

## The implementation of ICTs in the English language classroom in a Latin American university

La implementación de las TIC en la clase de inglés en una universidad Latinoamericana

Rosario Ruiz-Ortega <sup>a</sup>

---

### Abstract:

This investigation was carried out in Mexico, in the Universidad Autónoma del Estado de Hidalgo (UAEH), with the purpose of exploring and analyzing to what extent the teaching practices in this English class at the tertiary level involved the use of Information and Communication Technologies (ICTs) for the improvement of language learning. Through an electronic survey, opinions of 50 teachers of English at the UAEH were analyzed. The results showed that, in the respondents' opinions, ICTs now play an essential role in language teaching and they also have a significant field presence. However, despite their perceived importance in the field of language teaching and learning, there are still a number of factors which influence teachers' decisions to sufficiently integrate ICTs into current courses in the university and we are thus still not taking full advantage of the pedagogic benefits to learning, suggested by current research. (Al-Kamel, 2018; Büyükahıska, 2016; Shin, 2015; Mørk Røkenes, 2015). The data collection tool for the initial phase of the project was an online questionnaire with 20 items, using a five-point Likert scale. Data analysis included descriptive statistics from a spreadsheet automatically generated from Google Drive. Qualitative data was then collected by following a case study approach, exploring specific cases in greater depth. For this stage, semi-structured interviews were carried out with key participants, chosen from the information derived from the data gathered in the questionnaires. The third source of data consisted of the qualitative analysis of official documents explaining institutional language policy for the implementation of ICTs in the language classroom at the UAEH.

### Keywords:

English language teaching, Information and Communication Technologies (ICTs), pedagogical resources, university education

---

### Resumen:

La investigación se llevó a cabo en México en la Universidad Autónoma del Estado de Hidalgo (UAEH) con el propósito de explorar y analizar en qué medida las prácticas de enseñanza de inglés a nivel terciario implican el uso de las TIC. A través de una encuesta electrónica, se analizaron las respuestas de 50 maestros de inglés en la UAEH. Los resultados muestran que las TIC desempeñan un papel esencial en la enseñanza de idiomas y también tienen una presencia significativa en el campo. Sin embargo, a pesar de su importancia, existen varios factores que influyen en las decisiones de los docentes para integrar eficazmente las TIC en los cursos presenciales de la universidad y tampoco se aprovecha al máximo los beneficios pedagógicos que aportan al aprendizaje tal como lo sugieren investigaciones recientes. (Al-Kamel, 2018; Büyükahıska, 2016; Shin, 2015; Mørk Røkenes, 2015). El instrumento para la recolección de los datos en la fase inicial del proyecto fue un cuestionario en línea con 20 preguntas utilizando una escala Likert de cinco ítems. El análisis de los datos incluyó estadísticas descriptivas a partir de una hoja de cálculo generada automáticamente desde Google Drive. En la parte cualitativa se incorporó el método de estudio de casos que exploraron casos específicos. Para esta etapa, se llevó a cabo entrevistas semiestructuradas con participantes claves elegidos de la información recopilada en los cuestionarios. La tercera fuente de datos consistió en el análisis cualitativo de los documentos oficiales que conforman y explican la política institucional para la implementación de las TIC en las clases de inglés de la UAEH.

### Palabras Clave:

Enseñanza del idioma inglés, Tecnologías de la Información y la Comunicación (TIC), recursos pedagógicos, educación universitaria

---

## INTRODUCTION

It is generally believed that ICTs foster the development of the appropriate skills and competences that our society is

---

<sup>a</sup> Corresponding author, Universidad Autónoma del Estado de Hidalgo, <https://orcid.org/0000-0001-9768-4047>, Email: [rosariodelos\\_milagros@yahoo.com.mx](mailto:rosariodelos_milagros@yahoo.com.mx)

demanding from the new generation of professionals. (Gyoomi & Jiyong, 2020; Al-Kamel, 2018; Büyükahıska, 2016; Shin, 2015; Mørk Røkenes, 2015). With respect to teaching and learning processes, it is expected that technology will promote methodological changes such as the move from a teacher centered to student centered approach, and this transformation will result in increased learning gains for both teachers and students. UNESCO (2002, 2004, 2013).

In Latin America, studies concerning the impact of technology in educational processes started in the 90s, following a global initiative demanding the formulation of policies for the introduction of technologies in Latin American schools. According to Cuevas and García (2014), these studies include the work of ECLAC/UNESCO 1991; the World Summit Information Society (WSIS) (UNESCO, 1995); the World Conference on Education (Dakar 2000) and the Report by the Intergovernmental Regional Committee for the Major Project in the Field of Education in Latin America and the Caribbean (2001).

Regarding language teaching, English, as the most common universally spoken language, plays a significant role in several areas of knowledge, (Mahu, 2012). In the words of Abdulhafidh (2015), English is a window to progress and development in all spheres of life. The author adds that English is also the most commonly used language for cultural and educational exchange worldwide. As a consequence, English learning in present-day society involves the development of communicative skills, strategies and competencies that contribute to a holistic education, where the use of technology is fundamental in foreign language learning and teaching providing many benefits for the students, more learning and better results. (Rajathurai, 2018).

In the current global educational context, with the increasing challenges inherent in promoting knowledge, ICTs provide essential resources for educational purposes which can improve the quality of educational processes. They offer teachers the possibility of enhancing their teaching practices, creating more dynamic, interactive, and meaningful learning environments, stimulating processes, facilitating teamwork and interpersonal relationships. In the words of Oliveira, et al. (2015):

“Emerging theories of knowledge construction do not focus exclusively on formal education but account for a new ecology of learning experiences based on the ubiquity of the learning experiences enable by ICT” (p. 17).

Tobón (2010) and Tobón, García Fraile, and Pimienta (2010) advocate the view that it has become increasingly important to educate professionals who have not only knowledge, but also the skills needed to apply knowledge effectively in their workplaces and in other areas of their lives, through the development of appropriate competencies. In this sense, the pedagogical use of ICTs can reinforce, support and complement pre-existing approaches, or pedagogical

methodologies that can help to transform school environments to facilitate meaningful learning and develop skills and competencies, which can later be exploited in professional activities.

In the field of language teaching, technology has provided tools for the restructuring of English teaching methodology in the past few decades. Nowadays, language learners can use ICTs to get greater access to global information; it can also give them more opportunities for communication among peer learners. They can even learn English, or indeed any other language, through the internet. The integration of ICTs in teaching can facilitate the implementation of a variety of approaches and pedagogical philosophies. (Mullamaa, 2010; Ammanni & Aparanjani, 2016; Hjalmarsson, 2015).

In a report published by the Broadband Commission Working Group on Education chaired by Mrs. Irina Bokova, Director-General of UNESCO (2013), it is stated that:

In the twenty-first century, education cannot be separated from technology. Rapid advances in information and communication technology (ICT) and expanding connectivity to the internet have made today's world increasingly complex, interconnected and knowledge-driven. Access to quality education for all – which includes access to ICT – is an imperative for building inclusive and participatory knowledge societies. (p.6)

As a result of this situation, universities around the world have placed special emphasis on providing equipment and teacher training courses focusing on how to use the new technologies in their courses. However, even if they complete such courses, not all teachers actually go on to apply what they know when teaching.

According to Pownell & Bailey (2001), innovative technologies have undergone several stages of development, since they were first incorporated into educational practices. This evolution is currently in its fifth developmental stage and has moved progressively from the use of CD-ROM towards increasingly sophisticated Web 4.0 resources (See also Georgiev, Georgieva & Smrikarov, 2004).

The pedagogical use of ICTs in the foreign language classroom has become a great challenge for language teachers, because it is they who are largely responsible for implementing and supporting the learning intervention as well as for making it successful, useful and meeting established goals. (Babaloa, 2019; Bahar, 2016) From these perspectives, this research aimed to explore and analyze the teaching practice of foreign language teachers in a specific Mexican higher education institution, in order to appraise the extent of current exploitation of ICTs and assess needs for further training and professional support in this context.

## Background to the research

The current study has drawn on the findings of earlier research, which aimed to identify and explore the possible effects and benefits of different ways of implementing ICTs in the EFL classroom in higher education in Latin American contexts. This review is not intended to be, and can by no means be considered to be exhaustive and definitive, because advances in technology change constantly, and we are faced with such a rapid growth of types of technology, that it becomes impossible to keep pace with them completely.

One of the latest studies regarding ICTs in language learning is that carried out by Azmi (2017), in Marrakech, with the objective of investigating the effectiveness of ICTs in the English language class and their impact on learning. This research includes an extensive review of the literature produced over approximately the last two decades (1990-2014). However, the review only considers material from North America, Europe and Southeast Asia. Azmi found that students are more likely to have positive attitudes when using computers in the classroom. Nevertheless, the author warns that:

“The use of ICTs without careful planning and well-defined objectives will probably be a waste of time and effort. The uses of ICTs in English language teaching and multisensory experiences have their limitations as well. The cultural component of the teaching material can be challenging and confusing.” (p.17)

A study carried out in a Latin American country is that of Campuzano & Marriott (2017) who conducted an investigation in Ecuador using a pragmatic paradigm. Their study focused on the combining of technology with collaborative learning in the Ecuadorian EFL classroom, after first having reviewed previous research on the implementation of technology in foreign language teaching. They found that most of the studies have so far been conducted in countries with highly developed technologies (Japan, Australia, USA). The authors concluded that there is not an ideal model or activity that fully meets the needs of Ecuadorian classrooms and added that more information is needed to determine which models or combination of models can be successfully introduced in this context.

Continuing with research carried out in Latin America, Arteaga López (2011) conducted a study on identifying if the use of ICTs is encouraged by the teacher or the students themselves in their English learning process. The setting was the Universidad Autónoma de Aguascalientes. The fieldwork was carried out with 943 undergraduate students enrolled in extensive English courses. Data was collected through an online questionnaire. The statistics obtained from the questionnaire supported the idea that in most cases students use ICTs on their own initiative

(85%), the second option, directed by the teacher, obtained 38.7 %, and peer influence scored 28.4%. The outcome also indicates that reading and listening activities are those that are most practiced with the available technologies. The author concluded that language teachers need to effectively and efficiently manage the use of technologies, which is not an easy task due to the large number of tools available in language teaching.

In the Mexican context, there have been several studies that address technology in EFL/ESL. For example, Mugford (2010) conducted a study on technology and teacher training at the University of Guadalajara. Two questionnaires were used with two groups of teachers, (MA in TEFL and in-service course university language teachers). The results showed that on-line courses give students a sense of progress and may be a powerful motivator for students and teachers.

Two studies were carried out at the Benemérita Universidad Autónoma de Puebla (BUAP), one by Guzmán (2010) on virtual portfolios in mixed learning, evaluation and collaboration, and the other by Barrera (2010), on the use of the linguistic corpus to teach cognates. In both cases, the researchers conclude that technology has a positive impact on learning, especially with materials, tasks, interaction and collaboration with the tutor. These investigations shed some light on the kinds of studies on the uses of ICTs in language teaching in the past 10 years, but as schools move progressively towards adopting new technologies in their teaching methodologies, there is an on-going need for continuing research to help academic institutions draw conclusions based on reliable data.

## STATEMENT OF THE PROBLEM

The teaching of English using technology is not a new concept or practice for teachers around the world. (Rank, Warren & Millum, 2011). Nevertheless, there is still much more that can be done with ICTs to provide learners with more useful and effective opportunities especially with the rapid advance in technological development that we are experiencing in this modern era.

Rajathurai (2018), claims that ICTs represent a central element in learning a language. According to the same author, it is also expected that technology will promote changes in the teaching and learning processes such as the move from a teacher-centered to a student-centered approach.

Despite these high expectations regarding the use of technology in language learning, there are also a number of disadvantages to consider. Disparities in access to technology and learning opportunities still persist in different countries around the

world. (UNESCO 2013). Venezky (2004) says that “The history of technology in the classroom is one of cycles of exaggerated promises, highly publicized installations with committed teachers, and masterful and inventive excuses for why the promises went unfulfilled.” Kolbakova (2014) states that ICTs could demand additional work from teachers, and more learner training. Some technology may not be appropriate for all learners in all situations and purposes. See also Santosh et al. (2018).

In spite of the great technological advances in the teaching of English language, there is still a significant deficit in language proficiency among Latin American language learners. Basurto Santos & Gregory Weathers (2016). In 2018, Mexican’s level of command of English language was ranked 57 out of 88 countries, as reported in the First-English Proficiency Index (EF EPI), thus placing Mexico in the low domain level (49.76%) next to Chile, Brazil and Peru and well below Costa Rica and Argentina. Argentina is the only Latin American country ranked in the high proficiency band, with a score of 58.40. Cronquist and Fiszbein (2017), in the English Language Learning in Latin America report, state the improvement of English language learning policies and programs is necessary to increase English language proficiency and the quality implementation of such policies and programs are essential to overcome the barriers faced in Latin American countries. Cronquist and Fiszbein (2017) remark that lack of data represents a major concern and investments oriented towards strengthening information systems are a critical part of any effort directed to improving English language learning. Although there may be other reasons for low learning achievement of English language in Latin America schools that need a deep investigation, what is certain and evident is what the authors add, countries can learn from the experiences of others by fostering collaboration and knowledge sharing. Similarly, the use of ICTs for teaching and learning English in Latin America is an area not yet fully explored, there is still a lack of precise information on how these resources are being implemented, what successful pedagogical strategies are used in educational practices and what institutional strategies have been implemented for teacher training in the use of technology in Latin American universities. This study will contribute to the understanding of the current situation in a Mexican higher education context.

## **OVERALL OBJECTIVE**

The overall objective of this study is to provide an overview of the current and potential use of ICTs in the teaching of English as a foreign language in a Latin American university, specifically at the Universidad Autónoma del Estado de Hidalgo in order to make recommendations for further in-service training of language teachers in higher education. Specific objectives

- Identify and analyze to what extent current English language teaching practices involve the use of ICTs in the UAEH university.
- Explore the frequency of use of ICTs tools in the English language classroom.
- Examine teachers’ perceptions and expectations of ICTs use in the English language learning.

## Literature review

### Defining key terms

ICT or ICTs is an acronym for Information and Communication Technologies and in its broader sense embraces a range of devices or tools that have a great variety of uses, such as, to create, modify, store and retrieve information, contributing to the generation of knowledge. (Cobos, 2009). ICTs imply technology which consists of electronic devices and associated human interactive materials that enable the user to employ them for a wide range of teaching-learning processes in addition to personal use (Vijayalakshmi, 2014; Ratheeswari, 2018). In terms of the pedagogical use of ICTs in education, they are believed to strengthen, rebuild, and innovate the different environments and pedagogical moments in the classroom. (Cuevas & García, 2014). Consequently, they have experienced significant growth, so much so, that they are already considered by some to be a necessary resource in the language classroom. (Kassem, 2018).

For the NMC Horizon Project (2016) educational technology is defined as those tools and resources that are used to improve teaching, learning and creative investigation. Although, many of the technologies are not developed for the purpose of education, they have clear applications in the educational field. There are currently seven categories of technologies that the NMC continuously monitor. One of these categories is “learning technologies” and it includes resources specifically developed for the education sector, such as digital badges, mobile learning, and online learning. These also include technologies such as audio-visual tools, projectors, smart boards, and Internet.

## **EDUCATION AND TECHNOLOGY**

According to Raja & Nagasubramani (2018), the effects of technology on education can now be perceived in each field of knowledge and in all the levels of education. As Raja & Nagasubramani (2018) say, technology has certainly changed the way we live and has revolutionized the field of education. The authors say:

“The role of technology in the field of education is fourfold: it is included as part of the curriculum, as an instructional delivery system, as a means of aiding instructions and also as a tool to enhance the entire learning process.” (p. 34)

Naikoo, et al. (2018) state that science and technology have brought about a revolution in the education system and opened

the new era of education, where you can learn each and every thing by using modern techniques. In modern times, the education system is blind without the use of internet, because the internet helps us to make education more purposeful and more interesting. (Baytak, A, Tarman, B, & Ayas, C. 2011, as cited in Naikoo, et al. 2018). Modern science and technology are the backbone of education systems and, also, governments should facilitate each and every institute with such modern techniques, to make the education system more rational and verifiable. (Christen, 2009, as cited in Naikoo, et al. 2018)

For Zygmunt Bauman (2012), a sociologist who developed the theory of Liquid Modernity, one of the key concepts in Postmodernist philosophy, is that we are challenged with an unprecedented task, and that task is to develop an art of living with permanent uncertainty. Bauman (2000) proposed the concept of Liquid Modernity to characterize a rapidly changing order that undermines all notions of durability. Education, "is a victim of liquid modernity... thinking is being influenced by technology" said Bauman in the 360 International Education meeting, held in Rio de Janeiro, Brazil in 2015.

For Bauman, there is no way of conceiving the future society without technology. Consequently, the author understands education as a process and he believes in lifelong learning. The author adds that, given the growing expansion of knowledge and its early expiration, it can be inferred that, beyond an educational system that evaluates and legitimizes capabilities, what is most urgently required is a model that arouses an appetite for learning.

Bauman (2005, 2009) explains that ICTs have caused, or at least, accelerated a revolution of wide scope in our civilization and this revolution revolves around the mechanisms of production, storage, dissemination and access to information and extends to the exchange of communication flows between people and to the expressive and representative forms of culture and knowledge. Bauman identifies three challenges that current education must face:

1. The challenge to deal with the large amount of information available
2. The challenge of simultaneously adapting to the constant shifting nation of things
3. The harmonization of the relationship between teacher and student

Nagasubramani (2018) states that modern technologies are also demanding that teachers learn how to use these technologies in their teaching. Hence, these new technologies increase the teacher's training needs. Gressard and Loyd (1985) in Nagasubramani (2018), point out that teacher's attitudes toward technology are another key factor in the successful implementation of ICTs in education.

In the same order of ideas, Bauman explains that the teacher's role in Liquid Modernity has changed from being a mere

transmitter of learning content to that of becoming a facilitator of the learning carried out by the students themselves. The process is given more importance, and students take responsibility for their own learning. Work is sought in heterogeneous groups to increase the wealth of the proposals and exchanges of the students themselves. Little (2009) in Llaven-Nucamendi, (2014), identifies teachers' roles in preparing students for autonomous learning. For him, teachers (rather than learners or institutions) bear most of the responsibility for 'creating and maintaining an interactive learning environment.'

On the other hand, Zou (2011), as cited in Llaven-Nucamendi, (2014), suggests that the provision of computer support for language learning does not automatically lead to learner autonomy, but may provide affordances for different ways of becoming autonomous. These could include opportunities for learners to direct their own learning and to collaborate and communicate with others, as well as promoting engagement with the learning material. Following Biggs (2006), this implies a greater source of motivation for learners, which causes an improvement in the quality of learning. To be able to adapt to Liquid Modernity, they must overcome the individual model and get support in cooperative learning communities.

As for methodology in modern education, it has moved from passive models to more active models. According to Deborah Nolan (2010), cited in Kudryashova (2015), today, the main aim in learning in contrast to teaching is to shift the focus from the teacher and the delivery of course content to the students and their active engagement with the course material. Theoretical exposition, where students do not have many options to contribute and give their opinions, is no longer believed to be the only way of teaching. Kudryashova (2015). A more open (active) model that generates multiple responses and requires reflections, applications and elaboration of material in collaborative groups is being increasingly promoted.

According to Nomass (2013), cited in Charpentier (2014), comparing the teaching methods using ICTs with the traditional English teaching methodologies, the latter are characterized by a number of important disadvantages. First, traditional methods focus more on theory rather than on practice. They rely more on the mere transmission of knowledge, and the application of grammar rules in decontextualized statements. Now, times are changing for higher education. The role of the contemporary university is that of encouraging its academic community to produce knowledge; ICTs favor not only the acquisition of contents, but also the production and transmission of that knowledge beyond borders and time.

English language learning and ICTs

Nowadays, higher education students in most contexts are facing the requirement to learn and use a foreign language, mainly English, in all their areas of knowledge, as English has become a tool for intercultural communication. (Arteaga, 2011; Abdulhafidh, 2015).

The idea of the integration of technology in the teaching of foreign languages is not new; this practice has been around for more than sixty-five years. It started with Skinner's (1954) teaching machines. However, the origins of computer-based education date as far back as the 1920s, when Sidney L. Pressey, of the University of Ohio, developed his teaching machine. Pownell & Bailey (2001) point out that educational technology is currently in its fourth period of development. Nevertheless, the rapid technological advances require that teachers be constantly updated with new developments in educational technology. Some technologies quickly become outdated and are never used again, while the latest may take time to be properly implemented in the language classroom (Shadieff & Yang, 2020). The use of ICTs can give teachers the opportunity to improve education and meet the requirements set by the present knowledge society, but there are both advantages and disadvantages in the use of ICTs which teaching communities should take into consideration when designing and implementing language programs.

#### **ADVANTAGES AND DISADVANTAGES**

We can get the required information within a fraction of second. Students develop a short span of attention because of the ICT in language learning. Learners become more innovative with the help of e-learning. Online learning cannot offer human interaction. ICT provides the information to the students which will be useful for them to compete with this competitive world. Students may open or log on to the unnecessary websites to play games or to watch movies etc. English lessons that incorporate multimedia applications can exert powerful motivation and provide bored students with exciting new ways to learn. Intense requirement for self-discipline and self-direction.

ICT can make students and teachers to work with current and authentic sources. Good infrastructure and trained man power is required to use the ICT tools in teaching and learning. ICT ameliorates the learner's interaction, verbalization involvement in group collaborative learning. Communication is taking place between learners. Students can learn independently. The teacher is only a mediator.

With ICT pictorial description is available.

Table 1: Advantages and disadvantages of ICTs in English language teaching (Ammanni & Aparanjani, 2016)

Prensky (2001) also underlines the implications for those teachers who "...speak an outdated language (that of the pre-

digital age)" and who are "...struggling to teach a population that speaks an entirely new language" (p.2). The author emphasizes how important it is that teachers recognize that new generations of students learn differently from how they learned the language themselves.

The information gathered from the literature review presented above is of great importance for this research, since the results from the different studies, validate the relevant assumptions that are considered for this investigation, and that has to do with the use of ICTs by language teachers as an educational tool for more effective English language learning. The outcomes of numerous studies show that ICTs can be used as mediators to facilitate and strengthen students learning, they can foster the development of teamwork, as well as favouring learning autonomy. One of the implications that can also be identified, based on the review of the research papers, is that teachers' technical preparation regarding the use of ICTs is a key factor of success or failure for this type of teaching experiences.

#### **Methodology**

To achieve the objectives of this investigation, a mixed method design with collection and analysis of both quantitative and qualitative data was selected. Hernández, Fernández and Baptista (2003) in Pereira, (2011) point out that mixed methods research design can draw on the advantages of each of the approaches. It can allow the inclusion of narrations by the participants, that in one way or another, can help to make sense of the numerical data and thus enhance their reliability. Mixed method research design also enables triangulation of findings from each different data set. Therefore, two instruments were used to complete the current study, namely, an online questionnaire followed by individual interviews with selected participants to support the quantitative study. Greene, Caracelli, & Graham (1989, pp. 256-258).

The participants were 50 volunteer language teachers from the UAEH university, ranging in age from younger than 30 and over 51. At the beginning of the questionnaire, all the participants were fully informed that their identities would be kept anonymous. Teachers answered the electronic survey using the Google Drive application. Participants were asked to respond to the 20 items by indicating their level of agreement, using a five-point Likert scale. The Likert scale was selected, because this scale allows straightforward analysis of the data. The questions were divided into three categories; the first was "ICTs teachers' qualifications", to identify if teachers have received sufficient training to develop the skills needed to integrate ICTs with pedagogical foundations in the teaching-learning process. The second category was "Teachers' assumptions about technology", to give teachers the opportunity to state their positions on the incorporation of ICTs in the educational process, and the third category was

“Teachers’ pedagogical uses of ICTs”, with the purpose of determining how teachers make use of ICTs to generate educational content in their teaching situation.

Once the quantitative data had been collected and analyzed, we proceeded with the qualitative study. A semi-structured interview with an exploratory approach was used. Three teachers were selected, using a convenience sampling. Patton (2002). Although several teachers were invited to participate in the interviews, only three were available at the time of the investigation. The interviews were recorded and lasted for about 30 minutes each.

### **GENERAL INFORMATION REGARDING PARTICIPANTS DERIVED FROM THE ONLINE SURVEY**

The age of the teachers and their distribution yield important information that, together with other attributes such as qualifications and teaching experience, can be useful for the authorities of the educational institution to plan specific actions for teacher development. In this study, all the age groups included in the questionnaire (30 or less, 31-40, 41-50, over 51) were represented, even though almost half of the teachers are in their 30s and 40s (42%). Teachers younger than 30 represent 28%, and 14% of teachers are between 41 to 50. A total of 16% of these teachers are over 51 years old. These results show, then, that the university's teaching staff is made up of a large number of young-adult teachers, so it could be expected that they would be familiar with the use of technology in their English classes.

More than half of the teachers are women (62%) and 38% are men, which reflects the current situation in many schools and universities in Mexico, where the percentage of female teachers is higher than that of male teachers. According to Araya (2004), men dominate in the areas of engineering, computer science and security, while women predominate in the areas of education and the social sciences.

It is also relevant to know the number of novice and experienced teachers, in order to estimate how many of these groups of teachers may require differentiated actions in terms of continuous training. With regard to years of teaching experience, the largest group, comprising 38% of all respondents, reported their having already acquired 6 to 10 years of experience, while 22% of these teachers have taught for less than 5 years. Only 8% of the respondents have acquired 26 or more years of teaching experience. These results show that 38% of the participants have gained several years of teaching experience, and there is also a percentage (22%) of them that can be considered as novice teachers since they have only been teaching for 5 years or less. (Kim & Roth, 2011, as cited in Septiani, Emiliasari, & Rofi'i, 2019). What the data seems to imply is that these novice teachers and those who have been teaching for ten years or less, may well demonstrate interest in the use of ICTs in their teaching learning process to

support their teaching practice. (Septiani, Emiliasari, & Rofi'i, 2019).

### **Data Analysis**

#### **Results of teachers’ questionnaire**

The presentation of data in this study is organized around the research questions previously posed.

#### **1. ¿How qualified are language teachers to implement technology in their workplace?**

In terms of university qualifications, most teachers have undergraduate degrees (80%), 42% have an MA and 2% of the teachers have a PhD. Results showed that all the respondents have at least the minimum required academic qualifications to work as a language teacher at the UAEH. As an area of opportunity, university authorities should take into consideration the possibility of offering postgraduate studies for these teachers.

Figure 1: Teachers’ qualifications

Most of the participant teachers (78%) have taken courses in ICTs and only 22% of them have not taking any such course to date. An important fact concerns the type of courses that these teachers have taken; it can be observed in the results that most of them have taken courses related to pedagogical knowledge in the use of ICTs (76.9%). However, there are still many teachers who have only taken basic ICT courses (64.1%), and the lowest percentage of all (17.9%) said they have taken advanced courses. On the other hand, 34% of the respondents perceived that their knowledge of technologies is acceptable, while 42% declared that it is good and only 20% said it was excellent. It was therefore concluded that teachers, in general, would seem to be immersed in continued on-going professional development in terms of ICTs courses.

Figure 2: Teachers’ technological competences

As can be seen in Figure 3, below, teachers’ perceptions with regard to the impact of ICTs on students’ learning of English are generally positive (66%). But the evidence also showed that more than one third of the questionnaire respondents (34%) believed that ICTs do not really help with some aspects of education, such as supporting learning or helping students focus on their learning. While on the one hand, teachers see ICTs as potentially beneficial for students, on the other hand, some teachers do not think that ICTs solve all educational issues on their own. These findings revealed that, according to the perceptions of this group of teachers, effective teaching depends not only on the use of ICTs but also upon blending the relevant pedagogical approach with content knowledge (Shulman, 1986; 1987, in Kassem, 2018). These results also

agree, by implication, with those of Kolbakova (2014), who states that teaching with ICTs takes more time and demands additional work from teachers.

Figure 3: Relevance of ICTs

Based on these results, it can be concluded that teachers do have some knowledge of how to use ICTs, ranging from basic to advanced level. However, it would clearly be advisable to promote their participation in updated courses, since, as mentioned above, the development of technologies is constantly changing. As Bauman (2009) stated, education should be seen as a lifelong process of learning. Teachers also display positive interest regarding the use of ICTs in their classrooms as a strategy that facilitates their teaching. This interest is of great importance with respect to the pedagogical policy of the university in relation to the required use of ICTs in the strengthening of English language learning outcomes.

Figure 4: ICTs to improve teaching practice

2. What type(s) of technologies are most prominently used by language teachers?

Figure 5: ICTs tools most prominently used in the language classroom

Regarding the question on the use of technology in the language classroom, the items referred to the possible different technological tools teachers might currently be using in lessons. The results show that YouTube videos are the most prominently used. Wikis are the second most frequently used tool. C-map tool, forums, and Power Point presentations are also used frequently by teachers. Movie maker, video conferences, podcasts, games, e-books, Facebook and blogs appear to be being used occasionally, while WhatsApp is the least used tool of all those listed. This is interesting and worthy of comment, because although it is reported as the tool least used in the classroom, WhatsApp, is often used as a communication platform for many student groups, and for groups of teachers and their students as well. (Gon, S., Rawekar, A., 2017). The fact is that, despite its widespread popularity, the use of WhatsApp is often limited because a Wi-Fi connection is needed, otherwise, teachers and students have to use mobile data, and in some cases the data speed is low leading to delay downloading as well as uploading of the learning material. (Gon, S., Rawekar, A., 2017). Additionally, teachers' motivations to use technology tend to be mostly based on convenience. That is to say, teachers expect that using technology will relieve them from physical fatigue and help reduce time and effort invested in class preparation and management. (Baek, Jung, & Kim, 2008),

Figure 6: Other ICT tools used by teachers

3. To what extent are English language skills being developed with the technology available within the university?

The pie chart shows that the listening skill is the one that most benefits from the use of ICTs in the English classroom but this does not signify that the other skills are not being developed at the same time. In fact, the chart shows that the development of the four skills seems to be quite balanced, which is quite logical because the skills cannot be practice in complete isolation, though it may be that individual teachers may emphasize one more than other but there is always more than one skill being used when learners are participating in any given tasks.

Figure 7: TICs and the development of skills

It is also important to reveal some of the obstacles that prevent the use of, and put into question the appropriateness of the use of ICTs at the different levels of education in which the teachers in this investigation are working. First, inadequate provision of infrastructure for the incorporation of ICTs and insufficient training in the exploitation of digital tools, as well as both conceptual and technological support are shown to be the biggest obstacles to their regular use. Although there are many difficulties regarding connectivity, teachers constantly find ways to access the internet, but, as they said later, during the interviews, in some contexts it is simply not possible because the service is not provided.

Figure 8: Problems in the implementation of ICTs

### Results from teachers' interviews

Qualitative data was collected from a face-to-face interview with three of the respondents of the questionnaire, with the purpose of exploring further how they had been integrating ICTs in their classrooms. Although several teachers were invited to participate in the interviews, only three were available at the time of the research was carried out. However, the informants participating in the interviews displayed certain characteristics that make them relevant for this part of the study. The main characteristics of the participant teachers are shown in the following table:

Participants	Age	Teaching	experience	
	Educational level of teaching	ICTs courses taken	Qualifications	
1	51+	23	University	ELT Ba. None
2	Early 40s	15	University	ELT Ba. 5
			courses and a certification	Diploma in ICTs
3	Early 40s	13	University	ICTs Magister
		5 courses		

Table 2: Main characteristics of participant teachers in the semi-structured interview



The three teachers each shared valuable opinions and information about the current situation in the use of technology, such as the activities they use with ITCs, and their suggestions to improve it, all of these are discussed below.

Table 3: Summary of the semi-structured interviews.

All three teachers said that they tried to use technology in their classrooms as much as possible, and that they do use videos, Power Point Presentations, e-dictionaries, and even recreational activities for learning English, especially certain Internet platforms and some applications. They also use interesting and relevant materials related to the topic of their classes, such as e-tools. In addition to the teachers' own opinions, they said their students also liked the use of technology, and that they enjoyed it.

One of the teachers mentioned that he was unable to get enough opportunities to use Internet in their English class, mainly because of the lack of connectivity in the building. However, whenever he was able to use it, he felt that students seemed to be more interested in the class proceedings than when they were working with conventional materials. When the teachers were asked about the kinds of technology which can be used effectively in classrooms, all three teachers answered that there could be many types of interesting materials which would be more effective. They mentioned that visual aids, for example, are very helpful in improving students' listening skills, and they also used them because they made their lessons interesting and easier to be understood. One of the participants, who has little knowledge concerning ICTs, recognized that, even without being an expert in such technologies, she/he is aware that, without a good planning and clear objectives, the use of technology could be a total failure.

These teacher participants think that existing infrastructure for the exploitation of technology should be improved in their English classrooms. Their opinions were that multimedia, the Internet and projectors should be easily accessible and quickly available for English language classes. They also mentioned that language teachers in their contexts need more training to develop their knowledge and understanding of the applications of ICTs and get more ideas about using them in their English lessons. They added that they need more materials and resources, to make this a fruitful support for learning and teaching a language.

### **ANALYSIS OF OFFICIAL DOCUMENTS**

The third part of this investigation includes the analysis of those official documents that establish the guidelines for the teaching of English and the use of technologies in Mexican higher education. The international reference framework derived from the declarations and recommendations of international organizations, such as UNESCO, and the Organization for Economic Co-operation and Development

(OECD). At the national level, there is the ANUIES (Asociación Nacional de Universidades e Instituciones de Educación Superior), and the Public Education Secretariat (SEP) that promote certifying the knowledge of foreign languages according to certain standards, such as the Common European Framework of References (CEFR) scales, or the National Board of Languages Certification. (CENNI, from the initials of the organization in Spanish.)

Based on these education policies, each university in Mexico designs its own language study programs and follows a methodology adapted to their particular needs. The criteria and skills requirements of the English language for entering and graduating from any of their academic programs, are based on official documents. (Ramirez, Perez & Lara, 2017). In the case of the UAEH, there is the Institutional Language Programme (PIL), that follows the policies and educational strategies established in the Institutional Development Plan (PDI), and the University Educational Model. The PIL is the official document that sets out the parameters for the teaching and learning of all the modern languages taught in this institution. The established guidelines in the PIL (2013) focuses on promoting communication skills in languages. English is taught as a foreign language from A1 to B2 levels, according to the CEFR scales (p.20), and the language department (CEL) has edited his own course books (Make it Real!) for the English language teaching in high school and bachelor programmes. There is also a virtual platform for the practice of the foreign language (p.61). English is mandatory, and today, all students must obtain a TOEFL test score in order to graduate (76).

The PIL also includes guidelines for language courses in high school and bachelor programmes in the virtual modality (p.37). The use of technology is a requirement in the face-to face language courses. This is stated in one of the disciplinary competences for the use of technology which specifies that students should use ICTs as support tools in the development of basic content (p.50). As for the teachers, it is stated in the profile of the language teachers that they must be skilful in the use of educational technology (p.38).

The learning of English in higher education has become a tool in the internationalization process for public and private universities (Despaigne, 2019). The strength of the language policy showed that the university follows the guidelines of internationalization by promoting a high level of English competency, thereby favouring mobility. Regarding the use of technology in the language classroom, the policy emphasizes the implementation of ICTs for teaching English and to achieve this objective a series of strong points was identified.

The university authorities provide teachers with the appropriate training courses and national certifications in the use of technology through a department which is specialised in this field. The language department strongly supports the promotion

of continuous and coherent professional development for language teachers through the organization of seminars, lectures and workshops with national and international well-known speakers. The university also provides the necessary infrastructure, such as connectivity, bandwidth, hardware, and educational facilities that allow teachers and students to make use of this options. One of the areas of opportunity identified, and capitalizing on teachers' strengths and positive dispositions, the institution should increase the support needed for the more extensive and effective use of technology for the teaching of English, on a continuous basis over time and it should also update and increase the resources already available.

#### Conclusion

From the results of this study, it can be concluded that most of the participant teachers' opinions are, in principle, in favor of the use of technologies, because they believe they can help them in the process of teaching and learning. Teachers' answers confirmed that activities related to technology seem to be more interesting for their students. Nevertheless, there is still a need to improve on-going professional training and development opportunities in ICTs for teachers and to promote more formal and consistent reflection on the role that technology can play as a supporting tool in the foreign language classroom in the research context. Teachers are able to evaluate their own use of ICTs with a view to improving their teaching strategies, and are aware of the opportunities that technology can provide to help develop students' language knowledge and skills. Teachers at the University of Hidalgo already use some ICTs to support language learning effectively. A final conclusion is that the majority of teachers are positive about incorporating ICTs in the language classroom, they acknowledge that students are happier and their classes are more fun when they use ICTs.

Further research should be carried out, to provide a more comprehensive picture of the present situation in this, and other contexts. For example, students' and authorities' perspectives could be investigated, compared and contrasted, so that the English teaching community and the English education policy-makers at the university can better understand and address English learning and teaching in our context. Furthermore, similar studies, in other contexts, could serve to develop understanding of current real uses of ICTs at tertiary level, for the benefit of the profession.

## REFERENCES

- [1] Abdulhafidh, E. (2015). The Role of English in Present Day Higher Education. [https://www.researchgate.net/publication/311739707\\_The\\_Role\\_of\\_English\\_in\\_Present\\_Day\\_Higher\\_Education](https://www.researchgate.net/publication/311739707_The_Role_of_English_in_Present_Day_Higher_Education)
- [2] Alcoceba, J., Coral, H. (2017). (Coords.) Jóvenes, oportunidades y talentos. Revista de Estudios de Juventud. No. 117. Universidad Complutense de Madrid. [http://xuventude.xunta.es/images/Observatorio\\_Galego\\_da\\_Xuventude/ano\\_2018/Mozos\\_opportunidades\\_e\\_talento\\_revista\\_117.pdf#page=200](http://xuventude.xunta.es/images/Observatorio_Galego_da_Xuventude/ano_2018/Mozos_opportunidades_e_talento_revista_117.pdf#page=200)
- [3] Al-Kamel, M. (2018). The Use of ICT Tools in English Language Teaching and Learning: A Literature Review. [https://www.researchgate.net/publication/330986788\\_The\\_Use\\_of\\_IC\\_Tools\\_in\\_English\\_Language\\_Teaching\\_and\\_Learning\\_A\\_Literature\\_Review](https://www.researchgate.net/publication/330986788_The_Use_of_IC_Tools_in_English_Language_Teaching_and_Learning_A_Literature_Review)
- [4] Ammanni, S. & Aparanjani, U. (2016). The Role of ICT in English Language Teaching and Learning. International Journal of Scientific & Engineering Research, Volume 7, Issue 7. ISSN 2229-5518 IJSER. <http://www.ijser.org>
- [5] Araya, J. and Gamboa, B. (2012). Technology and new language trends: the role of the ESL teacher. Universidad Nacional, Costa Rica. <https://www.wcupa.edu/knowledgecrossingborders/2012/PDF/6.1.1%20Araya%20and%20Gamboa.pdf>
- [6] Araya, S. (2004). Hacia una educación no sexista. Revista Electrónica. Actualidades Investigativas en Educación. Vol. 4, Número 2. <http://redalyc.uaemex.mx/pdf/447/44740217.pdf>
- [7] Arteaga L. C. (2011). Uso de las TIC para el aprendizaje del inglés en la Universidad Autónoma de Aguascalientes. Apertura, 3(2). ISSN: 1665-6180. <https://www.redalyc.org/articulo.oa?id=688/68822737007>
- [8] Azmi, N. (2017). The Benefits of Using ICT in the EFL Classroom: From Perceived Utility to Potential Challenges. Ecole Nationale de Commerce et de Gestion, Université Cadi Ayyad de Marrakech. <http://www.mcser.org/journal/index.php/jesr/article/view/9732>
- [9] Babalola, J. (2019). The Impact of the Use of ICT in Language Pedagogy. [https://www.researchgate.net/publication/337359231\\_THE\\_IMPACT\\_OF\\_THE\\_USE\\_OF\\_ICT\\_IN\\_LANGUAGE\\_PEDAGOGY](https://www.researchgate.net/publication/337359231_THE_IMPACT_OF_THE_USE_OF_ICT_IN_LANGUAGE_PEDAGOGY)
- [10] Baek, Y., Jung, J., Kim, B. (2008). What makes teachers use technology in the classroom? Exploring the factors affecting facilitation of technology with a Korean sample. Computers & Education. 50. 224-234. 10.1016/j.compedu.2006.05.002. [https://www.researchgate.net/publication/223922765\\_What\\_makes\\_teachers\\_use\\_technology\\_in\\_the\\_classroom\\_Exploring\\_the\\_factors\\_affecting\\_facilitation\\_of\\_technology\\_with\\_a\\_Korean\\_sample](https://www.researchgate.net/publication/223922765_What_makes_teachers_use_technology_in_the_classroom_Exploring_the_factors_affecting_facilitation_of_technology_with_a_Korean_sample)
- [11] Bahar, M. (2016). Using ICT to improve language teaching and learning. [https://www.academia.edu/29220514/USING\\_ICT\\_TO\\_IMPROVE\\_LANGUAGE\\_TEACHING\\_AND\\_LEARNING](https://www.academia.edu/29220514/USING_ICT_TO_IMPROVE_LANGUAGE_TEACHING_AND_LEARNING)
- [12] Barrera Cobos, M. (2010). The use of corpus Linguistics to teach cognates to Spanish-speaking English language learners. Mexesol, Vol. 34 No. 2. ISSN: 2395-9908. [https://mexesol.net/journal/index.php?page=journal&id\\_article=47](https://mexesol.net/journal/index.php?page=journal&id_article=47)
- [13] Basurto Santos, N., Gregory, J. (2016). EFL in Public Schools in Mexico: Dancing Around the Ring?. *How*, 23(1), 68-84. <https://dx.doi.org/10.19183/how.23.1.297>
- [14] Bauman, Z. (2000). *Liquid Modernity*. Cambridge: Polity Press. <https://epdf.pub/liquid-modernity.html>

- [15] Bauman, Z. (2005). *Los retos de la Educación en la Modernidad Líquida*. Barcelona, España: Gedisa. <http://ciec.edu.co/wp-content/uploads/2017/06/Bauman-Zygmunt-Los-Retos-De-La-Educacion-En-La-Modernidad-Liquida-1.pdf>
- [16] Bauman, Z. (2009). Education in the Liquid-Modern setting. *Power and Education* Volume 1 Number 2. <https://journals.sagepub.com/doi/pdf/10.2304/power.2009.1.2.157>
- [17] Bauman, Z. (2012). From the trailer, “The trouble with being human these days.” Retrieved from Bauman Institute at: <http://baumaninstitute.leeds.ac.uk/video/>
- [18] Biggs, J. (2006). *Calidad del aprendizaje universitario*. Narcea, S.A. De ediciones. España. <https://barajasvictor.files.wordpress.com/2014/05/libro-j-biggs.pdf>
- [19] Büyükahiska, D. (2016). The use of ICT in teaching English as a foreign language. [https://www.researchgate.net/publication/322294214\\_The\\_use\\_of ICT\\_in\\_teaching\\_English\\_as\\_a\\_foreign\\_language](https://www.researchgate.net/publication/322294214_The_use_of ICT_in_teaching_English_as_a_foreign_language)
- [20] Gyoomi, K. and Jiyoung, B. (2020). A Study into Students’ use of Digital English Learning Strategies in Tertiary Education. *Teaching English with Technology*, 20(1), 21-42, <http://www.tewtjournal.org>
- [21] Campuzano, J. (2017). Exploring the Role of Technology through Collaborative Learning in Ecuadorian Language Education. In: *INNOVA Research Journal*. 2, (10), 1-11. ISSN 2477-9024 <file:///C:/Users/1077970319/Desktop/429-Texto%20del%20art%C3%ADculo-1454-3-10-20190522.pdf>
- [22] Cobos Torres J. C. (2013). Integración de un chatbot como habilidad de un robot social como gestor de diálogos. Tesis no publicada. Universidad Carlos III de Madrid. Departamento de Ingeniería de Sistemas y Automática. Leganés, Madrid. <http://repositorio.educacionsuperior.gob.ec/bitstream/28000/1201/1/T-SENESCYT-000332.pdf>
- [23] Coll, C. (2004). Psicología de la educación y prácticas educativas mediadas por las tecnologías de la información y la comunicación. Una mirada constructivista. *Sinéctica, Revista Electrónica de Educación*, (25). ISSN: 1665-109X. <https://www.redalyc.org/articulo.oa?id=998/99815899016>
- [24] Costa, C., Hammond, M. & Younie, S. (2019). Theorising technology in education: an introduction. *Technology, Pedagogy and Education*, 28:4, 395-399, DOI: 10.1080/1475939X.2019.1660089
- [25] Cronquist, K. & Fiszbein, A. (2017). El aprendizaje del inglés en América Latina. El diálogo, liderazgo para las Américas. <https://www.thedialogue.org/wp-content/uploads/2017/09/El-aprendizaje-del-ingl%C3%A9s-en-Am%C3%A9rica-Latina-1.pdf>
- [26] Cuevas, F. & García, J. (2014). Las TIC en la formación docente. Trabajo presentado en Congreso Iberoamericano de Ciencia, Tecnología, Innovación y Educación, Buenos Aires, Argentina. ISBN: 978-84-7666-210-6-Artículo 1159. [file:///C:/Users/pc/downloads/1159%20\(2\).pdf](file:///C:/Users/pc/downloads/1159%20(2).pdf)
- [27] Charpentier, J. W. (2014). The use of ICTs in the Ba in English Teaching. Volumen 14, Número Enero- Abril pp. 1-23. *Revista Electrónica “Actualidades Investigativas en Educación”*. Universidad de Costa Rica. <https://www.scielo.sa.cr/pdf/aie/v14n1/a06v14n1.pdf>
- [28] de Oliveira, J. M., Henriksen, D., Castañeda, L., Marimon, M., Barberà, E., Monereo, C., Coll, C., Mahiri, J., & Mishra, P. (2015). The educational landscape of the digital age: Communication practices pushing (us) forward. *RUSC. Universities and Knowledge Society Journal*, 12(2). pp. 14-29. doi <http://dx.doi.org/10.7238/rusc.v12i2.2440>
- [29] Despagne, C. (2019). EFL Teachers’ Perspectives on the Role of English in Two Mexican Private Universities. *Profile Issues in Teachers’ Professional Development*, 21(1), 43-57. <https://dx.doi.org/10.15446/profile.v21n1.69239>
- [30] Georgiev, T., Georgieva, E., & Smrikarov, A. (2004). M-Learning-a New Stage of ELearning. International Conference on Computer Systems and Technologies-CompSysTech 2004.IV.28, 1- 5. [www.researchgate.net/publication/228761975\\_M-learning-a\\_New\\_Stage\\_of\\_Learning/file/eob495151514d5274b.pdf](http://www.researchgate.net/publication/228761975_M-learning-a_New_Stage_of_Learning/file/eob495151514d5274b.pdf)
- [31] Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a Conceptual Framework for Mixed-Method Evaluation Designs. *Educational Evaluation and Policy Analysis*, 11(3), 255–274. <https://doi.org/10.3102/01623737011003255>
- [32] Gon, S., Rawekar, A. (2017). Effectivity of E-Learning through Whatsapp as a Teaching Learning Tool. *MVP Journal of Medical Sciences*. 4. 19. 10.18311/mvpjms/0/v0/i0/8454. [https://www.researchgate.net/publication/317815716\\_Effectivity\\_of\\_E-Learning\\_through\\_Whatsapp\\_as\\_a\\_Teaching\\_Learning\\_Tool](https://www.researchgate.net/publication/317815716_Effectivity_of_E-Learning_through_Whatsapp_as_a_Teaching_Learning_Tool)
- [33] Guzmán Cova, M., Cova, B. (2010). Virtual Portfolios in Blended Learning: Assessment and Collaboration. *Mextesol* Vol. 34 No. 2010. ISSN: 2395-9908 [https://www.mextesol.net/journal/index.php?page=journal&id\\_article=46](https://www.mextesol.net/journal/index.php?page=journal&id_article=46)
- [34] Hjalmarsson, H. (2015). The effects of ICT on affective factors and teaching practices in the EFL and ESL classroom. Swedish: University of Gothenburg. [https://gupea.ub.gu.se/bitstream/2077/38731/1/gupea\\_2077\\_38731\\_1.pdf](https://gupea.ub.gu.se/bitstream/2077/38731/1/gupea_2077_38731_1.pdf)
- [35] Johnson, L., Becker, A., Cummins, M., Estrada, V., Freeman, A., & Hall, C. (2016). *NMC Informe Horizon 2016 Edición Superior de Educación*. Austin, Texas: The New Media Consortium. <http://www.aprendevirtual.org/centro-documentacion-pdf/2016-nmc-horizon-report-HE-ES.pdf>
- [36] Kassem, M. (2018). Balancing Technology with Pedagogy in English Language classroom: Teachers’ Perspective. [https://www.researchgate.net/publication/329248065\\_BALANCING\\_TECHNOLOGY\\_WITH\\_PEDAGOGY\\_IN\\_ENGLISH\\_LANGUAGE\\_CLASSROOM\\_TEACHERS\\_PERSPECTIVE](https://www.researchgate.net/publication/329248065_BALANCING_TECHNOLOGY_WITH_PEDAGOGY_IN_ENGLISH_LANGUAGE_CLASSROOM_TEACHERS_PERSPECTIVE)
- [37] Kolbakova, F. (2014). The Use of ICT among the Teachers of English in Estonia by Comparison with Europe and Asia (Master’s thesis). University of Tartu, Tartu, Estonia. [http://dspace.ut.ee/bitstream/handle/10062/46990/Master's\\_Thesis\\_Kolbakova.pdf](http://dspace.ut.ee/bitstream/handle/10062/46990/Master's_Thesis_Kolbakova.pdf)
- [38] Kudryashova, A., Gorbatova, T., Rybushkina, S., & Ivanova, E. (2015). Teacher’s Roles to Facilitate Active Learning. *Mediterranean Journal of Social Sciences*. 10.5901/mjss.2016.v7n1p460. [https://www.researchgate.net/publication/289365649\\_Teacher's\\_Roles\\_to\\_Facilitate\\_Active\\_Learning](https://www.researchgate.net/publication/289365649_Teacher's_Roles_to_Facilitate_Active_Learning)
- [39] Lubis, M., Yunus, M.Md., Embi, M. A. (2010). ICT and systematic steps in teaching and learning language in the classroom. *Procedia Social and Behavioral Sciences* 9 (2010) 1055–1061. <https://doi.org/10.1016/j.sbspro.2010.12.285>
- [40] LLaven-Nuncamendi, M. (2014). *Autonomy in Language Learning. The Learner, the teacher and the institution*. [http://www.uqroo.mx/libros/ME\\_LLaven\\_Autonomy\\_language\\_learning%20copia.pdf](http://www.uqroo.mx/libros/ME_LLaven_Autonomy_language_learning%20copia.pdf)
- [41] Mahu, P. (2012). Why is learning English so beneficial nowadays? *International Journal of Communication Research*, 2(4), 374-376. [https://www.ijcr.eu/articole/108\\_102\\_pdfsam\\_IJCR%204-2012%20tipo.pdf](https://www.ijcr.eu/articole/108_102_pdfsam_IJCR%204-2012%20tipo.pdf)
- [42] Mørk Røkenes, F. (2016). digital storytelling in teacher education: A meaningful way of integrating ICT in ESL teaching. <https://doi.org/10.5617/adno.2431>
- [43] Mugford, G. (2010). *Technology and Teacher Training: Assessing Incidental Learning on In-service Courses*. Vol. 34 No. 2, 2010. ISSN: 2395-9908

- [44] Mullamaa, K. (2010). ICT in Language Learning - Benefits and Methodological Implications  
<https://files.eric.ed.gov/fulltext/EJ1066076.pdf>
- [45] Naikoo, A., & Shashank, T., Tariq, G. & Aadil., A. (2018). Development of Society under the Modern Technology - A Review. scholedge international journal of business policy and governance. 5. 1-8. 10.19085/journal.sijbpg050101.  
[https://www.researchgate.net/publication/324654099\\_Development\\_of\\_Society\\_under\\_the\\_Modern\\_Technology\\_-\\_A\\_Review](https://www.researchgate.net/publication/324654099_Development_of_Society_under_the_Modern_Technology_-_A_Review)
- [46] Nomass, B. (2013). The Impact of Using Technology in Teaching English as a Second Language. Journals English Language and Literature Studies. Vol. 3, No. 1.  
<http://www.ccsenet.org/journal/index.php/ells/article/view/25002>
- [47] Patton, M. (2002) Qualitative research & evaluation methods. (3rd ed.) thousand Oaks, CA: Sage.
- [48] Pereira Pérez, S. (2011). Mixed Method Design in Education Research: A Particular Experience. XV, No. 1. Heredia, costa Rica: Revista Electrónica Educare.  
<http://dialnet.unirioja.es/descarga/articulo/3683544.pdf>
- [49] Pownell, D. & Bailey, G. (2001). Getting a Handle on Handhelds: What To Consider Before You Introduce Handheld Computers in Your Schools. *American School Board Journal*, v188 n6 p18-21,48. ISSN-0003-0953. <https://eric.ed.gov/?id=EJ629323>
- [50] Prensky, M. (2001). Digital Natives, Digital Immigrants. From On the Horizon (MCB University Press, Vol. 9 No. 5, October 2001)  
<https://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf>
- [51] Raja, R. & Nagasubramani, P. (2018). Impact of modern technology in education. *Journal of Applied and Advanced Research*. 3. 33. 10.21839/jaar.2018.v3iS1.165.
- [52] Rajathurai, N. (2018). Important of learning English in today world. *International Journal of Trend in Scientific Research and Development*. Volume-3. 10.31142/ijtsrd19061.  
[https://www.researchgate.net/publication/329505353\\_Important\\_of\\_learning\\_English\\_in\\_today\\_world](https://www.researchgate.net/publication/329505353_Important_of_learning_English_in_today_world)
- [53] Rank, T., Warren, C., & Millum, T. (2011). Teaching English Using ICT: A practical guide for secondary school teachers.  
<http://jflnet.com/jflnet/>
- [54] Ramírez Gómez, L. A., Pérez Maya, C. J., Lara Villanueva, R. S. (2017). Panorama del Sistema Educativo Mexicano en la Enseñanza del Idioma Inglés como Segunda Lengua. *revistadecooperacion.com* | ISSN 2308-1953 número 12 - Junio 2017  
<https://revistadecooperacion.com/numero12/012-02.pdf>
- [55] Ratheeswari, K. (2018). Information Communication Technology in Education. *Journal of Applied and Advanced Research*. 3. 45. 10.21839/jaar.2018.v3iS1.169.  
[https://www.researchgate.net/publication/325087961\\_Information\\_Communication\\_Technology\\_in\\_Education](https://www.researchgate.net/publication/325087961_Information_Communication_Technology_in_Education)
- [56] Scott, J. G. (2016). Connectivism: A knowledge learning theory for the digital age?, *Medical Teacher*, 38:10, 1064-1069, DOI: 10.3109/0142159X.2016.1173661
- [57] Septiani, A. & Emiliyasi, R. & Rofi'i, A. (2019). The Novice English Teachers' Experience: Practices and Challenges. *Academic Journal Perspective: Education, Language, and Literature*. 7. 109. 10.33603/perspective.v7i2.2708.  
[https://www.researchgate.net/publication/337697091\\_The\\_Novice\\_English\\_Teachers'\\_Experience\\_Practices\\_and\\_Challenges](https://www.researchgate.net/publication/337697091_The_Novice_English_Teachers'_Experience_Practices_and_Challenges)
- [58] Shadiev, R. & Yang, M. (2020). Review of Studies on Technology-Enhanced Language Learning and Teaching. *Sustainability* 2020, 12, 524; doi:10.3390/su12020524  
[www.mdpi.com/journal/sustainability](http://www.mdpi.com/journal/sustainability)
- [59] Shin, S. K. (2015). Teaching Critical, Ethical, and Safe Use of ICT to Teachers. *Language Learning & Technology*, 19(1), 181–197.  
[https://scholarspace.manoa.hawaii.edu/bitstream/10125/44408/19\\_01\\_shin.pdf](https://scholarspace.manoa.hawaii.edu/bitstream/10125/44408/19_01_shin.pdf)
- [60] Tobón, S. (2010). *Formación integral y competencias: Pensamiento complejo, currículo, didáctica y evaluación*. 3a ed., Centro de investigación en formación y Evaluación CIFE, Bogotá, Colombia, Ecoe Ediciones.
- [61] Tobón, T. S., Pimienta, P. J., y García F. J. A., (2010). *Secuencias Didácticas: Aprendizaje y Evaluación por Competencias*. México:Pearson-Prentice Hall.
- [62] Zur, O. (2011). On Digital Immigrants and Digital Natives: How the Digital Divide Affects Families, Educational Institutions, and the Workplace. <https://www.zurinstitute.com/digital-divide/>
- [63] UAEH. (2011). Plan de Desarrollo institucional. (PDI-2011-2017).  
<http://www.uaeh.edu.mx/excelencia/pdi.pdf>
- [64] UNESCO (1998). *World Declaration on Higher Education for the Twenty-First Century: Vision and Action*.  
[http://www.unesco.org/education/educprog/wche/declaration\\_eng.htm](http://www.unesco.org/education/educprog/wche/declaration_eng.htm)
- [65] Venezky, R. (2004). Technology in the classroom: Steps toward a new vision. *Education, Communication & Information*. 4. 3-21. 10.1080/1463631042000211024.
- [66] Vijayalakshmi, S. (2014). Critical analysis of ICT usage and influences in higher education. *International journal of Informative & Futuristic Research. An Enlightening Online Open Access, Refereed & Indexed Journal of Multidisciplinary Research Volume -1 Issue -9, May 2014*. <http://www.ijifr.com/searchjournal.aspx>.