N. *et al.* (2009) *Scoping a Vision For Formative E-Assessment: A Project Report for JISC Version 2.0*. Available at: http://www.jisc.ac.uk/publications/reports/2009/feasstfinalreport.aspx (Downloaded: 12 April 2018).

Padumadasa, E. (2012) 'E-Learnification of Sri Lanka Higher Education Sector: adoption perspective'. Available at: http://aisel.aisnet.org/ukais2012/42/.

Pan, S.C. and Franklin, T. (2011) 'In-Service Teachers' Self-Efficacy, Professional Development, and Web 2.0 Tools for Integration', *New Horizons in Education*, 59(3), pp. 28-40.

Papayianni, M. (2012) 'An Investigation into English Language Teachers' CALL Use in Secondary Education in Cyprus, their Beliefs about Using Technology in Teaching, and the Factors that Influence EFL Teachers' CALL Use'.

Pareja-Lora, A., Rodríguez-Arancón, P. and Calle-Martínez, C. (2016) 'Applying Information and Communication Technologies to Language Teaching and Research: An Overview', in A. Pareja-Lora, C.C.-M., & P. Rodríguez-Arancón (ed.) *New perspectives on teaching and working with languages in the digital era*. Dublin: Research-publishing.net, pp. (pp. 1-22). http://dx.doi.org/10.14705/rpnet.2016.tislid2014.418.

Park, C. and Son, J. (2009) 'Implementing Computer-Assisted Language Learning in the EFL Classroom: Teachers' Perceptions and Perspectives', *International Journal of Pedagogies & Learning*, 5(2), p. 80.

Park, Y. and Jung, E. (2016) 'Exploring the Use of Video-clips for Motivation Building in a Secondary School EFL Setting', *English Language Teaching*, 9(10), pp. 81-89.

Perepiczka, M., Chandler, N. and Becerra, M. (2011) 'Relationship between Graduate Students' Statistics Self-Efficacy, Statistics Anxiety, Attitude toward Statistics, and Social Support', *Professional Counselor*, 1(2), pp. 99-108.

Peyton, J. and Schaetzel, K. (2016) 'Teaching Writing to Adult English Language Learners: Lessons From the Field', *Journal of Literature and Art Studies, November 2016, Vol. 6, No. 11, 1407-1423*, 6(11), p. 1407/1423.

Piaget, J. (1954) *The Construction of Reality in the Child*. New York: Basic Books.

Piaget, J. (1983) 'Piaget's Theory', in Mussen, P. and Kessen, W. (eds.) *Handbook of Child Psychology*. 4th edn. New York: Wiley.

Picciano, A.G., Dziuban, C. and Graham, C.R. (2014) *Blended Learning: Research Perspectives. Volume 2*. Available at: ProQuest. Restricted to UCSD IP addresses http://ebookcentral.proquest.com/lib/ucsd/detail.action?docID=1546790.

Picciano, A.G. and Seaman, J. (2010) *Class Connections: High School Reform and the Role of Online Learning*. New York: Babson Survey Research Group.

Picciano, A.G. *et al.* (2012) 'Examining the Extent and Nature of Online Learning in American K-12 Education: The Research Initiatives of the Alfred P. Sloan Foundation', *Internet and Higher Education*, 15(2), pp. 127-135.

Pop, A. and Slev, A.M. (2012) 'Maximizing EFL Learning Through Blending', *Procedia - Social and Behavioral Sciences*, 46, pp. 5516-5519.

Porter, W.W. *et al.* (2014) 'Blended Learning in Higher Education: Institutional Adoption and Implementation', *Computers & Education*, 75(0), pp. 185-195.

Prensky, M. (2001) 'Digital Natives, Digital Immigrants Part 1', *On the Horizon*, 9(5), pp. 1-6.

Pynoo, B. *et al.* (2011) 'Predicting secondary school teachers' acceptance and use of a digital learning environment: A cross-sectional study', *Computers in Human Behavior*, 27(1), pp. 568-575.

Quezada, P. *et al.* (2017) 'Teachers' Factors that Influence the English Language Teaching-Learning Process in Ecuadorian High Schools in the context of e-Education and Society', *12th Iberian Conference on Information Systems and Technologies*. Portugal- Lisboa. doi: 10.23919/CISTI.2017.7975819.

Rabah, J. (2015) 'Benefits and Challenges of Information and Communication Technologies (ICT) Integration in Québec English Schools', *Turkish Online Journal of Educational Technology - TOJET*, 14(2), pp. 24-31.

Radovan, M. and Kristl, N. (2017) 'Acceptance of Technology and its Impact on Teacher's Activities in Virtual Classroom: Integrating UTAUT and CoI into a Combined Model', *Turkish Online Journal of Educational Technology*, 16(3), pp. 11-22.

Ramaley, J.A. (2013) 'The Changing Role that Education Plays', *The Journal of General Education*, (2-3), p. 144.

Rana, N. *et al.* (2017) 'Citizens' Adoption of an Electronic Government System: Towards a Unified View' 19. pp. 549-568. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=edswsc&AN=000401265500009&site=eds-live.

Reddy, M. and Sireesha, A. (2015) 'A Study of Attitude of Telugu Language Teachers towards Teaching Profession with Management and Qualification', *International Journal of Scientific Research*, 4(5).

Richards, J.C. and Rodgers, T.S. (2001) *Approaches and Methods in Language Teaching*. Cambridge: Cambridge University Press. Cambridge Language Teaching Library.

Riley, J. *et al.* (2013) 'Implementation of Blended Learning for the Improvement of Student Learning', in Picciano, A.G., Dziuban, C.D. and Graham , C.R. (eds.) *Blended Learning Research Perspectives* New York & London: Routledge Ltd., pp. 161-172.

Rogers, E.M. (1983) *Diffusion of innovations*. 3rd edn. New York (a Division of Macmillan Publishing Co. Inc. New York. Collier Macmillan Publishers, London): The Free Press.

Romaña Correa, Y. (2015) 'Skype™ Conference Calls: A Way to Promote Speaking Skills in the Teaching and Learning of English (Llamadas para conferencia en Skype™: una forma de promover la habilidad de habla en la enseñanza y aprendizaje del inglés)', *PROFILE: Issues in Teachers' Professional Development*, 17(1), pp. 143-156.

Ross, B. and Gage, K. (2006) 'Global Perspectives on Blended Learning: Insight from WebCT and Our Customers in Higher Education', in *C. J. Bonk & C. R. Graham (Eds.), Handbook of Blended Learning: Global Perspectives, Local Designs* San Francisco, CA: Pfeiffer, pp. 155-168.

Rubio, F. and Thoms, J.J. (2014) *Hybrid Language Teaching and Learning: Exploring Theoretical, Pedagogical and Curricular Issues*. Boston, MA: Heinle Cengage Learning. xiii, 241.

Ryan, R.M. and Deci, E.L. (2000) 'Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being', *American Psychologist*, 55(1), pp. 68-78.

Sabzian, F. and Gilakjani, A.P. (2013) 'Teachers' Attitudes about Computer Technology Training, Professional Development, Integration, Experience, Anxiety, and Literacy in English Language Teaching and Learning', *International Journal of Applied Science and Technology* 3(1), pp. 67-75.

Şahin Kızıl, A. (2017) 'EFL Learners in the Digital Age: An Investigation into Personal and Educational Digital Engagement', *RELC Journal*, 48(3), pp. 373-388.

Sahina, I. *et al.* (2013) 'Analysis of Relationships between Technological Pedagogical Content Knowledge and Educational Internet Use', *Journal of Digital Learning in Teacher Education*, 29(4), pp. 110-117.

Saleh Mahdi, H. and Sa'ad Al-Dera, A. (2013) 'The impact of teachers' age, gender and experience on the use of information and communication technology in EFL teaching', *English Language Teaching*, 6(6), pp. 57-67.

Sandolo, L. (2010) 'How Can the Use of Technology Enhance Writing in the Classroom?', *Fisher Digital Publications*.

Sang, G. *et al.* (2010) 'Student Teachers' Thinking Processes and ICT Integration: Predictors of Prospective Teaching Behaviors with Educational Technology', *Computers & Education*, 54(1), pp. 103-112.

Savignon, S. (1991) 'Communicative Language Teaching: State of the Art', *TESOL Quarterly*, (2), p. 261.

Scida, E., E. and Saury, R., E. (2006) 'Hybrid Courses and their Impact on Student and Classroom Performance: A Case Study at the University of Virginia', *CALICO Journal*, (3), p. 517.

Schaffhauser, D. and Kelly, R. (2016) *Teaching with Technology*. Available at: https://campustechnology.com/articles/2016/10/12/55-percent-of-faculty-are-flipping-the-classroom.aspx (Accessed: April 5th).

Schrader, D.E. (2015) 'Constructivism and Learning in the Age of Social Media: Changing Minds and Learning Communities', *New Directions for Teaching and Learning*, 2015(144), pp. 23-35.

Selwyn, N. (2014) *Digital Technology and the Contemporary University: Degrees of Digitization*. Taylor and Francis.

Sharma, P. and Barrett, B. (2007) *Blended Learning*. Oxford: Macmillan.

Sharp, S. (2011) 'Teachers Acquisition of CALL Expertise', *International Journal of Computer-Assisted Language Learning and Teaching (IJCALLT)*, 1(4), p. 1.

Sharpe, R. *et al.* (2006) *The Undergraduate Experience of Blended e-learning: A Review of UK Literature and Practice* London: The Higher Education Academy

Shen, C.C. and Chuang, H.M. (2010) 'Exploring users' attitudes and intentions toward the interactive whiteboard technology environment', *International Review on Computers and Software*, 5(2), pp. 200-208.

Sherman, B.J. (2016) *Agency, Ideology, and Information/Communication Technology: English Language Instructor Use of Instructional Technology at a South Korean College*. ProQuest LLC. Available at: https://search.proquest.com/docview/1881315500?fromunauthdoc=true.

Singleton, D.M. (2013) 'Transitioning to Blended Learning: The Importance of Communication and Culture', *Journal of Applied Learning Technology*, 3(1), pp. 12-15.

Skrypnyk, O. *et al.* (2015) *The History and State of Blended Learning*. Available at: https://www.researchgate.net/publication/313751703.

Smith, A., Ling, P. and Hill, D. (2006) 'The Adoption of Multiple Modes of Delivery in Australian Universities', *Journal of University Teaching and Learning Practice*, 3(2), pp. 67-81.

Smith, J. *et al.* (2012) 'Facilitating the Development of Study Skills through a Blended Learning Approach', *International Journal of Higher Education*, 1(2), pp. 108-117.

Solano, L. *et al.* (2017) 'Exploring the use of educational technology in efl teaching: A case study of primary education in the south region of ecuador', *Teaching English with Technology*, 17(2), pp. 77-86.

Srichanyachon, N. (2014) 'EFL Learners' Perceptions of Using LMS', *Turkish Online Journal of Educational Technology - TOJET*, 13(4), pp. 30-35.

Stein, J. and Graham, C.R. (2014) *Essentials for Blended Learning: A Standards-Based Guide*. New York: Routledge. Essentials of Online Learning Series.

Stocker, J. (2012) 'Ethical Challenges in Teacher Research: the Case of an ESP Foreign Language Course in Taiwan', *Taiwan International ESP Journal*, 3(2), pp. 51-72.

Stracke, E. (2007) 'A Road to Understanding: A Qualitative Study Into Why Learners Drop Out of a Blended Language Learning (BLL) Environment', *ReCALL: The Journal of EUROCALL*, 1(1), pp. 57-78.

Sumalatha, K. and Ramakrishnaiah, D. (2007) 'Impact of ICT on Teacher Education in the Centra of Globalization', in Kishan, N.R. (ed.) *Global Trends in Teacher Education*. New Delhi APH Publishing Corporation, pp. 61-68.

Székely, M., O'Donoghue, J. and Pérez, H. (2015) *Sorry: El Aprendizaje del Inglés en México*. Ciudad de Mexico: Mexicanos Primero, Vision 2030 A. C.

Szeto, E. (2014) 'A Comparison of Online/Face-to-face Students' and Instructor's Experiences: Examining Blended Synchronous Learning Effects', *Procedia Social and Behavioral Sciences*, 116(1), p. 4250.

Tabach, M. (2006) 'Research and Teaching. Can one person do both? A case study ', *Proceedings 30th Conference of the International Group for the Psychology of Mathematics Education*. Prague. PME, pp. 233-240.

Tabachnick, B.G. and Fidell, L.S. (2013) *Using multivariate statistics. [electronic resource]*. Harlow : Pearson, 2014. 6th ed.

Taber, K. (2007) *Classroom-based Research and Evidence-based Practice: a Guide for Teachers*. Thousand Oaks, CA: Sage Publications.

Tabrizi, H.M. and Saeidi, M. (2015) 'The Relationship among Iranian EFL Learners' Self-Efficacy, Autonomy and Listening Comprehension Ability', *English Language Teaching*, 8(12), pp. 158-169.

Tai, H.-C. (2016) 'Effects of Collaborative Online Learning on EFL Leaners' Writing Performance and Self-efficacy', *English Language Teaching*, 9(5), pp. 119-133.

Tan, P.J.B. (2015) 'English E-learning in the Virtual Classroom and the Factors that Influence ESL (English as a Second Language): Taiwanese Citizens' Acceptance and Use of the Modular ObjectOriented Dynamic Learning Environment', *Social Science Information*, 54(2), p. 211/228.

Tarkin, A. and Uzuntiryaki, E. (2012) 'Investigation of Pre-service Teachers' Self-Efficacy Beliefs and Attitudes toward Teaching Profession through Canonical Analysis', *Elementary Education Online*, 11(2), pp. 332-341.

Taylor, J.A. and Newton, D. (2013) 'Beyond Blended Learning: A Case Study of Institutional Change at an Australian Regional University', *Internet and Higher Education*, 18, pp. 54-60.

Taylor, S. and Todd, P. (1995a) 'Assessing IT Usage: The Role of Prior Experience', *MIS Quarterly*, 19(4), p. 561.

Taylor, S. and Todd, P. (1995b) 'Understanding Information Technology Usage: A Test of Competing Models', *Information Systems Research*, (2), p. 144.

Teo, T. (2009) 'Is There an Attitude Problem? Reconsidering the Role of Attitude in the TAM', *British Journal of Educational Technology*, 40(6), pp. 1139-1141.

Teo, T. and Noyes, J.M. (2011) 'An Assessment of the Influence of Perceived Enjoyment and Attitude on the Intention to Use Technology among Pre-Service teachers: A structural Equation Modelling Approach', *Computers and Education*, 57, pp. 1645-1653.

Thomas, T.D., Singh, L. and Gaffar, K. (2013) 'The Utility of the UTAUT Model in Explaining Mobile Learning Adoption in Higher Education in Guyana', *International Journal of Education and Development using Information and Communication Technology*, 9(3), pp. 71-87.

Thompson, R.L., Higgins, C.A. and Howell, J.M. (1991) 'Personal Computing: Toward a Conceptual Model of Utilization', *MIS Quarterly*, 15(1), pp. 124-143.

Thorne, S.L. and Smith, B. (2011) 'Second Language Development Theories and Technology-mediated Language Learning', *CALICO Journal*, 28(2), pp. 268-277.

Tíscar, J. (2015) *Improving Speaking Skills through the Use of a Blog*. Universitat Jaume I. Available at: http://repositori.uji.es/xmlui/bitstream/handle/10234/130125/TFM_014_T%C3%ADscarJ.pdf?sequence=1.

Tomlinson, B. (2012) 'Materials Development for Language Learning and Teaching', *Language Teaching: Surveys and Studies*, 45(2), pp. 143-179.

Torres, U.P. *et al.* (2011) 'E-learning Motivation and Educational Portal Acceptance in Developing Countries', *Online Information Review*, 35(1), pp. 66-85.

Torsani, S. (2016) *CALL Teacher Education: Language Teachers and Technology Integration*. Sense Publishers.

Tri, D.H. and Nguyen, N.H.T. (2014) 'An Exploratory Study of ICT Use in English Language Learning among EFL University Students', *Teaching English with Technology*, 14(4), pp. 32-46.

Tuncay, H. (2014) 'An Integrated Skills Approach Using Feature Movies in EFL at Tertiary Level', *Turkish Online Journal of Educational Technology - TOJET*, 13(1), pp. 56-63.

Türkmen, Y. and Aydin, S. (2016) 'The Effects of Using Online Concordancers on Teaching Grammar', *Online Submission*.

Tzeng, J.-Y. (2011) 'Perceived Values and Prospective Users' Acceptance of Prospective Technology: The Case of a Career E-portfolio System', *Computers & Education*, 56, pp. 157-165.

UNESCO (2016) *ICT in Education*. Available at: http://en.unesco.org/themes/ict-education.

Ursavaş, Ö.F. (2013) 'Reconsidering the Role of Attitude in the TAM: An Answer to Teo (2009) and Nistor and Heymann (2010), and Lopez-Bonilla and Lopez-Bonilla (2011)', *British Journal of Educational Technology*, 44(1), pp. E22-E25.

Ushida, E. (2005) 'The Role of Students' Attitudes and Motivation in Second Language Learning in Online Language Courses', *CALICO Journal*, (1), p. 49.

Van De Bogart, W. and Wichadee, S. (2015) 'Exploring Students' Intention to Use LINE for Academic Purposes Based on Technology Acceptance Model', *International Review of Research in Open and Distributed Learning*, 16(3), pp. 65-85.

Vance, N. (2015) 'Four Language Skills'. Salem Press. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=ers&AN=89164226&site=eds-live.

Vaughan, N. *et al.* (2013) 'To Be or Not to Be: Student and Faculty Perceptions of Engagement in a Blended Bachelor of Education Program', in Picciano, A.G., Dziuban, C.D. and Graham, C.R. (eds.) *Blended Learning: Research Perspectives*. New York & London: Routledge Ltd., pp. 104-121.

Venkatesh, V., Brown, S.A. and Bala, H. (2013) 'Bridging the Qualitative-Quantitative Divide: Guidelines for Conducting Mixed Methods Research in Information Systems', *MIS Quarterly*, 37(1), pp. 21-54.

Venkatesh, V. and Davis, F.D. (2000) 'A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies', *Management Science*, 46(2), pp. 186-204.

Venkatesh, V., L. Thong, J.Y. and Xu, X. (2012) 'Consumer Acceptance and Use of Information Tecnology: Extending the Unified Theory of Acceptance and Use of Technology', *MIS Quarterly*, 36(1), pp. 157-178.

Venkatesh, V. *et al.* (2003) 'User Acceptance of Information Technology: Toward a Unified View', *MIS Quarterly*, 27(3), pp. pp. 425-478.

Venkatesh, V. *et al.* (2016) 'Factors Impacting University Instructors' and Students' Perceptions of Course Effectivenss and Technology Integration in the Age of Web 2.0', *Faceturs Influant la Perception de L'Efficacité du Cours et de L'Intégration de la Technologie À L'Ère du WEB 2.0 Paramis les Instructeurs Universitaires et Leurs Étudiants.*, 51(1), p. 533.

Venkatesh, V. *et al.* (2011) 'Extending the Two-Stage Information Systems Continuance Model: Incorporating UTAUT Predictors and the Role of Context', *Information Systems Journal*, 21(6), pp. 527-555.

Viitanen, S. (2014) *ICT in Education: EFL Teacher Trainees' Views of the Affordances of ICT Use in Education and the Need for ICT Training in Teacher Education Programmes in Finnish Universities*. University of Jyväskylä.

Villalva, K.E. (2006) 'Reforming high school writing: opportunities and constraints for Generation 1.5 writers', in P. Matsuda, Ortmeier-Hooper, C. and You, X. (eds.) *The politics of second language writing: In search of the promised land*. West Lafayette, IN: Parlor, pp. 30-55.

Vygotsky, L.S. (1978) *Mind in Society: The Development of Higher Psychological Processes*. Cambridge, Mass: Harvard University Press.

Waha, B. and Davis, K. (2014) 'University Students' Perspective on Blended Learning', *Journal of Higher Education Policy & Management*, 36(2), pp. 172-182.

Wahdain, E. and Ahmad, M.N. (2014) 'User Acceptance of Information Technology: Factors, Theories and Applications', *Journal of Information Systems Research and Innovation* pp. 17-25.

Wang, M.-j. (2010) 'Online Collaboration and Offline Interaction between Students Using Asynchronous Tools in Blended Learning', *Australasian Journal of Educational Technology*, 26(6), pp. 830-846.

Wang, Y.F., Petrina, S. and Feng, F. (2017) 'VILLAGE--Virtual Immersive Language Learning and Gaming Environment: Immersion and Presence', *British Journal of Educational Technology*, 48(2), pp. 431-450.

Warschauer, M. and Healey, D. (1998) 'Computers and Language Learning: An Overview', *Language Teaching: The International Abstracting Journal for Language Teachers, Educators and Researchers*, 31(2), pp. 57-71.

Watson, J. *et al.* (2013) *Keeping Pace with K-12 Online & Blended Learning: An Annual Review of Policy and Practice, 2013*. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED565714&site=eds-live.

Webb, M. (2014) 'Pedagogy with ICT', in Leask, M. and Pachler, N. (eds.) *Learning to Teach Using ICT in the Secondary School*. 3rd edn. London, UK and New York, NY: Routledge. Taylor & Francis Group, p. 260.

Webb, M.E. (2008) 'Impact of IT on Science Education', in Voogt, J. and Knezek, G. (eds.) *International Handbook of Information Technology in Primary and Secondary Education*. Berlin, Heidelberg, New York: Springer, pp. 133-44.

Weinstein, G. (2001) 'Developing Adult Literacies', in Celce-Murcia, M. (ed.) *Teaching English as a Second or Foreign Language*. Boston, MA: Heinle & Heinle, pp. 171-186.

Wenger, E. (1998) *Communities of practice : learning, meaning, and identity*. Cambridge : Cambridge University Press, c1998. Learning in doing : social, cognitive, and computational perspectives.

Whittaker, C. (2013) 'Introduction', in Tomlinson, B. and Whittaker, C. (eds.) *Blended Learning in English Language Teaching: Course Design and Implementation*. London: British Council, p. 252.

Wiyaka, Mujiyanto, J. and Rukmini, D. (2018) 'Students' Perception on the Usefulness of ICT-Based Language Program', *English Language Teaching*, 11(2), pp. 53-60.

Wolff, D. (2000) 'Second language writing: A few remarks on psycholinguistic and instructional issues', *Learning and Instruction*, 10(1), pp. 107-112.

Woo, Y. and Reeves, T.C. (2007) 'Meaningful Interaction in Web-Based Learning: A Social Constructivist Interpretation', *Internet and Higher Education*, 10(1), pp. 15-25.

Woodrow, J.E.J. (1992) 'The Influence of Programming Training on the Computer Literacy and Attitudes of Preservice Teachers', *Journal of Research on Computing in Education*, 25(2), pp. 200-19.

Wu, H.-J. (2015) *The Effects of Blog-supported Collaborative Writing on Writing Performance, Writing Anxiety and Perceptions of EFL College Students in Taiwan*. Doctor of Philosophy. University of South Florida. Available at: http://scholarcommons.usf.edu/etd/5600/.

Yagci, T. (2015) 'Blended Learning via Mobile Social Media & Implementation of "EDMODO" in Reading Classes', *Advances in Language and Literary Studies*, 6(4), pp. 41-47.

Yang, M., Song, Y. and Sun, Z. (2010) *On Theoretical Foundations of CALL: Constructivism and Input-Output Hypothesis*. 2010 / 01 / 01 /. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=edselc&AN=edselc.2-52.0-79952162848&site=eds-live.

Yang, S.-h. (2012) 'Exploring College Students' Attitudes and Self-Efficacy of Mobile Learning', *Turkish Online Journal of Educational Technology - TOJET*, 11(4), pp. 148-154.

Yang, S.C. and Chen, Y.J. (2007) 'Technology-Enhanced Language Learning: A Case Study', *Computers in Human Behavior*, 23(1), pp. 860-879.

Yavuz, F. (2014) 'The Use of Concordancing Programs in ELT', *Procedia - Social and Behavioral Sciences*, 116, pp. 2312-2315.

Yesilyurt, E., Ulas, A.H. and Akan, D. (2016) 'Teacher Self-efficacy, Academic Self-efficacy, and Computer Self-efficacy as Predictors of Attitude toward Applying Computer-Supported Education', *Computers in Human Behavior*, 64, pp. 591-601.

Yilmaz, N.P. (2011) 'Evaluation of the Technology Integration Process in the Turkish Education System', *Contemporary Educational Technology*, 2(1), p. 37.

Yip, F.W.M. and Kwan, A.C.M. (2006) 'Online Vocabulary Games as a Tool for Teaching and Learning English Vocabulary', *Educational Media International*, 43(3), pp. 233-249.

Yorganci, S. (2017) 'Investigating Students' Self-Efficacy and Attitudes towards the Use of Mobile Learning', *Journal of Education and Practice*, 8(6), pp. 181-185.

Yueh, H.P., Huang, J.Y. and Chang, C. (2015) 'Exploring Factors Affecting Students' Continued Wiki Use for Individual and Collaborative Learning: An Extended UTAUT Perspective', *Australasian Journal of Educational Technology* 31(1), p. 31.

Yunus, M.M. *et al.* (2013) 'The Use of Information and Communication Technology (ICT) in Teaching ESL Writing Skills', *English Language Teaching*, 6(7), pp. 1-8.

Zhao, R. (2014) *Instructional Interaction Development and Its Effects in Online Foreign Language Learning*. Available at: http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED565114&site=eds-live.

Zheng, D. *et al.* (2009) 'Attitude and Self-Efficacy Change: English Language Learning in Virtual Worlds', *CALICO Journal*, (1), p. 205.

Zinan, W. and Teoh Boon Sai, G. (2017) 'Students' Perceptions of their ICT-Based College English Course in China: A Case Study', *Teaching English with Technology*, 17(3), p. 53.

Zuppo, C.M. (2012) 'Defining ICT in a Boundaryless World: The Development of a Working Hierarchy', *International Journal of Managing Information Technology (IJMIT)* 4(3), pp. 13-22.

Appendix A EFL Teachers' Questionnaire - ETQ

Hello. I am a student in the distance program of PhD in Modern Languages at the University of Southampton. I am conducting a study called 'Blended Learning: An examination of the EFL Teachers and Students' Use, Continuance Intention to Use, and Attitudes towards Information and Communication Technologies' to get my doctoral degree. Please read the following information carefully before deciding whether to take part in this investigation. You will need to indicate that you have understood this information before you can continue. You must also be aged over 16 to participate. By ticking the box at the bottom of this page and clicking 'Continue', you are indicating that you are aged over 16, and you are consenting to participate in this survey.

Description of research

The purpose of this study is to examine to what extent factors considered as key predictors of acceptance and use of information technology (IT) such as performance expectancy, effort expectancy, social influence, ICT self-efficacy, and facilitating conditions contribute to the EFL teachers and students' attitudes towards ICTs. Also, it investigates the relationship between attitudes, actual usage, and continuance intention to use ICTs. In addition, it also seeks to know the EFL teachers and students' actual use and continuance intention to use ICTs to develop the four language skills and sub-skills within the blended learning modality. In this study, the term 'ICTs' will be used to refer to communication devices like computers, laptops, cell phones or smartphones, and tablet computers as well as online resources such as e-mail, videos, videoconferencing, social networks, blogs, chats, and computer games among others used in the teaching and learning of English as a foreign language. The research is sponsored by the University of Southampton and funded by the Programa para el Desarrollo Profesional Docente del Tipo Superior (PRODEP).

For questions and comments about the study, you may contact Maria Georgina Fernandez Sesma at mgf2g14@soton.ac.uk.

Statement of Consent

I have read and understood the information about this study. In consenting, I understand that my legal rights are not affected. I also understand that data collected as part of this research will be kept confidential, and that published results will maintain that confidentiality. I finally understand that if I have any questions about my rights as a participant in this research, or if I feel that I have been placed at risk, I may contact Prof. Denis McManus, the Chair of the Ethics Committee, Faculty of Humanities, University of Southampton, SO17 1BJ, UK. Email: D.Mcmanus@soton.acuk.

☐ I certify that I am 16 years or older. I have read the above consent form and I give consent to participate in the above described research.

Continue

Section I: Information and Communication Technology Usage:

1. How often do you use the following electronic devices and online resources in your teaching practice?

Never=1, rarely = 2, sometimes = 3, very often= 4, Always =5

Electronic devices					
1. Desktop computer	1	2	3	4	5
2.Lap Top	1	2	3	4	5
3. Smartphones	1	2	3	4	5
4. Tablet computer	1	2	3	4	5
5. Cellular phone	1	2	3	4	5
6. Other? Yes/No. If Yes, please specify and indicate how often you use it in your teaching practice.					

Appendix A

Online resources					
1. I use videos for educational purposes.	1	2	3	4	5
2. I use e-mail to communicate with my students.	1	2	3	4	5
3. I use computer games (e.g., Kahoot) to enhance students' learning.	1	2	3	4	5
4. I use peer correction (e.g., using Google docs).	1	2	3	4	5
5. I use presentation software (e.g., PowerPoint, Prezi)	1	2	3	4	5
6. I use online translators.	1	2	3	4	5
7. I use online dictionaries.	1	2	3	4	5
8. I use wikis.	1	2	3	4	5
9. I use chats.	1	2	3	4	5
10. I use social networks (e.g., Facebook, Twitter) for educational purposes	1	2	3	4	5
11. I use blogs.	1	2	3	4	5
12. I use voice over internet protocol (e.g., Skype)	1	2	3	4	5
13. I use the Smrt English course to teach English.	1	2	3	4	5
14. I use e-Portfolios.	1	2	3	4	5
15. I search for extra activities on the Internet to teach English.	1	2	3	4	5
16. I use my own webpage (s) to work with my students.	1	2	3	4	5
17. Other? Yes/No. Please specify and indicate its frequency of use.	1	2	3	4	5

2. In a 60-minute class, how many minutes do you spend using ICTs?
0-15 min ( ) 16-25 min ( ) 26-35min ( ) 36 -45 min ( ) 46-60 min ( )

3. How many hours ***per week*** do you expect students to use ICTs in out-of-class activities?
1-2 hours ( ) 3-4 hours ( ) 5-6 hours ( ) More than 6 hours ( )

4. Overall, how many hours ***per week*** do you use ICTs in activities related to English teaching? (e.g., teaching, revising assignments online, giving feedback online, chatting with students online, and working collaboratively online, and so on).

5-7 hours ( ) 8-10 hours ( ) 11-15 hours ( ) 16-20 ( ) +20 ( )

5. What do you use ICTs primarily for? (Mark only one)

a. Class delivery ___ b. Student interaction ___ c. Both class delivery and student interaction ___

d. Homework assignments or projects ____ e. Other? (Please explain)_____

6. How often do you assign out-of-class activities (e.g., homework/projects) that imply the use of ICTs to develop the following language skills and sub-skills per week?

Never=1, rarely= 2, sometimes = 3, very often = 4, always =5

Skills and Sub-skills	**Out-of-class activities (homework/projects)**				
Reading	1	2	3	4	5
Listening	1	2	3	4	5
Writing	1	2	3	4	5
Speaking	1	2	3	4	5
Grammar	1	2	3	4	5
Vocabulary	1	2	3	4	5
Pronunciation	1	2	3	4	5

Section II: Barriers encountered when EFL teachers use ICTs.

1**. According to your own experience, please identify the following barriers or obstacles that you have encountered when using ICTs as:**

Not a barrier = 1, Important barrier = 2, and Very important barrier = 3.

BARRIERS	Not a barrier	Important barrier	Very important barrier
1. Lack of technological literacy.	1	2	3
2. Lack of knowledge of easy-to-use online resources.	1	2	3
3. Creating or searching for online materials is time consuming.	1	2	3
4. In general, using ICTs demands a lot of my time.	1	2	3
5. Students' low level of English hinders their participation in online collaborative writing tasks.	1	2	3
6. The classroom is not well equipped to use ICTs.	1	2	3
7. Lack of ongoing training in the use of ICTs.	1	2	3
8. Availability and reliability of internet connection	1	2	3
9. Lack of technical support.	1	2	3
10. Students get easily distracted visiting other Internet pages during class.	1	2	3
11. Students tend to self-mute when participating in online forums.	1	2	3
12. Other? Yes/No. Please specify, and mark its level of importance.	1	2	3

Section III: UTAUT model questions.

1. As an EFL teacher, to what extent do you agree or disagree with the following statements?

Strongly disagree = 1, Disagree = 2, neither agree/nor disagree = 3, Agree = 4, strongly agree = 5

1. Using ICTs helps me better teach the reading, writing, listening, and speaking skills.	1	2	3	4	5
2. Using ICTs enables me to accomplish teaching tasks more quickly.	1	2	3	4	5
3. Using ICTs **reduces** the development of my students' language skills.	1	2	3	4	5
4. The use of ICTs improves the quality of my teaching practice.	1	2	3	4	5
5. Using ICTs makes it easier for me to teach grammar, vocabulary, and pronunciation.	1	2	3	4	5
6. Using ICTs to teach English is easy for me.	1	2	3	4	5
7. It would be easy for me to become skilful in all kinds of ICTs because they are easy to use.	1	2	3	4	5
8. I think that using ICTs to teach English is **too difficult**.	1	2	3	4	5
9. It is easy for me to do what I want with ICTs to facilitate my teaching practice.	1	2	3	4	5
10. Learning to use ICTs is easy for me.	1	2	3	4	5
11. The university administration considers that I should use ICTs to teach English.	1	2	3	4	5
12. Using ICTs to teach English makes me more valuable to my coordinator.	1	2	3	4	5

13. People who are important to me **disapprove** of me using ICTs to teach English.	1	2	3	4	5
14. Using ICTs to teach English makes me appear to be a better teacher.	1	2	3	4	5
15. In general, the university has supported the use of ICTs to teach English.	1	2	3	4	5
16. I can access the Smrt contents and online resources on the Internet without help.	1	2	3	4	5
17. I can use ICTs even if there is no one around to tell me what to do as I go.	1	2	3	4	5
18. I can overcome obstacles that occur when I use ICTs to teach English.	1	2	3	4	5
19. I have the ability to use ICTs to teach English without manuals to guide me in how to do it.	1	2	3		5
20. In general, I am competent enough in the use of ICTs to teach English.	1	2	3	4	5
21. Using ICTs to teach English suits me.	1	2	3	4	5
22. I have the resources necessary to teach English in the classroom.	1	2	3	4	5
23. Support staff provides help when there is a technical problem.	1	2	3	4	5
24. The speed of the Internet is adequate to work online in the classroom.	1	2	3	4	5
25. Overall, I have the knowledge necessary to use ICTs to teach English.					
26. I like the idea of using ICTs to teach English.	1	2	3	4	5
27. Using ICTs to teach English is enjoyable.	1	2	3	4	5
28. Using ICTs to teach English is boring.	1	2	3	4	5
29. Using ICTs to teach English is fun.	1	2	3	4	5
30. Using ICTs to teach English makes it more interesting.	1	2	3	4	5
31. In class, I use ICTs to help students develop their reading, writing, listening, and speaking skills.	1	2	3	4	5
32. I generally assign out-of-class activities (e.g., homework/projects) that involve the use of ICTs.	1	2	3	4	5
33. In class, I use ICTs to teach grammar, vocabulary, and pronunciation.	1	2	3	4	5
34. I dislike using ICTs to teach English.	1	2	3	4	5
35. Overall, I use ICTs to teach English on a daily basis.	1	2	3	4	5
36. I predict I will continue using ICTs in the future to help my students develop their reading, writing, listening, and speaking skills.	1	2	3	4	5
37. I intend to continue using ICTs in the future to help students develop their grammar, pronunciation, and vocabulary.	1	2	3	4	5
38. I plan to continue using ICTs in the future to keep my students practising the English they have learned.	1	2	3	4	5
39. I dislike the idea of using ICTs to teach English in the future.	1	2	3	4	5
40. Overall, I will continue using ICTs to teach English in the future.	1	2	3	4	5

2. Any other factor not mentioned here you would like to add? Yes / No. Please specify …….

Section IV. Demographic information: (Please tick the appropriate answer)

1. Gender: Male ( ) Female ( )

2. Your age: 24-35 years ( ) 36- 45 years ( ) 46- 55 years ( ) +55 years ( )

3. Educational background:

a) Bachelor's degree ( ) Master's degree ( ) PhD ( )

4. How long have you been teaching English as a foreign language?

Less than 1 year ( ) 1-5 years ( ) 6-10 years ( ) 11-15 years ( ) + 15 years ( )

5. How long have you been using ICTs to teach English as a foreign language?

Less than 1 year ( ) 1-2 years ( ) 3-5 years ( ) 6-10 years ( ) +10 years ( )

Thank you for your time and participation!

Appendix B EFL Students' Questionnaire - ESQ

Hello. I am a student in the distance program of PhD in Modern Languages at the University of Southampton. I am conducting a study called 'Blended Learning: An examination of the EFL Teachers and Students' Use, Continuance Intention to Use, and Attitudes towards Information and Communication Technologies' to get my doctoral degree. Please read the following information carefully before deciding whether to take part in this investigation. You will need to indicate that you have understood this information before you can continue. You must also be aged over 16 to participate. By ticking the box at the bottom of this page and clicking 'Continue', you are indicating that you are aged over 16, and you are consenting to participate in this survey.

Description of research

The purpose of this study is to examine to what extent factors considered as key predictors of acceptance and use of information technology (IT) such as performance expectancy, effort expectancy, social influence, ICT self-efficacy, and facilitating conditions contribute to the EFL teachers and students' attitudes towards ICTs. Also, it investigates the relationship between attitudes, actual usage, and continuance intention to use ICTs. In addition, it also seeks to know the EFL teachers and students' actual use and continuance intention to use ICTs to develop the four language skills and sub-skills within the blended learning modality. In this study the term 'ICTs' will be used to refer to communication devices like computers, laptops, cell phones or smartphones, and tablet computers as well as online resources such as e-mail, videos, videoconferencing, social networks, blogs, chats, and computer games among others used in the teaching and learning of English as a foreign language. The research is sponsored by the University of Southampton and funded by the Programa para el Desarrollo Profesional Docente del Tipo Superior (PRODEP).
For questions and comments about the study, you may contact Maria Georgina Fernandez Sesma at mgf2g14@soton.ac.uk.

Statement of Consent

I have read and understood the information about this study. In consenting, I understand that my legal rights are not affected. I also understand that data collected as part of this research will be kept confidential, and that published results will maintain that confidentiality. I finally understand that if I have any questions about my rights as a participant in this research, or if I feel that I have been placed at risk, I may contact Prof. Denis McManus, the Chair of the Ethics Committee, Faculty of Humanities, University of Southampton, SO17 1BJ, UK. Email: D.Mcmanus@soton.acuk.

☐ I certify that I am 16 years or older. I have read the above consent form and I give consent to participate in the above described research.

Continue

Section I. Barriers encountered when using ICTs to learn English.
(Barreras encontradas al utilizar las TIC para aprender inlgés).

1. According to your own experience, please identify the following barriers or obstacles that you have encountered when using ICTs as: Not a barrier = 1, Important barrier = 2, and Very important barrier = 3.
(De acuerdo a su experiencia, por favor identifique las siguientes barreras u obstáculos que Usted ha encontrado al utilizar las TIC de la siguiente manera: No es una barrera = 1, Barrera importante = 2 y Barrera muy importante = 3.)

Appendix B

BARRIERS	Not a barrier	Important barrier	Very important barrier
1. Lack of technological literacy. (Falta de conocimiento sobre tecnología)	1	2	3
2. Lack of knowledge of easy-to-use online resources. (Falta de conocimiento de recursos en línea que sean fáciles de usar)	1	2	3
3. Creating or searching for online materials is time consuming. (Crear o buscar materiales en línea consume mucho de mi tiempo)	1	2	3
5. In general, using ICTs demands a lot of my time. (En general, el usar las TIC demanda mucho de mi tiempo)	1	2	3
6. Students' low level of English hinders their participation in online collaborative writing tasks. (El bajo nivel de inglés de los estudiantes dificulta su participación en actividades en línea de escritura colaborativa)	1	2	3
7. The classroom is not well equipped to use ICTs. (El salón no está bien equipado para utilizar las TIC)	1	2	3
8. I lack ongoing training in the use of ICTs. (Me falta capacitación continua en el uso de las TIC)	1	2	3
9. Availability and reliability of Internet connection. (Disponibilidad y confiabilidad de la conexión a Internet)	1	2	3
10. Lack of technical support. (Falta de apoyo técnico)	1	2	3
11. I get easily distracted visiting other Internet pages during class. (Me distraigo fácilmente visitando otras páginas de Internet durante la clase)	1	2	3
12. I tend to self-mute when participating in online forums. (Tiendo a no participar durante los foros de discusión)	1	2	3
13. Any other barrier? Yes/No. Please specify, and mark its level of importance. (¿Alguna otra barrera? Sí/No. Por favor especifique y señale su nivel de importancia)	1	2	3

Section II: Questions of the UTAUT model. (Sección II: Preguntas del modelo UTAUT)

1. As an EFL student, to what extent do you agree or disagree with the following statements?
Use the following scale:

Strongly disagree = 1, Disagree = 2, Nor agree/nor disagree = 3, Agree = 4, Strongly agree = 5

(Como estudiante de inglés como lengua extranjera, por favor indique qué tan de acuerdo o desacuerdo está con las siguientes afirmaciones: Muy en desacuerdo = 1, En desacuerdo = 2, Ni de acuerdo/Ni en desacuerdo = 3, De acuerdo = 4, Muy de acuerdo = 5)

1. Using ICTs helps me better learn the reading, writing, listening, and speaking skills. (Utilizar las TIC me ayuda a mejorar mis habilidades de leer, escribir, oír y hablar)	1	2	3	4	5
2. Using ICTs enables me to accomplish the learning tasks more quickly. (Utilizar las TIC me permite realizar mis actividades de aprendizaje más rápidamente)	1	2	3	4	5
3. Using ICTs reduces the development of my language skills. (Utilizar las TIC disminuye el desarrollo de mis habilidades del idioma inglés)	1	2	3	4	5
4. The use of ICTs improves the quality of my learning. (El uso de las TIC mejora la calidad de mi aprendizaje)	1	2	3	4	5

5. Using ICTs makes it easier for me to learn grammar, vocabulary, and pronunciation. (Utilizar las TIC me facilita el aprender gramática, vocabulario y pronunciación)	1	2	3	4	5
6. Using ICTs to learn English is easy for me. (Utilizar las TIC para aprender inglés es fácil para mí)	1	2	3	4	5
7. It would be easy for me to become skilful in all kinds of ICTs because they are easy to use. (Es fácil para mí llegar a ser competente en el uso de todo tipo de TIC porque son fáciles de usar)	1	2	3	4	5
8. I think that using ICTs to learn English is too difficult. (Pienso que utilizar las TIC para aprender inglés es muy difícil)	1	2	3	4	5
9. It is easy for me to do what I want with ICTs to facilitate my learning practice. (Es fácil para mí hacer lo que quiero con las TIC para facilitar mi aprendizaje)	1	2	3	4	5
10. Learning to use ICTs is easy for me. (Aprender a usar las TIC es fácil para mí)	1	2	3	4	5
11. The university administration considers that I should use ICTs to learn English. (Las autoridades universitarias consideran que debo usar las TIC para aprender inglés)	1	2	3	4	5
12. Using ICTs to learn English makes me more valuable to my teacher and classmates. (Utilizar las TIC para aprender inglés me hace más valioso ante mi maestro (a) y mis compañeros)	1	2	3	4	5
13. People who are important to me disapprove of me using ICTs to learn English. (Gente que es importante para mí desaprueba que use las TIC para aprender inglés)	1	2	3	4	5
14. Using ICTs to learn English makes me appear to be a better student. (Utilizar las TIC para aprender inglés me hacer ver como un mejor estudiante)	1	2	3	4	5
15. In general, the university has supported the use of ICTs to learn English. (En general, la Universidad apoya el uso de las TIC para aprender inglés)	1	2	3	4	5
16. I can access the Smrt contents and online resources on the Internet without help. (Puedo acceder a los contenidos de Smrt y a los recursos en línea disponibles en Internet sin ayuda e alguien más)	1	2	3	4	5
17. I can use ICTs even if there is no one around to tell me what to do as I go. (Puedo usar las TIC incluso si no hay nadie alrededor que me diga qué hacer)	1	2	3	4	5
18. I can overcome obstacles that occur when I use ICTs to learn English. (Puedo superar los obstáculos que se presentan cuando utilizo las TIC para aprender inglés)	1	2	3	4	5
19. I have the ability to use ICTs to learn English without manuals to guide me in how to do it. (Tengo la capacidad de usar las TIC para aprender inglés sin manuales que me guíen en cómo hacerlo)	1	2	3	4	5
20. In general, I am competent enough in the use of ICTs to learn English. (En general, soy competente en el uso de las TIC para aprender inglés)	1	2	3	4	5
21. Using ICTs to learn English suits me. (Utilizar las TIC para aprender inglés me va)	1	2	3	4	5
22. I have the resources necessary to learn English in the classroom. (El salón cuenta con los recursos necesarios para utilizar las TIC)	1	2	3	4	5
23. Support staff provides help when there is a technical problem. (El personal de soporte brinda apoyo cuando hay problemas técnicos)	1	2	3	4	5

24. The speed of the Internet is adequate to work online in the classroom. (La velocidad del Internet es adecuada para trabajar en línea en el salón de clase)	1	2	3	4	5
25. Overall, I have the knowledge necessary to use ICTs to learn English. (En general, tengo el conocimiento necesario para usar las TIC para aprender inglés)	1	2	3	4	5
26. I like the idea of using ICTs to learn English. (Me gusta la idea de utilizar las TIC para aprender inglés)	1	2	3	4	5
27. Using ICTs to learn English is enjoyable. (Disfruto utilizar las TIC para aprender inglés)	1	2	3	4	5
28. Using ICTs to learn English is boring. (Utilizar las TIC para aprender inglés es aburrido)	1	2	3	4	5
29. Using ICTs to learn English is fun. (Utilizar las TIC para aprender inglés es divertido)	1	2	3	4	5
30. Using ICTs to learn English makes it more interesting. (Utilizar las TIC para aprender inglés lo hace más interesante)	1	2	3	4	5
31. In class, I use ICTs to develop my reading, writing, listening, and speaking skills. (En clase, utilizo las TIC para desarrollar las habilidades de lectura, escritura, comprensión auditiva y hablar)	1	2	3	4	5
32. I generally use ICTs to do my out-of-class activities (assignments/projects). (Generalmente utilizo las TIC para realizar actividades fuera de clase (Por ejemplo, tareas/proyectos)	1	2	3	4	5
33. In class, I use ICTs to do grammar, vocabulary, and pronunciation exercises. (En clase, utilizo las TIC para realizar ejercicios de gramática, vocabulario y pronunciación)	1	2	3	4	5
34. I dislike using ICTs to learn English. (No me gusta utilizar las TIC para aprender inglés)	1	2	3	4	5
35. Overall, I use ICTs to learn English on a daily basis. (En general, utilizo las TIC para aprender inglés diariamente)	1	2	3	4	5
36. I predict I will continue using ICTs in the future to improve my reading, writing, listening, and speaking skills. (Predigo que continuaré utilizando las TIC en el futuro para mejorar mis habilidades de lectura, escritura, oír y hablar)	1	2	3	4	5
37. I intend to continue using ICTs in the future to better develop my grammar, pronunciation, and vocabulary. (Intento continuar utilizando las TIC en el futuro para mejorar mi gramática, pronunciación y vocabulario)	1	2	3	4	5
38. I plan to continue using ICTs in the future to keep practicing the English I have learned. (Planeo continuar utilizando las TIC en el futuro para seguir practicando el inglés que he aprendido)	1	2	3	4	5
39. I dislike the idea of using ICTs to learn English in the future. (No me gusta la idea de utilizar las TIC en el futuro para aprender inglés)	1	2	3	4	5
40. Overall, I will continue using ICTs to learn English in the future. (En general, continuaré utilizando las TIC en el futuro para aprender inglés)	1	2	3	4	5

2. Any other factor not mentioned here you would like to add? Yes/No. Please specify……
(**¿**Existe algún otro factor que no se haya mencionado que le gustaría agregar?)…….

Section III. Demographic information: (Please tick the appropriate answer)
(Sección III. Información demográfica: Por favor marque la respuesta apropiada)

1. Gender: Male ( ) Female ( )
Género: Hombre ( ) Mujer ( )

2. Your age: 18-23 ( ) 24-28 ( ) 29-33 ( ) 34-40 ( ) 41 or more ( )
Edad: 18-23 ( ) 24-28 ( ) 29-33 ( ) 34-40 ( ) 41 o más ( )

3. English level you are studying this semester: (Nivel de inglés que está cursando este semestre)

Level 2 ( ) Level 4 ( )
Nivel 2 ( ) Nivel 4 ( )

4. Career you are currently enrolled: (career name) _____
(Carrera en las que está inscrito: nombre de la Carrera)

5. How long have you been studying English as a foreign language?
¿Cuánto tiempo tiene estudiando inglés como lengua extranjera?

Less than 1 year ( ) 1-3 years ( ) 4-6 years ( ) 7-10 years ( ) + 10 ( )

Menos de 1 año ( ) 1-3 años ( ) 4-6 años ( ) 7-10 años ( ) + 10 ( )

6. How long have you been using ICTs to learn English?
¿Por cuánto tiempo ha utilizado las TIC para aprender inglés?

Less than 1 year ( ) 1-2 years ( ) 3-5 years ( ) 6-10 years ( ) +10 ( )
Menos de 1 año ( ) 1-2 años ( ) 3-5 años ( ) 6-10 años ( ) +10 ( )

Thank you for your time and participation!

Appendix C Consent Form

UNIVERSITY OF Southampton

CONSENT FORM (FACE TO FACE: oct2016_16-10-26_115155 (2))
Paper-based survey

Study title:
Blended Learning: An examination of EFL Teachers and Students' Use, Continuance Intention to Use, and Attitudes towards Information and Communication Technologies

Researcher name: María Georgina Fernández Sesma
Staff/Student number: 27477789
ERGO reference number: 25891

Your data will be kept confidential; however, due to the nature of the instruments used in this research involves paper-based surveys given to participants in person by the researcher or an assistant, complete anonymity cannot be promised. Thus, this risk will be minimised by keeping the participants' data strictly confidential in a password protected computer, and in the researcher's locked office.
The data collected will be managed exclusively by the researcher, and used only for the purpose of this investigation in compliance with the Data Protection Act.

Please initial the box (es) if you agree with the statement(s):

I have read and understood the information sheet no. oct2016_16-10-26 _115224 (2), and have had the opportunity to ask questions about the study.	X
I agree to take part in this research project and agree for my data to be	X
I understand my participation is voluntary and I may withdraw at any time without my legal rights being affected.	X

Data Protection
I understand that information collected about me during my participation in this study will be stored on a password protected computer and that this information will only be used for the purpose of this study. All files containing any personal data will be made anonymous.

Name of participant (print name)……
Signature of participant……..
Date……

Appendix D Participant Information Sheet

UNIVERSITY OF Southampton

Participant Information Sheet (Face to Face oct2016_16-10-26 _115224 (2))
Paper-Based survey

Study Title: Blended Learning: An examination of EFL Teachers and Students' Use, Continuance Intention to Use, and Attitudes towards Information and Communication Technologies

Researcher: María Georgina Fernández Sesma Ethics number: 25891

Please read this information carefully before deciding to take part in this research. If you are happy to participate by answering a paper-based survey you will be asked to sign a consent form.

What is the research about?
Hello. I am a student in the distance program of PhD in Modern Languages. I am conducting a study to get my doctoral degree. The purpose of this study is to examine to what extent factors considered as key predictors of acceptance and use of information technology (IT) such as performance expectancy, effort expectancy, social influence, ICT self-efficacy, and facilitating conditions contribute to the EFL teachers and students' attitudes towards ICTs. Also, it investigates the relationship between attitudes, actual usage, and continuance intention to use ICTs. In addition, it also seeks to know the EFL teachers and students' actual use and continuance intention to use ICTs to develop the four language skills and sub-skills within the blended learning modality. The research is sponsored by the University of Southampton and funded by the Programa para el Desarrollo Profesional Docente, del Tipo Superior (PRODEP).

Why have I been chosen?
You have been chosen to participate in this study because you are an EFL teacher who uses ICTs in your teaching practice within the blended learning modality, and you are familiar with this learning environment. Hence, the information you provide will be very useful for the purpose of this research. I really appreciate the time you are taking to join us in this study.

What will happen to me if I take part?
As a participant, you will be asked to voluntarily give your consent to participate in this study answering a paper-based survey. Your participation in this study is completely voluntary, and you have the right to withdraw at any time without your legal rights being affected.

The application of the instruments for data gathering will follow the next methodology:

All teachers (50) of the School of English will be asked to respond an online survey; however, due to the heavy schedule of the teachers, surveys will be also delivered in paper and pencil to ensure that all teachers have the opportunity to answer the instrument.
In this case, before EFL teachers answer the paper-based survey, the researcher will read out loud the Consent Form and the Participant Information Sheet to them. As well, she will give a brief explanation of the purpose of the investigation and will explain key terminology that may result in unfamiliar to the participant teachers. Additionally, the researcher will ask if they have any questions.
When answering the instruments, please keep in mind that there are no right or wrong answers. Your honest response will allow collecting data that reflect reality as much as possible.

Are there any benefits in my taking part?
Your participation in this study will permit to gather information that once analysed will contribute with new insights into the knowledge society, regarding the perceptions of the factors that influence the teachers' attitudes towards actual usage and continuance intentions to use ICTs in EFL within the blended learning modality.

Are there any risks involved?
There are no foreseen risks and any other implications for participants in this study.

Will my participation be confidential?
Data provided by participants will be used only for the purposes of this study in compliance with the Data Protection Act; however, due to the instruments for data collection in this study include paper-based surveys given directly by the researcher or an assistant to the participant teacher in the university campus, a complete anonymity cannot be promised. The risk will be minimised by keeping all data strictly confidential and stored in a password protected computer in the researcher's locked office. This research is conducted in line with the requirements of the University of Southampton *Policy on the Ethical conduct of Research involving human participants.* Ethics number 25891.

What happens if I change my mind?
Participation in this study is completely voluntary. You have the right to withdraw at any time without your legal rights being affected.

What happens if something goes wrong?
In the unlikely case of concern or complaint, you can contact the Chair of Ethics Committee at the University of Southampton, Prof. Denis McManus (D.Mcmanus@soton.ac.uk).

Appendix E Focus Group Guide

I. Participants Personal Information:

Participant teachers/students	Gender	Educational/English level	ICTs experience in EFL
Date: / /			
Group interview duration:			

II. UTAUT Model Questions:

CONSTRUCTS	QUESTIONS
Performance expectancy	1. In your opinion, what aspects of ICTs help you improve your teaching/learning practice?
Effort Expectancy	2. Do you find ICTs easy to use to teach/learn English? Please explain.
Social influence	3. To what degree do you care what people who are important for you think about whether or not you should use ICTs to teach/learn English? (e.g., University administration, teachers, students, family, friends)
ICT Self-efficacy	4. To what extent do you think you have the ability needed to use ICTs to teach/learn English?
Facilitating conditions	5. In your opinion, to what degree the university facilitates your teaching/learning practice by providing well-equipped classrooms, Internet connectivity, and a technical support department?
Attitudes	6. How do you feel about using ICTs as a medium to teach/learn English?
Actual use	7. What do you use ICTs primarily for in activities related to English teaching/learning, and how do you use them? (Inside and outside the classroom)
Continuance intentions to use	8. Do you consider that you will continue to use ICTs to teach/learn English in the future? Why?

III. Final questions:

a. Are there any other factors related to the use of ICTs you would like to add?

b. What are the possible barriers that discourage you from using ICTs to teach/learn English?

Thank you for your time and participation!

Appendix F Consent Form – Focus Group

UNIVERSITY OF Southampton

CONSENT FORM *(FACE TO FACE: oct2016_16-10-26_115155 (1)*)

Study title: Blended Learning: An examination of EFL Teachers and Students' Use, Continuance Intention to Use, and Attitudes towards Information and Communication Technologies

Researcher name: María Georgina Fernández Sesma
Staff/Student number: 27477789
ERGO reference number: 25891

Your data will be kept confidential; however, due to the nature of the instruments used in this research involves focus groups complete anonymity cannot be promised. Thus, this risk will be minimised by keeping the participants' data strictly confidential in a password protected computer, and in the researcher's locked office.

The data collected will be managed exclusively by the researcher, and used only for the purpose of this investigation in compliance with the Data Protection Act.

Please initial the box (es) if you agree with the statement(s):

I agree to take part in this research project and agree for my data to be used.	☐
I understand my participation is voluntary and I may withdraw at any time without my legal rights being affected.	☐
I agree to participate in a focus group.	☐
I agree that the group interview to be recorded to avoid losing information and for later transcription.	☐

Data Protection

I understand that information collected about me during my participation in this study will be stored on a password protected computer and that this information will only be used for the purpose of this study. All files containing any personal data will be made anonymous.

Name of participant (print name)……
Signature of participant……..
Date……

Appendix G Participant Information Sheet- Focus groups

UNIVERSITY OF Southampton

Participant Information Sheet (Face to Face oct2016_16-10-26 _115224 (1)**)**

Focus Groups

Study Title: Blended Learning: An examination of EFL Teachers and Students' Use, Continuance Intention to Use, and Attitudes towards Information and Communication Technologies

Researcher: María Georgina Fernández Sesma **Ethics number**: 25891

Please read this information carefully before deciding to take part in this research. If you are happy to participate in a *focus group* you will be asked to sign a consent form.

What is the research about?
Hello. I am a student in the distance program of PhD in Modern Languages. I am conducting a study to get my doctoral degree. The purpose of this study is to examine to what extent factors considered as key predictors of acceptance and use of information technology (IT) such as performance expectancy, effort expectancy, social influence, ICT self-efficacy, and facilitating conditions contribute to the EFL teachers and students' attitudes towards ICTs. Also, it investigates the relationship between attitudes, actual usage, and continuance intention to use ICTs. In addition, it also seeks to know the EFL teachers and students' actual use and continuance intention to use ICTs to develop the four language skills and sub-skills within the blended learning modality. The research is sponsored by the University of Southampton and funded by the Programa para el Desarrollo Profesional Docente, del Tipo Superior (PRODEP).

Why have I been chosen?
You have been chosen to participate in this study because you are a user of ICTs in EFL within the blended learning modality, and you are familiar with this learning environment. Hence, the information you provide will be very useful for the purpose of this research. I really appreciate the time you are taking to join us in this study.

What will happen to me if I take part?
As a participant, you will be asked to voluntarily give your consent to participate in a focus group (a group interview). A sample of six teachers and six students will be invited to participate in a focus group. Your participation in this study is completely voluntary. You have the right to withdraw at any time without your legal rights being affected.

The application of the instruments for data gathering will follow the next methodology:

a) Focus groups for EFL teachers:
Six EFL teachers will be invited to participate in a group interview. The questionnaire will include questions related to how factors considered as key predictors of acceptance and use of information technology (IT) influence their attitudes towards the use and future use of ICTs; as well as, which barriers they encounter when using ICTs to teach English within the blended learning environment.

b) Focus groups for EFL students:
Six EFL students will be invited to participate in a group interview. The questionnaire will include questions related to how factors considered as key predictors of acceptance and use of technology (IT) influence their attitudes towards the use and future use of ICTs; as well as, which barriers they encounter when using ICTs to learn English within the blended learning modality.

During the focus groups:

Appendix G

In order to provide the necessary privacy to participant teachers and students during the group interviews, they will take place in the meeting room of the university previously reserved by the researcher. Interviews will be conducted at different moments. The teachers' group interview will be scheduled first and, on a different date the students' group interview. Focal groups will be conducted behind closed doors with a duration of one hour to one hour and a half in a single visit with no follow-up meetings. The researcher (interviewer) will guide the interview asking questions to collect the information needed, and the participants (interviewee) will answer them freely and voluntarily. The audio will be recorded to avoid losing information, and later it will be transcribed.
When answering the instruments, please keep in mind that there are no right or wrong answers. Your honest response will allow collecting data that reflect reality as much as possible.

Are there any benefits in my taking part?
Your participation in this study will permit to gather information that once analysed will contribute with new insights into knowledge society regarding the perceptions of the factors that influence the teachers' attitudes towards actual usage and continuance intentions to use ICTs in EFL within the blended learning modality.

Are there any risks involved?
There are no foreseen risks and any other implications for participants in this study.

Will my participation be confidential?
Data provided by participants will be used only for the purposes of this study in compliance with the Data Protection Act; however, due to the instruments for data collection include focus groups conducted by the researcher, and carried out at the university campus, complete anonymity cannot be promised. The risk will be minimised by keeping all data strictly confidential and stored in a password protected computer in the researcher's locked office. This research is conducted in line with the requirements of the University of Southampton *Policy on the Ethical conduct of Research involving human participants.* Ethics number 25891.

What happens if I change my mind?
Participation in this study is completely voluntary. You have the right to withdraw at any time without your legal rights being affected.

What happens if something goes wrong?
In the unlikely case of concern or complaint, you can contact the Chair of Ethics Committee at the University of Southampton, Prof. Denis McManus (D.Mcmanus@soton.ac.uk).

Appendix H Observation Form

English Teaching and Learning through ICTs

Level _____ Class observation # _____ Teacher # _____

Lesson topic _____

A. Classroom Facility

Classroom adequate size for student number	Good Internet connection
Adequate number of computers for students	Projection system
Headsets	Speakers
Computer assigned for the teacher	Whiteboard

B. Electronic devices used in class:

Computer	Laptop	Tablet computer	Smartphone or cell phone
Other?			

C. Mark ✓ the online resources used in class and the skills or sub-skills they were focused on:

	Focused on:						
Online resources:	Reading	Writing	Listening	Speaking	Gra	Voc	Pro
1. Videos							
2. E-mail							
3. Computer games							
4. Social networks							
5. Google docs							
6. Blogs							
7. Wikis							
8. Chats							
9. Powerpoint, Prezi							
10. Online translators							
11. Online dictionaries							
12. Skype							
13. E-portfolios							
14. Smrt English course							
15. Activities taken from the internet							
16. Teacher's web page							
Other?							

Gra= Grammar, Voc= Vovabulary, Pro = Pronunciation.

D. Describe how the online resources you marked above were used by the teacher and students._____

E. Barriers or obstacles observed when teachers and students used ICTs during class:

_____

F. The use of ICTs during class was primarily for:

a. Class delivery ___ b. Student interaction ___ c. Both class delivery and student interaction ___ d. Revision of homework assignments or projects ___

Comments:

_____

G. Grouping arrangements and ICTs usage:
The whole group ____ Small groups ____ Big groups ____ Pair work ____ Individual work___

Comments: _____

H. How does the teacher respond to the students learning needs related to the use of ICTs in EFL?
_____

Appendix I Consent From – Observations

UNIVERSITY OF Southampton

CONSENT FORM (FACE TO FACE: oct2016_16-10-26_115155 (3))
Class observation

Study title: Blended Learning: An examination of EFL Teachers and Students' Use, Continuance Intention to Use, and Attitudes towards Information and Communication Technologies

Researcher name: María Georgina Fernández Sesma
Staff/Student number: 27477789
ERGO reference number: 25891

Your data will be kept confidential; however, due to the nature of the instruments used in this research involves class observations complete anonymity cannot be promised. Thus, this risk will be minimised by keeping the participants' data strictly confidential in a password protected computer, and in the researcher's locked office.

The data collected will be managed exclusively by the researcher, and used only for the purpose of this investigation in compliance with the Data Protection Act.

Please initial the box (es) if you agree with the statement(s):

I have read and understood the information sheet no. oct2016_16-10-26 _115224 (3), and have had the opportunity to ask questions about the study.	☐
I agree to take part in this research project and agree for my data to be used for the purpose of this study.	☐
I understand my participation is voluntary and I may withdraw at any time without my legal rights being affected.	☐
I agree to participate in a class observation.	☐
I agree that the researcher will record the class to avoid losing information.	☐

Data Protection

I understand that information collected about me during my participation in this study will be stored on a password protected computer and that this information will only be used for the purpose of this study. All files containing any personal data will be made anonymous.

Name of participant (print name)……
Signature of participant……..
Date……

Appendix J Syntax of the Mahalanobis distance and multivariate outliers detected in the students' data

```
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN (.05) POUT (.10)
  /NOORIGIN
  /DEPENDENT Student_number
  /METHOD=ENTER PE1 PE2 PE3 PE4 PE5 EE1 EE2 EE3 EE4 EE5 SI1 SI2 SI3 SI4 SI5 SE1 SE2 SE3 SE4 SE5 FC1
    FC2 FC3 FC4 FC5 AT1 AT2 AT3 AT4 AT5 AU1 AU2 AU3 AU4 AU5 CIU1 CIU2 CIU3 CIU4 CIU5
  /SAVE MAHAL.
```

Multivariate outliers detected in Students' data			
#	Case number	Mahalanobis Distance	P < 0.001
1	471	79.36095	0.00021
2	54	78.5194	0.00026
3	7	77.67264	0.00033
4	128	76.42101	0.00046
5	118	75.35327	0.00061
6	451	75.2695	0.00062
7	81	74.64096	0.00073
8	333	74.48621	0.00076
9	75	74.25193	0.00081
10	224	73.83183	0.0009

Appendix K Skewness and kurtosis statistics at item-level

(UTAUT model variables in ETQ and ESQ questionnaires)

		Teachers (n = 70)				Students (n = 468)			
#		Skewness	SDE	Kurtosis	SDE	Skewness	SDE	Kurtosis	SDE
1	PE1	-.227	.287	-1.061	.566	-.603	.113	-.258	.225
2	PE2	-.170	.287	-.987	.566	-.552	.113	-.317	.225
3	PE3	-.519	.287	-.554	.566	-.604	.113	-.447	.225
4	PE4	-.658	.287	.209	.566	-.395	.113	-.092	.225
5	PE5	-.683	.287	.052	.566	-.518	.113	-.307	.225
6	EE1	-.658	.287	-.539	.566	-.490	.113	-.255	.225
7	EE2	-.507	.287	-.870	.566	-.346	.113	-.470	.225
8	EE3	-.970	.287	-1.092	.566	-.689	.113	-.273	.225
9	EE4	-.959	.287	.459	.566	-.378	.113	-.341	.225
10	EE5	-.469	.287	-.872	.566	-.486	.113	-.118	.225
11	SI1	-.573	.287	-.926	.566	-.486	.113	.080	.225
12	SI2	-.419	.287	-.661	.566	-.308	.113	-.118	.225
13	SI3	-.892	.287	-1.240	.566	-.595	.113	-.488	.225
14	SI4	-.175	.287	-1.229	.566	-.381	.113	-.118	.225
15	SI5	-.658	.287	-.539	.566	-.572	.113	-.081	.225
16	ICTSE1	-.970	.287	-1.092	.566	-.742	.113	-.226	.225
17	ICTSE2	-.902	.287	-.640	.566	-.712	.113	-.088	.225
18	ICTSE3	-.632	.287	-.834	.566	-.436	.113	-.224	.225
19	ICTSE4	-.613	.287	-.769	.566	-.486	.113	-.273	.225
20	ICTSE5	-.754	.287	-.446	.566	-.325	.113	-.425	.225
21	FC1	-.689	.287	-.382	.566	-.230	.113	-.501	.225
22	FC2	-.498	.287	-.945	.566	-.625	.113	.121	.225
23	FC3	-.830	.287	-.434	.566	-.493	.113	-.011	.225
24	FC4	-.288	.287	-1.108	.566	-.760	.113	.190	.225
25	FC5	-.674	.287	-.723	.566	-.412	.113	-.058	.225
26	AT1	-.945	.287	-.121	.566	-1.087	.113	.964	.225
27	AT2	-.907	.287	-.246	.566	-.784	.113	.135	.225
28	AT3	-.732	.287	-.826	.566	-.833	.113	.168	.225
29	AT4	-.766	.287	-.569	.566	-.487	.113	-.366	.225
30	AT5	-.417	.287	-1.165	.566	-.538	.113	-.212	.225
31	AU1	-.511	.287	-.797	.566	-.381	.113	-.082	.225
32	AU2	-1.014	.287	.368	.566	-.609	.113	-.235	.225
33	AU3	-.217	.287	-.564	.566	-.543	.113	-.223	.225
34	AU4	-1.315	.287	.567	.566	-.417	.113	-.999	.225
35	AU5	-.498	.287	-.945	.566	-.449	.113	-.120	.225
36	CIU1	-1.130	.287	.151	.566	-.377	.113	-.647	.225
37	CIU2	-.797	.287	-.313	.566	-.467	.113	-.161	.225
38	CIU3	-.480	.287	-1.823	.566	-.518	.113	-.010	.225
39	CIU4	-1.252	.287	.130	.566	-.443	.113	-1.024	.225
40	CIU5	-.677	.287	-1.588	.566	-.495	.113	-.354	.225

Appendix L Descriptive statistics at item-level

		ETQ questionnaire (n = 70)				ESQ questionnaire (n = 468)			
#	Items	Min	Max	Mean	SD	Min	Max	Mean	SD
1	PE1	3	5	4.14	.728	2	5	4.06	.838
2	PE2	3	5	4.11	.713	2	5	4.08	.815
3	PE3	2	5	3.89	.941	1	5	3.60	1.166
4	PE4	2	5	4.00	.816	1	5	4.00	.766
5	PE5	2	5	4.04	.842	2	5	4.01	.829
6	EE6	3	5	4.41	.648	2	5	4.10	.764
7	EE7	3	5	4.30	.709	2	5	3.94	.811
8	EE8	4	5	4.71	.455	1	5	3.77	1.085
9	EE9	2	5	4.14	.873	2	5	3.93	.801
10	EE10	3	5	4.29	.705	2	5	4.18	.705
11	SI11	3	5	4.31	.733	2	5	3.97	.758
12	SI12	2	5	3.96	.892	1	5	3.44	.994
13	SI13	4	5	4.70	.462	1	5	3.85	1.051
14	SI14	2	5	3.70	1.068	1	5	3.59	.983
15	SI15	3	5	4.41	.648	2	5	4.19	.731
16	ICT SE16	4	5	4.71	.455	2	5	4.36	.701
17	ICT SE17	3	5	4.43	.753	2	5	4.22	.776
18	ICT SE18	2	5	3.94	1.062	2	5	4.11	.731
19	ICT SE19	2	5	4.00	1.007	1	5	3.83	.910
20	ICT SE20	3	5	4.44	.651	2	5	3.98	.774
21	FC21	2	5	4.14	.873	2	5	3.88	.790
22	FC22	3	5	4.29	.725	2	5	4.18	.734
23	FC23	2	5	4.04	1.028	1	5	3.80	.921
24	FC24	1	5	3.49	1.113	1	5	3.72	1.062
25	FC25	3	5	4.37	.705	2	5	4.07	.718
26	AT26	3	5	4.51	.631	2	5	4.30	.782
27	AT27	3	5	4.49	.654	2	5	4.22	.783
28	AT28	3	5	4.37	.745	1	5	3.82	1.070
29	AT29	3	5	4.41	.691	2	5	4.03	.815
30	AT30	3	5	4.23	.765	2	5	4.06	.799
31	AU31	3	5	4.31	.692	2	5	4.04	.717
32	AU32	2	5	4.07	.937	2	5	4.17	.778
33	AU33	3	5	4.30	.598	2	5	4.09	.792
34	AU34	3	5	4.59	.648	1	5	3.53	1.293
35	AU35	3	5	4.29	.725	1	5	3.91	.837
36	CIU36	3	5	4.54	.652	2	5	4.08	.784
37	CIU37	3	5	4.50	.608	2	5	4.09	.743
38	CIU38	4	5	4.61	.490	2	5	4.12	.734
39	CIU39	3	5	4.54	.716	1	5	3.54	1.312
40	CIU40	4	5	4.66	.478	2	5	4.12	.769

Appendix M EFL teachers' frequency table

Item Label	Strongly Disagree (%)	Disagree (%)	Neither agree/nor disagree (%)	Agree (%)	Strongly agree (%)
PE1	0.0	0.0	20.0	45.7	34.3
PE2	0.0	0.0	20.0	48.6	31.4
PE3	0.0	10.0	20.0	41.4	28.6
PE4	0.0	5.7	15.7	51.4	27.1
PE5	0.0	5.7	15.7	47.1	31.4
EE6	0.0	0.0	8.6	41.4	50.0
EE7	0.0	0.0	14.3	41.4	44.3
EE8	0.0	0.0	0.0	28.6	71.4
EE9	0.0	7.1	10.0	44.3	38.6
EE10	0.0	0.0	14.3	42.9	42.9
SI11	0.0	0.0	15.7	37.1	47.1
SI12	0.0	5.7	24.3	38.6	31.4
SI13	0.0	0.0	0.0	30.0	70.0
SI14	0.0	15.7	28.6	25.7	30.0
SI15	0.0	0.0	8.6	41.4	50.0
ICT SE16	0.0	0.0	0.0	28.6	71.4
ICT SE17	0.0	0.0	15.7	25.7	58.6
ICT SE18	0.0	14.3	15.7	31.4	38.6
ICT SE19	0.0	10.0	20.0	30.0	40.0
ICT SE20	0.0	0.0	8.6	38.6	52.9
FC21	0.0	4.3	18.6	35.7	41.4
FC22	0.0	0.0	15.7	40.0	44.3
FC23	0.0	12.9	11.4	34.3	41.4
FC24	1.4	25.7	14.3	40.0	18.6
FC25	0.0	0.0	12.9	37.1	50.0
AT26	0.0	0.0	7.1	34.3	58.6
AT27	0.0	0.0	8.6	34.3	57.1
AT28	0.0	0.0	15.7	31.4	52.9
AT29	0.0	0.0	11.4	35.7	52.9
AT30	0.0	0.0	20.0	37.1	42.9
AU31	0.0	0.0	12.9	42.9	44.3
AU32	0.0	11.4	5.7	47.1	35.7
AU33	0.0	0.0	7.1	55.7	37.1
AU34	0.0	0.0	8.6	24.3	67.1
AU35	0.0	0.0	15.7	40.0	44.3
CIU36	0.0	0.0	8.6	28.6	62.9
CIU37	0.0	0.0	5.71	38.6	55.7
CIU38	0.0	0.0	0.0	38.6	61.4
CIU39	0.0	0.0	12.9	20.0	67.1
CIU40	0.0	0.0	0.0	34.3	65.7

Appendix N EFL students' frequency table

Item Label	Strongly disagree (%)	Disagree (%)	Neither agree/nor disagree (%)	Agree (%)	Strongly agree (%)
PE1	0.0	4.7	17.9	43.6	33.8
PE2	0.0	3.6	18.6	44.0	33.8
PE3	6.4	12.0	21.8	35.3	24.6
PE4	0.2	2.1	21.8	49.6	26.3
PE5	0.0	4.7	19.7	45.5	30.1
EE6	0.0	2.4	17.5	47.9	32.3
EE7	0.0	4.1	23.9	46.2	25.9
EE8	3.2	11.8	18.6	38.0	28.4
EE9	0.0	4.3	22.9	48.3	24.6
EE10	0.0	1.3	13.7	51.1	34.0
SI11	0.0	3.8	18.6	54.1	23.5
SI12	4.1	10.0	38.7	32.5	14.7
SI13	1.7	10.3	22.4	32.1	33.5
SI14	3.0	8.1	34.8	35.0	19.0
SI15	0.0	1.7	13.9	48.3	36.1
ICT SE16	0.0	.6	11.1	40.0	48.3
ICT SE17	0.0	2.4	14.3	42.1	41.2
ICT SE18	0.0	1.7	16.7	50.6	31.0
ICT SE19	.6	7.7	24.1	42.7	24.8
ICT SE20	0.0	2.8	22.6	48.5	26.1
FC21	0.0	3.6	26.9	47.2	22.2
FC22	0.0	2.1	13.0	49.4	35.5
FC23	1.5	5.6	28.4	40.2	24.4
FC24	4.9	6.8	24.1	39.5	24.6
FC25	0.0	1.9	16.9	53.8	27.4
AT26	0.0	4.1	7.9	42.3	45.7
AT27	0.0	3.0	13.0	42.9	41.0
AT28	4.1	7.9	19.4	38.9	29.7
AT29	0.0	3.8	20.1	45.1	31.0
AT30	0.0	3.6	18.2	46.8	31.4
AU31	0.0	1.9	17.7	54.3	26.1
AU32	0.0	2.4	16.0	43.8	37.8
AU33	0.0	3.2	17.7	46.4	32.7
AU34	7.7	17.1	20.3	24.1	30.8
AU35	.4	4.3	24.4	45.5	25.4
CIU36	0.0	1.9	21.4	43.8	32.9
CIU37	0.0	2.1	16.9	50.4	30.6
CIU38	0.0	2.1	15.2	51.3	31.4
CIU39	8.1	17.5	18.2	24.6	31.6
CIU40	0.0	2.1	17.7	45.9	34.2

Appendix O Labels of the items of the ETQ questionnaire

Label	Performance expectancy
PE1	Using ICTs helps me better teach reading, writing, listening, and speaking skills.
PE2	Using ICTs enables me to accomplish teaching tasks more quickly.
PE3	Using ICTs reduces the development of my students' language skills. (reverse coded)
PE4	The use of ICTs improves the quality of my teaching practice.
PE5	Using ICTs makes it easier for me to teach grammar, vocabulary, and pronunciation.
	Effort expectancy
EE6	Using ICTs to teach English is easy for me.
EE7	It would be easy for me to become skilful in all kinds of ICTs because they are easy to use.
EE8	I think that using ICTs to teach English is too difficult. (reverse coded)
EE9	It is easy for me to do what I want with ICTs to facilitate my teaching practice.
EE10	Learning to use ICTs is easy for me.
	Social Influence
SI11	The university administration considers that I should use ICTs to teach English.
SI12	Using ICTs to teach English makes me more valuable to my coordinator.
SI13	People who are important to me disapprove of me using ICTs to teach English. (reverse coded)
SI14	Using ICTs to teach English makes me appear to be a better teacher.
SI15	In general, the university has supported the use of ICTs to teach English.
	ICT Self-efficacy
ICTSE16	I can access the Smrt contents and online resources on the Internet without help.
ICTSE17	I can use ICTs even if there is no one around to tell me what to do as I go.
ICTSE18	I can overcome obstacles that occur when I use ICTs to teach English.
ICTSE19	I have the ability to use ICTs to teach English without manuals to guide me in how to do it.
ICTSE20	In general, I am competent enough in the use of ICTs to teach English.
	Facilitating conditions
FC21	Using ICTs to teach English suits me.
FC22	I have the resources necessary to teach English in the classroom.
FC23	Support staff provides help when there is a technical problem.
FC24	The speed of the Internet is adequate to work online in the classroom.
FC25	Overall, I have the knowledge necessary to use ICTs to teach English.
	Attitudes
AT26	I like the idea of using ICTs to teach English.
AT27	Using ICTs to teach English is enjoyable.
AT28	Using ICTs to teach English is boring. (reverse coded)
AT29	Using ICTs to teach English is fun.
AT30	Using ICTs to teach English makes it more interesting.
	Actual use
AU31	In class, I use ICTs to help students develop their reading, writing, listening, and speaking skills.
AU32	I generally assign out-of-class activities (e.g., homework/projects) that involve the use of ICTs.
AU33	In class, I use ICTs to teach grammar, vocabulary, and pronunciation.
AU34	I dislike using ICTs to teach English. (reverse coded)
AU35	Overall, I use ICTs to teach English on a daily basis.

	Continuance intention to use
CIU36	I predict I will continue using ICTs in the future to help my students develop their reading, writing, listening, and speaking skills.
CIU37	I intend to continue using ICTs in the future to help students develop their grammar, pronunciation, and vocabulary.
CIU38	I plan to continue using ICTs in the future to keep my students practising the English they have learned.
CIU39	I dislike the idea of using ICTs to teach English in the future. (reverse coded)
CIU40	Overall, I will continue using ICTs to teach English in the future.

Appendix P Labels of the items of the ESQ questionnaire

Labels	Performance expectancy
PE1	Using ICTs helps me better learn reading, writing, listening, and speaking skills.
PE2	Using ICTs enables me to accomplish learning tasks more quickly.
PE3	Using ICTs reduces the development of my language skills. (reverse coded)
PE4	The use of ICTs improves the quality of my learning.
PE5	Using ICTs makes it easier for me to learn grammar, vocabulary, and pronunciation.
	Effort expectancy
EE6	Using ICTs to learn English is easy for me.
EE7	It would be easy for me to become skilful in all kinds of ICTs because they are easy to use.
EE8	I think that using ICTs to learn English is too difficult. (reverse coded)
EE9	It is easy for me to do what I want with ICTs to facilitate my learning practice.
EE10	Learning to use ICTs is easy for me.
	Social influence
SI11	The university administration considers that I should use ICTs to learn English.
SI12	Using ICTs to learn English makes me more valuable to my teacher and classmates.
SI13	People who are important to me disapprove of me using ICTs to learn English. (reverse coded)
SI14	Using ICTs to learn English makes me appear to be a better student.
SI15	In general, the university has supported the use of ICTs to learn English.
	ICT Self-efficacy
ICTSE16	I can access the Smrt contents and online resources on the Internet without help.
ICTSE17	I can use ICTs even if there is no one around to tell me what to do as I go.
ICTSE18	I can overcome obstacles that occur when I use ICTs to learn English.
ICTSE19	I have the ability to use ICTs to learn English without manuals to guide me in how to do it.
ICTSE20	In general, I am competent enough in the use of ICTs to learn English.
	Facilitating conditions
FC21	Using ICTs to learn English suits me.
FC22	I have the resources necessary to learn English in the classroom.
FC23	Support staff provides help when there is a technical problem.
FC24	The speed of the Internet is adequate to work online in the classroom.
FC25	Overall, I have the knowledge necessary to use ICTs to learn English.
	Attitudes
AT26	I like the idea of using ICTs to learn English.
AT27	Using ICTs to learn English is enjoyable.
AT28	Using ICTs to learn English is boring. (reverse coded)
AT29	Using ICTs to learn English is fun.
AT30	Using ICTs to learn English makes it more interesting.
	Actual use
AU31	In class, I use ICTs to develop my reading, writing, listening, and speaking skills.
AU32	I generally use ICTs to do my out-of-class activities (assignments/projects).
AU33	In class, I use ICTs to do grammar, vocabulary, and pronunciation exercises.

AU34	I dislike using ICTs to learn English. (reverse coded)
AU35	Overall, I use ICTs to learn English on a daily basis.
	Continuance intention to use
CIU36	I predict I will continue using ICTs in the future to improve my reading, writing, listening, and speaking skills.
CIU37	I intend to continue using ICTs in the future to better develop my grammar, pronunciation, and vocabulary.
CIU38	I plan to continue using ICTs in the future to keep practising the English I have learned.
CIU39	I dislike the idea of using ICTs to learn English in the future. (reverse coded)
CIU40	Overall, I will continue using ICTs to learn English in the future.

Appendix Q Classroom observation report

The classrooms visited were four groups of the second level and four groups of the fourth level with different teachers. The classroom observations took place during the second half of May 2017. Additionally, classes were recorded to capture all the details for further analysis.

The classrooms were equipped with an Internet connection, 24 computers for students and 1 for the teacher, and Smart TV. It was noted that the computers did not have some gadgets that could serve to help the students develop the speaking and listening skills, and pronunciation such as a set of earphones and microphone, a clip-on webcam, or a monitor with a webcam integrated.

Regarding the electronic devices used in class, the teachers and students are free to use the electronic devices of their preference. In the case of the classrooms visited, only in one classroom, it was observed the use of electronic devices different from the desktop computer such as laptops and smartphones.

Main uses of ICTs in class

In observation 1, teacher Manuel used the Internet game '*Spin off the Wheel*' during the warm-up activity to ask questions of the previous lesson to the fourth-level students. Then, he used an Internet video to present the grammar topic about the modal auxiliary verbs. The teacher asked questions and clarified the students' doubts. In another activity, the teacher used the online game '*Kahoot!*' to test the students' knowledge on the topic. When the students answered incorrectly the teacher explained the grammar point again. After these activities, the teacher continued to teach modal auxiliary verbs using the exercises of the Smrt course. In this class, ICTs were used to foster teacher-student interaction. In fact, the students were not asked to work in pairs or teams.

Observation 2 represents another example of how teachers use ICTs at the beginning of a lesson, in this case, to get students familiar with useful vocabulary. Teacher Mela explained the instructions of the activity to the fourth-level students. The activity consisted of working in teams searching for the meaning of new vocabulary words in *online dictionaries*. Then, each member of the team had to write a sentence including the words assigned by the teacher. In the second part of the activity, the teacher asked the teams to guess which team had written a sentence that she read aloud. When the activity finished, the teacher asked the students to continue to work in the *Language in Use* section of Smrt. In this class, ICTs mainly served to promote student-student and teacher-student interactions.

Appendix Q

In observation 3, teacher Alicia reviewed the prepositions of place and vocabulary words by playing the online games *Fast English* and the *Hangman* as a warm-Up activity. In a new topic, the teacher taught the different ways to express future. The teacher used the Grammar section of Smrt to explain and show some examples. Then, she asked the second-level students to do some exercises by themselves. After some minutes, they shared with the teacher a copy of their exercises, and she projected the correct responses on the TV screen to check them one by one. Later, she used the online game '*Kahoot!*' for the students continued practising the future tense. The teacher-directed the exercises, and the students responded on their computers. In this case, ICTs were used to promote teacher-student interaction.

In observation 4, Teacher Juan used a *PowerPoint* presentation created by him teach the 'simple past' and 'present perfect' tenses. Then, he asked the fourth-level students to do the exercises of the Grammar section of Smrt individually. Later, the teacher divided the class into two big groups and called to the front to one member of each team for them to write a sentence that included the 'past simple' or 'present perfect' tense. In this class, ICTs served to promote teacher-student and student-student interactions.

In observation 5, teacher Mariela had the second-level students working on the final project of the semester. The project consisted of creating a *Jeopardy* game in *PowerPoint*. To provide them with more materials, the teacher projected her blog on the TV screen for students to see the links of grammar and vocabulary activities she had given them in previous classes. Then, she asked the students to use images with vivid colours taken from the Internet and to use hyperlinks to connect the questions to the correct and incorrect responses. The students worked in pairs and were divided into teams of four. Each team had to play the game with the rest of the class. The teams projected their game on the TV screen. The teams directed the game in English, and the rest of the students responded in English too reading the responses from their computers. In this class, the majority of the interactions were student-student because of the activity format.

In observation 6, integrated by second-level students, teacher Carlos applied a speaking activity from the Smrt course. The teacher projected a set of questions on the TV screen from the speaking section of a lesson. Students worked in pairs to practice speaking by asking and answering those questions between each other. When the students asked a question about vocabulary or sentence formation they addressed the teacher in Spanish, but he responded in English. In a way, this activity was similar to those used by EFL teachers who only work with a textbook. The only difference is that Smrt course is an electronic book that makes use of online applications; however, the speaking activities in Smrt consist of a series of questions for the

students to take turns asking and responding them, which results similar to using the textbook. Furthermore, the use of another electronic device such as the smartphone to have the students practising speaking was not observed. The teacher walked around the classroom monitoring the activity and providing support when needed. The students showed a good attitude and the class atmosphere was very nice; though they looked little shy, they never refused to participate in the activity.

In observation 7, teacher Nora used the Smrt course and traditional teaching methods to fourth-level students. She explained the grammar formula of the present perfect tense, and question formation with the auxiliary verb 'have', 'will', and the verb 'to be'. The teacher drew a timeline on the whiteboard to explain the past, present, and future tense. She asked the students to write in their notebooks five positive sentences, five negative sentences, and 5 questions with the auxiliary verbs seen in class. The students worked in pairs and individually during the activities, and she monitored their work providing support. Then, she called the students one by one to write a sentence and a question on the whiteboard. If someone made a mistake, the teacher explained for the whole class again. This class resembled the traditional teaching methods in that the students were quiet, their participation was directed by the teacher, and the only didactic material used by the students was the notebook.

In observation 8, the same pattern of use of ICTs was seen. Teacher Rina asked her second-level students to go to their Google Drive and open the file of the homework she had assigned. She projected the activity answers on the TV screen and explained the use of 'There is', and 'There are' again. Once they finished checking the homework, the teacher projected a list of links of grammar activities and indicated which ones to practice for the exam. The students remained the rest of the class doing grammar exercises individually and the teacher monitored their work walking around the classroom providing help.

The barriers observed in the classrooms visited were related to equipment failures, lack of knowledge of online resources (online dictionaries), lack of technical support, and administrative errors. For example**,** in one classroom three computers were not working. This caused discomfort to the students and the teacher, who had lent his computer to one of the students, and he did not have a desk to put his teaching materials. The teacher was using his own laptop to conduct the class, two students were working on their own laptops, and another one was using his smartphone.

Administrative errors resulted in another barrier. In a class, there were 28 students enrolled when the maximum was 24; hence, 4 students did not have a computer to work with while they waited to be changed to another group. They had to get chairs from another classroom to sit during class

or remained standing up. Another barrier was the lack of knowledge of Internet resources. Many students of the fourth level did not know which websites to consult to find the meaning of the words assigned by the teacher. The majority did not start searching for the words online until the teacher told them what to do in Spanish.

Concerning the class arrangements, it widely depends on the way that the furniture and equipment are placed in the classroom, which is in circles of eight students. There are four tables together with eight desktop computers on top of them. Even though there is not much space left for interactive classroom activities that imply to move around the classroom such as role-plays, interviews between students, or debates among others; the teachers find the way to have the students work in pairs, small groups, big groups, or the whole group with the use of ICTs as observed in some of these classes. For example, in some of the classes observed, a teacher had the students working individually to learn grammar structures through the online game *Hangman.* Another teacher had her students learning grammar by playing the computer game *Spin off the Wheel* in virtual teams, and another teacher had their students working in pairs reading aloud conversations form the Smrt course website to practice pronunciation.

It was observed that the teachers try to explain as clearly as possible the learning activities that students were going to do using ICTs. Therefore, they repeated the instructions or the explanation of the topics several times. Some teachers gave the instructions in English and then in Spanish to make sure that their students understood. Another strategy that a teacher used was that she showed examples on the TV screen explaining step-by-step what the students had to do in the activity. For example, in one of the observations, the teacher asked her students to add voice in the slides of a *PowerPoint* presentation. Most students did not know how to do it, and the teacher projected an example on the TV screen explaining the steps to follow to add voice to PowerPoint presentations. The teacher projected a tutorial after her explanation for students to see how to do it step-by-step from an expert and showed the students the site of that tutorial for them to see it at home. Actually, she followed the steps projecting them on the screen and they were able to see the final product. However, the students could not do it in the classroom because they do not have an earset with a microphone to record the voices they did the activity at home on their equipment.

Appendix R Language skill development, social and educational affordances

Table 27: Language skill development, social, and educational affordances

Affordances	Description	The impact on EFL teaching and learning
Language skill development affordances	**Grammar** -Exercises from Smrt.	- Students benefit from a variety of exercises.
	-Interactive grammar exercises from the Internet (e.g., Kahoot!).	- Provide students automated feedback (Golonka *et al*., 2014). - Helps teachers reinforce the topic. - Helps teachers save time (Al-Kamel, 2018) - Help students get familiar with language structures. - Self-paced revision (Lianjiang, 2017). - Boosts learners' engagement (Al-Kamel, 2018)
	- Grammar videos from Smrt or from the Internet.	- Focus students' attention - Avoid boredom - Help teachers extend topic explanation.
	Vocabulary, pronunciation and listening -Vocabulary exercises of Smrt with image, audio, and linked to online dictionaries (e.g., McMillan Dictionary, Oxford Learner's Dictionary).	-Students associate images, pronunciation, and written text.
	- Vocabulary exercises from the Internet or linked to Smrt with image and audio (e.g., Duolingo, Free Rice, and Spelling City). - Audios from Smrt or online resources linked to Smrt (e.g., CNN, BBC, and TED Talks).	-Speed searches for a lexical item (Golonka *et al.,* 2014) - Students receive automated feedback (Al-Kamel, 2018). - Allow students learn words, and phrases through games.
	- Videos from Smrt Cafe or from the Internet.	- Students become familiar with different accents of English native speakers. - Students listen to authentic materials (Golonka *et al.,* 2014).
	Reading - Readings exercises from Smrt. - Reading exercises from the Internet (e.g., online magazines) or	- Provide students with a variety of activities and appealing content.

	linked to Smrt (e.g., Global Times, DOGOnews).	- Students read from authentic materials (Golonka *et al*, 2014).
	Speaking -Using applications on the smartphone (e.g., *Hello Talk to the World*). - Sending audio messages	- Allow students to practice speaking with their peers and native speakers.
Social affordances	- Scaffolding - Build up a community of EFL learners.	- Students receive support from the teacher online and in the face-to-face mode (Cho and Cho, 2016). - Students develop a sense of belonging (Shrader, 2015) - Overcome the fear of failure (Lianjiang, 2017).
Educational affordances	- Face-to-face and online mode. - Synchronous communication (e.g., instant messaging applications: WhatsApp, Facebook Messenger) and asynchronous communication (e.g., Gmail). - Students take responsibility for their own learning. - Task management - Time management - Teachers' community of practice	- Students benefit from having a teacher in the classroom and online content, and from working online off-campus (Whittaker, 2013). -Students can interact with other students of the target language, their teacher, and native speakers (Golonka *et al.,* 2014). - A sense of autonomy (Al-Kamel, 2018). - A sense of competence (Lianjiang, 2017). - Organisation and access to documents online. - Teachers have time to focus on important work (e.g., feedback) (Norberg, 2017). - Teachers develop a sense of belonging (Wenger, 1998)