

Didactic strategies supported by ICT for the improvement of English learning  
among 11th-grade students in a private school in Cali

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## **Abstract**

With the advent of modern technology, in many countries ICT (Information Communication Technology) has become a useful tool used in L2 learning with increasing frequency. It offers English learners the possibility of practicing the target language using computer applications, electronic writing, smart phones, audio books, virtual interviews, and other current methods. This project focuses on didactic strategies supported by ICT to upgrade 11th graders' four skills in a bilingual school in Cali, Colombia. The speaking, listening, writing and reading English abilities were covered and enhanced through EFL workshops with ICT-based techniques. The results obtained from students' data provided twelve significant findings, showing that ICT has limitations, but also offers highly effective ways for EFL learners to increase their language proficiency and TOEFL IBT scores.

Key words: ICT, didactics, strategies, English, bilingual, learning, teaching.

## **Resumen**

Con la venida de la tecnología moderna, en muchos países, las TIC (Comunicación de Información Tecnológica) se han convertido en una herramienta útil que se utiliza en el aprendizaje de la segunda lengua con mayor frecuencia. Ésta ofrece a los estudiantes de inglés la posibilidad de practicar el segundo idioma utilizando aplicaciones informáticas, escritura electrónica, teléfonos inteligentes, libros de audio, entrevistas virtuales y otros métodos actuales. Este proyecto se centra en estrategias didácticas apoyadas por las TIC para mejorar las cuatro habilidades de estudiantes del grado 11 en un colegio bilingüe de Cali, Colombia. Las habilidades de habla, escucha, escritura y lectura del inglés se consideraron y se mejoraron a través de talleres de inglés como lengua Extranjera con técnicas basadas en las TIC. Los resultados obtenidos de los datos de los estudiantes proporcionaron doce resultados significativos, mostrando que las TIC tienen limitaciones, pero también ofrece formas muy efectivas para que los estudiantes de inglés aumenten su dominio del idioma y sus puntajes en los exámenes TOEFL IBT.

Palabras clave: TIC, didáctica, estrategias, Inglés, bilingüe, aprendizaje, enseñanza.

## Introduction

This project describes an exploration of ICT-based strategies for the improvement of EFL in 11th graders at a bilingual school in Cali, Colombia. The first chapters state the problem and give questions for research, emphasizing the use of ICT in Colombian education as particularly relevant given the current priority of English language learning for the Ministry of Education.

The following chapters provide the project's theoretical basis and the qualitative study that was completed. They also detail the methodology, research design, action plan, and procedures followed in collecting data. The research-based foundations of ICT are thoroughly examined as well as the didactic strategies for its execution.

In the last chapters, results of the study are presented based on the data that was obtained from the participants. It will be shown that there were twelve significant findings that emerged, considering three specific categories for each one of the skills to develop. Speaking didactic strategies supported by ICT are discussed in three findings, as well as listening, writing workshops and reading techniques. These results close the dissertation, with final thoughts and arguments for using ICT-based strategies in an EFL classroom.

Overall it will be shown that the ICT-based strategies researched were supported despite their limitations in this modern digital age. The didactic techniques and their respective results are provided in terms of their analytical frameworks throughout the study. Finally, it is suggested that didactic ICT-based strategies should be explored more often in Colombia like they have been abroad, to hone students' English language skills, increase scores on TOEFL iBT exams and enhance intellectual abilities in bilingual education settings.

## 1. Statement of the problem

Learning English in a non-bilingual country like Colombia, said indeed a challenge to take on. Despite countless efforts made by the Ministry of Education and some public and private schools, the results on standardized tests across the nation remain below expectations (Bonilla & Galvis, 2011). Therefore, researchers need to take action to solve this serious issue that has to be studied and reflected upon.

The bilingual education problems in the country are made even clearer in Sanchez-Jabba's (2013) thorough research, where he asserts that more than 90% of high school students got an A-/A1 level on national English exams, which makes Colombia fall into the lowest levels in Bilingualism. Their numerous weaknesses were evidenced in the four skills: speaking, listening, writing, and reading, which show the need for and pertinency of programs to remedy this problem.

Notwithstanding the evident lack of proficiency in English as a foreign language and the bleak outlook on Bilingualism, there are private bilingual schools in the country that strive to make a positive impact on English learning. The bilingual school in this project is still looking for ways to upgrade levels of both students and teachers, since 11th graders have many limitations in the four skills despite all the methods employed to solve this problem. For this reason, if English teachers are not competent enough in the language themselves and the techniques to use, their mistakes would be replicated to their pupils. (Rockoff, 2004)

Technology has clearly made positive changes in general education. It has provided students with better tools to study a second language, such as specialized software to upgrade non-natives' pronunciation, audio books, electronic folders, and other methods. In relation to this, Ybarra (2004) provides concrete evidence of ICT benefits when the author contends that computer-assisted instruction (CAI) has remarkable results as a supplemental instructional tool for teaching English language learners. Additionally, Zou (2007) states that pupils who had good ICT skills were qualified and highly skilled at learning English.

The use of technology may provide learners with useful strategies to enhance their skills. Undoubtedly, it has had positive effects in countries like Canada and USA where authors like Trenchs (1996) and Lewis (1997) made good use of ICTs in specialized software, especially to confront EFL challenges among large populations; however, their use in Colombia has to be better promoted to raise

standards of performance. Consequently, it is necessary to implement ICT strategies to reduce the numerous problems in English learning.

The design of ICT-based strategies for the enhancement of English learning is necessary to contribute to students' success in the language. These methods have to be examined to observe their feasibility and potential for the challenges that students are currently confronted with. Thus, the ICT strategies are planned and designed according to pupils' needs. Therefore, they are likely to be a possible solution to the most common and previously stated problems.

Based on the above-mentioned statement, the following research question arose: What teaching strategies can be designed with the support of ICTs for upgrading English learning among 11-grade students in a private school in Cali, Colombia?



## **2. Objectives**

### **2.1. General Objective**

Design didactic strategies supported by ICT for the improvement of the four skills in English learning among 11th-grade students in a private school in Cali.

### **2.2. Specific Objectives**

- Describe the designed ICT strategies, indicating the necessary resources, activities, procedures, criteria and evaluation instruments for their implementation.
  
- Incorporate the designed ICT strategies among a group of students, establishing all the appropriate elements.
  
- Analyze the result of adapting the ICT strategies through the application of the evaluation instruments.

### 3. Literature Review

This section delves into the underlying theory pertinent to the development of the project. Thus, the research-based foundations regarding ICT will be examined thoroughly as well as the strategies to carry out along the process. English language skills will also be presented with their theoretical underpinnings and their need in an academic setting for the appropriate research and contribution to this educational field.

The theoretical aspects of ICT will be reviewed in depth as well as the strategies to work on. Then a thorough analysis of the skills to develop will add an extensive and detailed study to the main purpose of the thesis, which is to enhance learning abilities through ICT.

#### 3.1. ICT in Educational Contexts

ICT has been widely regarded as an empowering tool in academic settings particularly in private schools. ,states that "there is a general conviction that ICT has significant potential for improving the quality and standards of pupils' education." (p.17.) Additionally, Trucano (2005) asserts that ICT in developing countries has a positive general impact to enable educational reform, motivate e-learning and promote greater efficiencies in education systems with the use of digital and innovative learning tools.

It is noteworthy to mention that Du Toit (2015) examines the educational potential of ICT in delivering instruction, ICT-enhanced pedagogy, digital curriculum and assessment. Moreover, Trucano (2005) notes that when ICT is explored thoroughly, it can leave a lasting impression on teachers, serving as a guide in their daily life to develop pupils' creativity, problem-solving issues, informational reasoning skills, oral production and other higher-order thinking skills. Based on the authors' statements, the use of ICT in class becomes a priority to assist students in becoming literate in the English language.

Although the integration of technology in an EFL setting could be overwhelming for both teachers and students, it is necessary for the participants to be fully prepared when using ICT for their own benefit. For this reason, it needs to be thoroughly

explained, used wisely and properly monitored. As a result, Passey and Ridgeway (1991) suggest that ICT should be taught at schools in the curriculum.

From Harris' (1994) perspective, ICT is a question mark in the curriculum because there is uncertainty if it could be taught as a separate subject. In an EFL setting, it could be embedded implicitly into the areas to study according to the group of students and educational contexts. However, careful examination should be taken into account as "ICT is not a subject to be taught in its own right". (Zanker, 2000 p. 49).

Students are usually expected to get accustomed to ICT as careful work is done with them in the school. Therefore, research and theorizing have emphasized the relevance of ICT on the quality of teaching and learning in subjects other than ICT (Davis, 1992). The use of ICT may become more difficult in a foreign language, but that is the challenge of this thesis, describing the impact of technology on the issues that are encountered in bilingual education.

Crawford (2001) in his Ph.D thesis attempts to identify factors that lead to high levels of ICT capability in pupils aged 14-16, insofar as it considers improvements in the quality of teaching and learning. The author's main concern is that after many years at school there is not sufficient knowledge and understanding of ICT, which becomes the focus of his study. It could be compared to this thesis knowing that ICT in English Learning should be taught in conditions where learning is achieved successfully. Thus, ICT becomes a facilitator in the students' learning processes.

As outlined above, ICT must be in proper environments to provide learners with effective and innovative methods. In Crawford's (2001) view, schools are complex organizations when it comes to technology and there are many factors that may influence the development of pupils' ICT capability such as the teachers' standpoints, the curriculum, investment, etc. These aspects come into play when using ICT-based strategies because pupils and teachers need to be completely prepared, focusing on the needs, educational programs and the budget of the school.

As discussed previously in the statement of the problem, the enhancement of the four skills in the English language is a fundamental need in this project. Therefore, ICT, aimed at their improvement, must be skillfully implemented in the strategies for careful consideration and an in-depth, analytical study.

### 3.2. ICT and the four skills in EFL

ICT is continuously evolving in the educational field and it is arguably necessary in EFL settings where there is a need to change for more appropriate teaching and learning processes. Zou (2007) contends that ICT may be an empowering tool for the development of the four skills in English such as reading, writing, speaking and listening. These abilities should be taken into consideration for critical mastery in the language. For this reason, this research seeks to examine the pluses and minuses of the use of technology in English language instruction regarding the aforementioned skills.

As outlined above, mastering the four major skills in EFL is paramount in contributing to students' comprehensive knowledge of the language. Hence, Vogt (2013) asserts that for many years the teaching of these skills has been pushed into the background in the interest of encouraging students to express themselves. From such a perspective, it is important to consider Charalambous' (2013) research in the UK, in which he explores EFL pupils' perceptions of the use of modern means in virtual components, examining the benefits of e-platforms, e-feedback, computer-assisted language learning (CALL), among others. Therefore, these benefits must be also considered in Colombian contexts.

According to Vogt (2013), the four skills should not be eclipsed by the 5C's approach which is the in-depth study of communication, cultures, connections, comparisons and communities. In his view, the successful learner is the one who is concerned about the details of the foreign language, verbally interacting with others. In this project, ICT emphasizes the details of the English language with suitable strategies, so that the learner could be well-satisfied with all that they are practicing online. Hence, it is important to analyze ICT in depth to actually reflect upon the results it may have, whether they be positive or negative.

Based on the above-mentioned statements, Charalambous (2013) stresses the analysis of the four skills by stating that they should be given a detailed study one by one separately, since they are strongly correlated, but diverse enough, logically and empirically. For this reason, in this theoretical framework, the four skills will be studied in depth.

### 3.3. ICT and the Speaking Skill

Speaking is one of the most important skills for EFL learners to acquire, however despite efforts made by language schools, the mastery of this ability is still quite complex to achieve (Sanchez-Jabba, 2013). In order to find successful strategies to solve this problem, Zou (2007) in his Ph.D research, indicates that speaking is vastly improved through CALL (computer-assisted language learning) since students have the ability to learn phonetic symbols and sounds with native-like pronunciation and hold a conversation with native English speakers via Skype or any other social media. Additionally, Hoven (1999) ascertains that these multimodal forms of learning are ideal for fostering speaking in the target language.

The importance of developing Speaking is vital as shown by Ur (1996) who identifies four main problems in this skill, which are inhibition, nothing to say, low or uneven participation and mother-tongue use. English learners have to be fully prepared and qualified to overcome these obstacles as it is a common problem in Colombian contexts. This "oral production" as Onatra and Peña (2008) refer to it, must be looked into for the betterment of society, especially with the increasingly popular technological fields (Hoven, 1999).

Oral production is related to performance rather than competency since the speaker is required to practice in real-life situations (Nunan, 2001). Basically, speaking is what usually demonstrates if the practitioner has learned the target language effectively. In Ramirez and Alonso's (2007) research, the authors identify project techniques aimed at solving speaking problems involving human relationships, particularly with respect to children's lives, which increases motivation as well as their acquisition of knowledge.

Based on the aforementioned statements and projects, ICT may play an important role in the acquisition of oral production since students are in contact with native speakers online, even from a far distance where they are just 'one mouse click away'. If a friendship between them is formed, their speaking abilities will be much more efficient. Therefore, in this project, it is relevant to optimize ICT strategies for this skill, which is essential for the language as it was previously stated.

### 3.4. ICT and the Listening Skill

Full mastery of listening skills in the English language is a matter that requires constant research. It is, as well as speaking, one of the most difficult abilities to master. This situation could be evidenced on the listening tests where both teachers and students got low scores. (Bonilla and Galvis, 2011). Individuals must be competent in this skill to be able to answer questions and understand all that is being said, so communication will not break down and conversations in the target language will flow naturally and smoothly.

Charalambous' (2013) research draws upon the effectiveness of listening activities such as podcasts, online lectures, video clips, to name a few. These visual and auditive aids with multimedia applications for foreign language learning can provide a more realistic picture of the new language, including not only linguistic but also paralinguistic features such as body movement, mannerisms, prosody, etc. (Brett, 1995; Fidelman, 1997; Gassin, 1992; Hurley, 1992). According to the authors, such aids convey meaning to the learners.

Fortunately, in Colombia and especially in most bilingual schools students are having greater access to technology, which enables them to try out listening activities and watch movies with subtitles, which may be beneficial for language retention. (Patten & Craig, 2007). For that reason, this research emphasizes the fact that ICT is becoming a powerful means to design web applications, online resources or computer-assisted methods to contribute to students' listening abilities.

The constant use of internet-based strategies in listening has been regarded as highly beneficial for learners. Witfelt (2000) highlights the fact that multimedia is an enriching tool for listening in language learning and that the role of teachers is crucial to guide pupils along the process. In addition to that, Gilmour (2004) conducted an online self-study program called *College English* where the general feeling was more positive than negative. In this program, students constantly practiced listening in the laboratory with the proper equipment. Additionally, Bransford (1999) asserts that students need feedback from the teacher to be more involved in the listening process.

The above studies are fruitful to discuss since constant practice with computers pays off. Hegelheimer & Tower (2004) investigated the use of computer software in a

class at an undergraduate level. The software provided students with a variety of listening materials and presentations where they could record themselves as many times as they wanted and compare their speech to native speakers'. Thus, repetition tasks in listening could be successful and promote autonomous learning. (Little, 2002).

Similarly, Zou's (2007) study outlined CALL sources to incentivize bilingual education in UK universities, concluding that the listening programs on computers expanded the interaction among teachers and students and there was rapport in the learning atmosphere. In Warschaeuer and Meskill's (2000) view, students practice skills individually or collaboratively in the computer lab, where all students become a virtual community to learn from.

As discussed above, with the use of ICT, students gain a feeling of satisfaction from their virtual work. It could be overwhelming at first but very effective as time goes on. The findings in the previous research studies therefore support the use of the selected computer applications for listening tasks and the impact it has on students where pupils improve this skill, which is crucial in EFL settings.

### **3.5. ICT and the Reading and Writing Skills**

As was examined earlier, the main skills in EFL such as speaking and listening have shown progress in bilingual education with the use of ICT. Therefore, writing and reading could also benefit greatly from ICT. Amado (2009) claims that EFL literacy skills were developed effectively while students wrote creatively using multimedia, videos, movies, etc. Students' data was analyzed through Lannon's (2000) writing process which is to write, edit, revise and rewrite. The author provided in his Master's research several authors' perspectives and examinations on writing, some of which are discussed in this project as well.

Several authors seek to illustrate a definition on reading and writing from different perspectives and standpoints. Bello (1997) defines writing, in general, as a process of discovering how to find the most effective language for communicating one's thoughts and feelings. Using modern technology to allow students to be inspired could strengthen their skills considerably, promoting "self-expression" (Dyson, 2003).

Cooper (1993) conceives writing as an activity that brings the discovery of meaning because the writer comes across new associations among their ideas, opinions and thoughts. Similarly, Metcalfe (1996) contends that writing and reading allow students to put the theoretical things that they have learnt in context and practice. This brings us to the fact that prior knowledge becomes essential to create new knowledge while being confronted with a foreign language.

Similar to Lannon's (2000) views, Manjeet (1992) asserts that writing is viewed as a process, divided into three categories: planning, drafting and revising. This process should be undertaken with ICT using specialized applications where students can learn how to plan, draft, and revise their work in the most suitable manner. Hence Lester (1994) illustrates that with the appropriate writing cycle, ideas become organized by using coherent and cohesive devices in the written form.

Since students need to become more literate, it is important to go over the skills that need to be developed. Hampton (1989) suggests that the skills that need to be optimized in EFL settings are fluency, comprehension, and finally creativity. These three skills will be kept in mind with ICT altogether, creating what is necessary such as mobile applications, online devices, and special use of web pages, among others. Additionally, Cisneros (2012) states that academic writing is a process that is changing over time and technology has eased that process providing software to correct, edit and rewrite texts in the best possible way.

In order to improve writing skills, Dugg (2003) suggests 4 ideas: 1) that the writer should allow their pieces to write themselves, letting the words flow; 2) Excitement about writing instead of dreading it as a chore; 3) A relaxed and peaceful state to actually enjoy writing; and 4) Clarity and confidence, knowing what to put in and what to leave out. These ideas should be considered while designing ICT writing strategies to be better equipped in the language.

As for reading skills, Al-Beckay & Veerraghava (2015) conducted an extensive reading study to foster improvement for Arab students who had insufficient linguistic competence. The examination on reading skills proved to be suitable to Arab students' needs since they were allowed to read what they wanted, instead of what was imposed on them. Koch (1974) states that reading is the most important of the four skills and selecting what students are interested in is a strategy to appease them for effective learning.



It is important to design applications where students share their reading interests as well as what hinders their reading efforts and the analysis of their reading materials online. Al-Beckay & Veerraghava (2015) claim that there have been numerous research efforts that evidence widespread interest in reading abilities. They cite authors in their Ph.D thesis such as Emery (2005) and Fender (2003). The former outlines read-aloud strategies to provide feedback to students through repetition and modeling and the latter refers to Arabs' most common problems in word recognition. In this present study, virtual and face-to-face feedback from the teachers is vital to speed up the reading process effectively.

Instead of designing read-aloud strategies, with ICT, students can easily get access to audio books and virtually automated voices where they can reinforce reading and also listening at the same time. This is important to know since teachers view reading as a complex structure of patterns of higher mental thinking which involves all types of thinking such as: evaluating, judging, imagining, reasoning and problem-solving (Gates, 1949). This author was cited in Ibrahim's (2015) research and his assertion regarding reading is that it can be improved if students select their own material to read, choosing what they like and feel comfortable with.

Ibrahim (2015) cites the following experts' viewpoints on reading backgrounds: Reading assisted by ICT could be a process of formulating an image of a written text in the mind of the reader before the contents of a particular text are comprehended (Richards, Plat and Plat, 1999). In addition to that, reading is considered a vital pathway to the development of personality traits as well as the development of social, economic and civic life (Holden, 2004). It is perceived as a sign of a literate and educated society (Roe, Smith and Burns, 2011). It is relevant to consider these definitions while using ICT since learning to read is a complex process that needs to be studied thoroughly.

Much of the literature in this chapter discusses several definitions of the four skills and how they can be improved through ICT. In this research project, ICT is a current need in education in Colombia since the above studies illustrate the possibilities for pupils to use technology to practice all the skills in second language learning successfully. It is important to note that most ICT projects have been conducted abroad and the nation requires research regarding this issue, especially after analyzing the below-par results on English exams obtained in the whole country. (Sanchez, 2013).

A selection of projects and authors' views on ICT and the four skills were reviewed in this section and it is important to investigate if ICT is effective for developing learners' skills. Therefore, the use of computers and mobile technologies are supported by the theory presented and ICT has to be explored to take action and enhance students' skills and scores on exams, especially on TOEFL iBT, which is generally considered the most reliable test to measure students' English skills properly.

Based on the existing literature in the field, one must concur with the experts who state and report that English learners acquire language skills by utilizing ICT-based didactic strategies. Indeed, technology throughout the world has made a great impact on educational matters, especially on Bilingualism. Therefore it has to be researched with more depth and thoroughness to reflect upon the results effectively.

According to Zareekbatani (2015) "the use of instructional technology has opened up new avenues in education with broad implications in the foreign or additional language (L2) learning context" (p.1). As described earlier, ICT-based strategies should be incorporated into the classroom. Consequently, these methods of teaching and learning may foster EFL improvement for the four skills, which is a key component to appraise students' progress in the foreign language.

### **3.6. Rationale of the Study**

The current study is significantly pertinent in Colombia, South America, since English Language Learning is a fundamental need at present. This issue becomes quite evident in the country's top-down and recent educational policies such as the now-familiar law No. 1651, 2013, which promotes PNB 'National Bilingual Programme' and the law No. 1341, 2009 which seeks to improve Colombians' quality of life, human capital and financial development through ICT.

The aforementioned aspects are key to students' growth as proficient English learners to be successful in mastering universal communication and multicultural exchanges. Consequently, the country is constantly striving to offer good quality components through ICT such as 'the development of standards for teaching and learning, professional development for teachers, the monitoring and evaluation of competencies, the provision of digital aids to English learning and the identification of solutions.' (British Council, p. 14)

A large number of specialists believe that ICT, if used wisely and properly monitored, can promote the acquisition of L2 easily and effectively. In Zou's view (2007), for instance, students achieved outstanding outcomes through CALL (computer assisted language learning) upgrading their level considerably. ICT can tellingly, provide a powerful pedagogic tool, ensuring linguistic development in the four skills as a contribution to the fieldwork to examine.

In EFL settings, technology has been playing a very important role in an increasingly modern world where students should be making the most of ICT for their own benefit. Sanchez-Jabba (2013) states that students unfortunately are not on the level and English teachers' level is not satisfactory enough either. In order to remedy this problem, and make Colombia a bilingual country, ICT needs to be prioritized and researched in depth.

Pupils who engage in their own self-education process through ICT-based strategies can increase their capabilities as critical EFL thinkers. The visually appealing and attractive aids ICT offers should be considered as ways of enriching the study of language by providing valuable and meaningful contexts. The benefits gained by ICT abroad are relevant to the country's needs and interests and these viewpoints were fruitful for EFL practitioners to pursue and optimize this research.

With the above elements in mind, ICT becomes a possible solution to the most common problems in EFL. For this reason, this project aimed to explore the effectiveness of utilizing ICT in enhancing EFL learners' competencies in the four skills: reading, writing, listening and speaking. Hence, it is important to note that designing didactic strategies supported by ICT is essential for optimal EFL performance and significant potential outcomes.

## 4. Methodology

### 4.1. General Aspects

This chapter discusses the general aspects of the design of this study and explains the research procedures comprehensibly. As this project sought to utilize ICT to develop students' listening, reading, writing and speaking skills in an EFL course in a bilingual school in Cali, Colombia, the research methodology was developed from issues arising from the literature. The purpose was to identify contextualized strategies and design the proper research methods to guide students in their learning process.

It was important to propose the employment of new methods where ICT-based exercises provided students with modern techniques to sharpen their skills, raising their standards of performance. This provided a general scope for the fieldwork to explore and make a positive impact on. For this reason, the methodology that was used, aimed to investigate how ICT was implemented for individual study and improvement in the four skills was a crucial point to look at and go over thoroughly.

In order to see what was feasible in ICT strategies, computer mediated environments were essential to carry out the whole study. The equipment in the laboratory provided participants with different types of online questions (similar to ICFES/TOEFL exams for students in the 11th grade). Students were able to interact online with others and were more prepared for follow-up tests. Additionally, with the aid of the website socrative.com students were assessed and evaluated systematically.

To conduct this investigation, qualitative research was well suited to the study since according to Creswell (1998), this kind of research aims at gaining insight into people's value system, motivations, and concerns. This indicated the levels of improvement in the practitioners' work, analyzing data from their points of view as well as the researcher's to observe their needs in academic settings. Students' behavior and personality were analyzed while the research was carried out to observe the significant influence ICT had on the participants.

The researcher in action research is a participant observer who is looking for a positive change in the classroom despite all the difficulties and issues that students

might encounter. From this point of view, a qualitative research is designed to observe pupils' improvement in their four skills using ICT-based strategies when the teachers employ the appropriate teaching methods in this modern era. In this way, the researcher became informed about the students' skills, which helped identify their progress and weaknesses.

Richards (2001) states that in qualitative research, the participants are observed in a natural setting, allowing the researcher to be a participant-observer of the field of study. In addition to that, Cohen and Manion (1994) state that a researcher observes a study from two different perspectives: being a participant or a non-participant observer. Thus, participants can be monitored appropriately to utilize ICT wisely.

Foundational to this methodology in the field of second language acquisition are Al-Alami's (2012) statements when he asserts that qualitative research compares and contrasts different qualities such as the process of learning new EFL/ESL vocabulary. Hence, this project analyzed the data as the author suggested since students' progress was compared based on the implemented strategies and TOEFL iBT scoring to be more organized and systematic in the whole process.

## **Research Design**

Action research was conducted since this design explored in detail what kinds of strategies were used to enhance students' performance through ICT. Also, it provided an action plan based on the research model proposed by Elliot (1991,) which seeks to plan, observe, act and reflect upon the findings of the study. Consequently, action research allowed the researcher to supervise and examine interactions, perceptions and various sources of data that showed optimal results in the process.

After reviewing the data gathered from practitioners, it was relevant, as discussed above, to examine behaviors, perceptions, and attitudes, among other aspects to take action and make a positive impact on students' limited skills. Rowell et al. (2015) states that this kind of data takes place in alignment with the action researcher's personal and professional belief systems. Thus, this is where the researcher steps in to take action for the encountered issues, making a transformative change, reflecting upon the findings. (Zuber-Skerrit, 1991).

According to Carr and Kemmis (1986,) action research seeks to assist teachers who wish to make changes in their classroom practice. For this reason, to make improvements in students' four skills, it was necessary to consider Kemmis and McTaggart's (1992) statements who argue that 'to do action research is to plan, act, observe and reflect more carefully, more systematically, and more rigorously than one usually does in everyday life' (p.10). That was easily related to Elliot's (1991) research model, which is similar in the stages. It assisted the researcher in gathering serious data as well as implementing and evaluating it systematically.

Moreover, Kemmis and McTaggart (1992) suggest that action research is a form of self-reflection undertaken by participants in academic situations in order to improve their own teaching and learning practices. It was a very systematic approach to conduct, analyzing all that was done in the process of implementing ICT-based strategies. Much of the researcher's time was spent on collecting, analyzing, and presenting data on an ongoing, cyclical basis. (O'Brien, 1998).

Action research was a reliable method to investigate positive changes to solve the current problems and it was an excellent source for important archival data (Whyte, 1991). Thus, action research needed to be conducted to diagnose, take action, evaluate and specify learning. (Phillips & Carr, 2006.) These cycles were essential to identify the problem and contribute to a possible solution with the appropriate ICT methods. The above-mentioned authors are also mentioned in Amado's (2010) research, who also conducted an action research study.

Online interviews, questionnaires, digital resources, constant observations and reflections assisted this research in fulfilling the aims of this study. Software and online programs and applications based on the design of ICT didactic strategies were analyzed extensively, exploring insights, emotions and reflections to optimize learning skills. This data enabled the researcher to observe whether or not there was improvement and when and where to take action to transform the observed limitations into positive outcomes.

#### **4.2. Research Context and Participants**

This research project took place in a bilingual school in Cali, Colombia. This is a private, bilingual school specialized in teaching standard American English courses and other high school subjects from beginners to advanced students. This school offered excellent labs where ICT-based could be incorporated effectively.

Classes in this institution are usually made up of 10 to 30 students, which differs from the crowded and numerous classes in public schools. Therefore, teachers are easily able to monitor students on a personal basis. The English courses offered in the school are meant to guide pupils to manage their work and define their personal objectives to achieve an outstanding performance.

It was important to let students build self-awareness more effectively, identifying areas where trainers could maximize their contributions, gaining access to key skills and ICT-based techniques. This was accomplished by analyzing students' scores, observing their behavior, planning the workshops according to pupils' needs and reflecting upon the findings to do exercises more appropriately.

As students participated in all of the ICT strategies, the researcher was motivating them all along and with the online tasks, students were autonomous at their own computers. All of the strategies supported by ICT sought to upgrade students' academic performance. With ICT, students in this school were presented with opportunities to learn about how to write creatively and develop appropriate skills to express themselves in a variety of online exercises.

This private educational setting was suitable to conduct this research because it offered benefits for the students such as well-equipped laboratories, libraries, books and recordings. Students were involved in a variety of ICT activities where they watched films, used their mobile phones, participated in literature circles, etc. It encouraged students to amplify their English knowledge and upgrade their four skills.

The participants chosen for the project were 11th graders who started in September 2015. The previous groups of 11th graders did not participate in this project, since ICT-based strategies were not carried out with them. But their TOEFL iBT results were compared to those of this new group of students who were trained with ICT. It was important to see the difference in the scores achieved by participants who were trained using ICT tasks and those trained by traditional methods.

Students voluntarily agreed to participate in the exercises combined with the use of ICT for their own benefit. They graduated in June 2016, and even though the school has many benefits, the output gained in terms of English skills was still below expectations. Despite the drawbacks, the participants were committed to learning

English with the most suitable ICT strategies and activities for their effective performance.

### **4.3. Action Plan**

Based on the participants' needs, it was necessary to take action to solve students' limitations in the four skills. For this reason, this group of students needed a new perspective and didactic strategies to improve their oral, listening, writing and reading difficulties such as the lack of fluency, coherence and cohesion, among others. Consequently, this action plan was based on students' priorities in the four skills.

Although students had studied the language thoroughly for many years, they needed to work on relevant aspects such as grammar, accuracy, better development of ideas and idiomatic expressions. In order to do so, didactic strategies based on ICT were proposed as stated in the research problem and extensively studied in the literature review. ICT-based activities supported students and educators to carry out this project effectively.

ICT-based activities were chosen according to the students' level. Before carrying them out, it was relevant to check pupils' level through a diagnostic exam and explain to them how to use ICT in their contexts easily and appropriately. The proposed activities were meant to let youngsters be more motivated and interested in improving their English to grow as L2 learners. Most of the activities were online components where students tested their four skills in diverse ways. Therefore, technological advances were necessary in this project to use more modern tools and make a positive change in education.

The pedagogical activities were described based on the communicative approach, which constituted an important part of this research. Constant observation and reflection allowed the group of participants to understand ICT exercises and strategies in a straightforward manner. This was important to focus on since students were willing to participate in all of the proposed tasks. There were many strategies, where participants could find their own voices and express their thoughts and emotions accurately and also with the use of modern technology.



The action plan was divided into 4 workshops. Each workshop had three specific didactic strategies for each one of the skills to study and make a positive change to. The tasks proposed in the action plan were as follows:

-In the speaking didactic strategies supported by ICT.

Students interacted with a native English speaker via Skype. The interviewer and the interviewees were prepared with the questions beforehand to facilitate the speaking process and ease tension. Skype interviews with English speakers were a fundamental need to be more immersed in the English language. Students had around 10 to 20 minutes to communicate with the native English speaker. But before doing so, students were given a list of pointers on how to speak to natives and some questions in advance to avoid confusion or frustration, in case the interview was not crystal clear to the participants.

After the interview, students practiced their interview skills with their classmates using the vocabulary they learned with the native English interviewer. They were able to use their mobile technologies (smart phones) to record and correct themselves. Each pair of students showed the recordings to others and practiced the conversations with the teacher.

In the Laboratory, students used specialized and user-friendly software to repeat words, learn phonetic symbols and practice online conversations. ICT provided very vivid images, pictures and words to pronounce effectively.

-In the Listening ICT strategies.

Students were in the laboratory constantly watching video clips selected by the teacher to listen to conversations, stories or short conferences in an animated way.

Students requested to watch a movie after seeing the video clips, which they enjoyed. The movie activity was not really planned, but teachers took action to modify the assignments according to the students' needs and likes. Pupils watched

the movie using their own headphones and computers in the laboratory. They wrote down new words and expressions.

Students used their tablets, smart phones and computers, downloading applications to watch pieces of news, also conferences and were able to practice listening exercises based on TOEFL iBT.

-In the writing ICT exercises.

Students used WhatsApp and chat rooms to write informal language which was important to learn. Students chatted with the teacher as well, writing colloquial language and building rapport among them. Thus, students got to know more personal aspects about their teacher and trust was important to ask the guide as many questions as they could/wanted or vice versa. Students shared their online work and got to know more about their peers and that way they were able to practice reading too. Thus, students chatted with one another to become a virtual community.

Students participated in online workshops, where they were able to express their own voice. As Amado (2010) in his research project suggests that writing is successful when students write creatively, it was important to consider creative writing with ICT. Pupils were given online tasks where they could practice their writing skills with activities, writing imaginatively what they wanted to create. Their topics were free and they wrote what they felt like, encouraging their own autonomy.

In consultation with the tutor, participants undertook individualized programs of study which included academic writing with TOEFL iBT applications, revision of their own work as well as a constructive critique of their online assignments.

-In the reading ICT tasks.

Pupils continued their reading training for TOEFL iBT, using electronic thesauri of all of kinds to boost their vocabulary.

In the computer, students had audio books to read and listen to American literature with specialized automated voices provided by ICT.

Students selected their texts to read/audio books where they were able to answer questionnaires about them. This strategy also trained participants to be more competent for the TOEFL exam.

With the above activities in mind, it was expected to contribute to an EFL teaching field with an instructional design based on ICT that was necessary for the learning process involved. As the results were reflected upon, learners were encouraged to develop their English skills through diverse ICT tasks and methods that enabled the researcher to achieve the objective of this project, which was to enhance the English language skills through ICT didactic strategies. These activities supported by ICT are greatly needed in Colombia at present, especially seeing the below-par results on national English exams across the nation. (Sanchez-Jabba 2013.)

This instructional design became an essential resource to achieve the learning objectives previously proposed. This whole process needed to be analyzed based on the principles of learning and instruction to see what was taught and learned as well as the proper assessment to students who were part of this process. Selecting an ICT-based instructional method with the activities outlined above was essential to carry out the objectives and use accurate techniques as well as teaching strategies.

ICT-based workshops were relevant for students who were willing to learn English. Therefore educators could obtain better teaching tools that are modern, original and suitable to the learners' needs. Creative and resourceful exercises based on ICT were able to assist students in developing the four skills. The online workshops that were planned were taken into consideration to use the theory outlined in the literature review with numerous visual aids that allowed for practical activities for pupils. These activities enabled practitioners to foster what was needed in order to create appropriate texts in a foreign language as well as to participate in discussions.

An online workshop based on ICT was the best way to approach the teaching of the four skills with this type of population. ICT-based Workshops were necessary since EFL students were able to be directed what they were doing. They learned the elements of ICT and CALL which were quite enriching for them. In the online workshops developed in this research, students did exercises that enhanced their English in various directions, as well as taking strategic steps in the use of technology. Besides that, students learned techniques to support their views to have a solid foundation on how to use ICT.

Students were guided along the whole process where the researcher acted as an instructor and guide, letting the students be in charge of their own learning. The orientation of the teacher was crucial in the way learning was acquired, therefore, individual tutoring was given to every single student to monitor their progress.

When teaching in the laboratory, didactic strategies such as online interviews, use of specialized software, etc. were encouraged, in which students interacted with each other. In terms of speaking, the researcher took action based on the students' needs and enthusiastically acknowledged their strengths while working in areas in which they were less confident. It was important to challenge students to look at problems from a variety of angles, while reassuring them that ICT is necessary to practice English effectively.

The above mentioned didactic strategies were based on the communicative approach in an EFL setting. According to Cooper (1973), the communicative approach is a teaching system that emphasizes interaction as both the means and the ultimate goal of learning a language. Interaction with the foreign language was a key term for this approach, and it focused its attention on the four skills, which were reading, writing, listening and speaking. With ICT-based strategies, students had better results on the TOEFL test compared to the students in the previous years because these pupils did not focus on ICT strategies.

The English classes the researcher taught in previous years, particularly in 2014 and 2015 in 11th grade were quite different from the classes in 2016 in all senses. The ICT-based strategies carried out with the group in 2016 provided evidence that the exercises were indeed very useful compared to the previous methods, which were not supported by ICT. In the groups in 2014, the laboratory was not used frequently

because as a teacher, I decided to stay in the classroom often. My knowledge of ICT was limited and it was quite traditional and common to get stuck at the board, using markers, explaining grammar and then complete and correct students' exercises in the English book.

In the classes in 2014 and 2015, the content of the book was always emphasized and students used to fill in the blanks in their workbooks. It was very teacher fronted where the educator just explained at the board and asked pupils some questions, but technology was not used at all. In a few classes in laboratories, students watched a film, then wrote some questions about it and dramatized the scenes of the movies. Students were given traditional warmers, content based on the units to study and the wrap-up of the class. Most of the classes took place in a classroom. Mobile technologies or computer applications were not used and students had to wait for the teacher to correct their workbook with a red marker, which was not very modern.

In the group in 2015 and based on the positive results obtained in the literature review where many research projects were successful, I started to get acquainted with technology and I began training students using ICT-based strategies where students could use the laboratory more often; however they were not fully trained as the group in 2016 who showed the best scores on the TOEFL iBT exams. With the advances of technology and modern images it projects on screens, pupils were much more motivated and ICT changed the classroom, face-to-face sessions in 2014 and 2015 to online tasks combined with ICT techniques.

In the groups in 2014 and 2015 we never used mobile technologies and we did not use any TOEFL applications from smart phones, tablets or CALL activities either. Most books were read without automated voices and students did not have electronic folders or video clips to practice TOEFL iBT exercises. Instead of computers or tablets, we used just a tape recorder to do listening tasks. Instead of the online thesauri students were offered in 2016, students used to have heavy dictionaries they carried in their backpacks and most of books were read in class without any technology backup.

Indeed, with ICT-based strategies, pupils were able to show what they thought, what they felt like, what they wanted the teacher to know, in a virtual way. Technology provided them with better tools to correct themselves in a more colorful way instead of making corrections on their books. For this reason, these ICT exercises created favorable conditions for students' learning skills, fostering the communicative

approach. Hence, Jin and Cortazzi (1998) assert that the communicative approach lets learners convey ideas, preferences, thoughts, feelings and information in a way that is addressed to reach others.

In this approach, Cooper (1993) states that students' motivation to learn comes from their desire to communicate in a straightforward way about meaningful topics. With ICT, students were able to communicate what they thought was important to them in a virtual environment where they could easily access internet or technology. In order to do so more appropriately, the researcher proposed specific activities to observe what students were doing online while they took on the role of EFL learners.

ICT platforms allowed the researcher to listen to the participants, to understand what they wanted and thought was meaningful. One must concur with Richards (2001) who states that teachers in communicative classrooms will find themselves talking less and listening more, becoming active facilitators of their students' learning. So I set up the exercises to keep observing what they did, and how they developed their skills through the ICT tasks that were planned for them.

Cooper (1993) states that the communicative approach is not interested in producing forms and sentences in their sterile correctness. Although, the author's position is valid, I think grammar, and correctness were necessary in the whole research process. For instance, Richards (2001) states that what students need is not more skills in communication, but lexical items to enlarge their vocabulary base. I kept that in mind while analyzing the exercises because without good grammar, it was really difficult to get their meaning across, and to avoid disruptions in communication. For this reason, grammar exercises were tackled in this project, especially in the writing workshops, because it was a way to comprehend the written text.

The ICT based strategies gave informative and emotional structure where grammar was a natural way of expressing ideas. The researcher gave tasks to practice for the TOEFL iBT and also stimulated their creativity to give students liberty of expression, interest and purpose in the course of work.

ICT for me as a teacher-researcher is a topic that I understood needed profound research, since I utilized it as the solution for the learning problems I observed and

wanted to analyze in this thesis. This research model based on ICT involved mobile technologies, CALL, online work to make their learning process easier, more modern and more enjoyable to enhance participants' four skills.

Foundational to this action plan is the fact that communicative approach is not just limited to oral skills. Reading and writing skills need to be developed to promote pupils' confidence in all four skill areas. By using elements encountered in ICT-based strategies, students had the opportunity to be more fluent and confronted the challenges of technology. The four skills needed to be developed to promote pupils' confidence when they sat at a computer or used their tablets or smart phones.

The aforementioned ICT-based strategies were fully organized in a timetable since they were divided into four workshops based on students' four skills: speaking, listening, writing and listening. The timetable was presented as follows:

#### **4.4. Timetable**

The following timetable provided systematic analysis stages based on the ICT strategies implemented in the classroom, keeping in mind the issues that need to be addressed in every workshop. The data analysis was thoroughly and systematically examined through the tenets of action research in terms of the action research cycle proposed by Elliott (1991). These cycles were taken into account while being an active part of the workshops.

The timetable below embodied the instructional design that was necessary to integrate ICT-based strategies into an EFL learning context. As outlined above, the action plan was divided into four stages which were speaking, listening, writing and reading workshops:

<b>S P E A K I N G</b>	<b>Dates</b>	<b>Objectives</b>	<b>Actions</b>	<b>Tools</b>	<b>Techniques</b>
	September - October 2015	<p>To get familiar with Skype/virtual interviews</p> <p>To participate in all the oral activities online</p> <p>To use communicative approach ICT-based exercises.</p>	<p>Online interview with native English speakers.</p> <p>Students' oral practice with their smart phones.</p>	<p>Online platform</p> <p>Students' samples.</p> <p>Online Oral exercises.</p> <p>observations</p> <p>Smart Phones</p>	<p><b>Content Analysis</b></p> <p>Students' speaking abilities were analyzed based on the action research cycles.</p>
	November 2015	To start working in an environment which supports and encourages the development of listening ICT-based strategies.	Monitoring of the students when using software.	<p>Analysis of recordings.</p> <p>Pronunciation patterns</p>	<p>Constant error correction while students participate in the speaking strategies</p> <p>Recognition, description and explanation of errors,</p>



<b>L I S T E N I N G</b>	February - March 2016	<p>Improve listening comprehension through video clips.</p> <p>To boost vocabulary watching a film.</p> <p>To be trained for TOEFL exercises with specialized applications.</p> <p>.</p>	<p>Use of Video clips</p> <p>Use of the movie 'the box'</p> <p>Videos: pieces of news</p>	<p>Practitioners' samples</p> <p>Listening worksheets</p>	<p>To work on students' limitations, repeating the recording and comparing their findings</p>
<b>W R I T I N G</b>	April- May 2016	<ul style="list-style-type: none"> <li>- To use informal English language via WhatsApp and chatrooms.</li> <li>- To use creative writing supported by ICT.</li> <li>- To practice academic TOEFL iBT writing with specialized apps.</li> </ul>	<p>Discussion of participants' work.</p> <p>Individual tutorials.</p> <p>Reflection of all the spirals of action research</p>	<p>Practitioners' writing comparisons.</p> <p>Online tasks</p>	<p>Analysis of the contribution of ICT based strategies to the English language in its linguistic aspects.</p>

<b>R E A D I N G</b>	May-June 2016	<p>To look for synonyms in electronic thesauri.</p> <p>To use automated voices for audiobooks</p> <p>To select academic texts to answer based on TOEFL iBT apps.</p>	<p>Perceptions of the whole reading process.</p> <p>Constant reflections.</p> <p>Analysis of all the spirals of action research</p>	<p>Reading samples</p> <p>Reading techniques using ICT</p>	<p>To use ICT based strategies to enhance reading comprehension</p> <p>To boost vocabulary and acquire insights into the four skills in the English language.</p>
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Table 1. Timetable

Source: the author.

As outlined above, the comparisons between the first samples and the final samples were essential to contrast data and theory identified in the literature review. As the data emerged, the whole action plan relied on the action research models to analyze students' products. In order to do so, constant observation was necessary to analyze how practitioners developed their workshops and the four skills based on ICT-based strategies.

The results obtained in action research cycles followed by the ICT-based workshops and the results obtained on TOEFL iBT were analyzed and compared to the previous groups' to see what contribution ICT made to the improvement of English language learners. The comparison also helped to see how these didactic ICT based proposals should be utilized as research models for education in improvement to enrich researchers' long-term academic growth.

#### 4.5. Data Collection Procedures

Throughout this research process with ICT-based strategies, the researcher became a participant-observer because of the engagements I had with all of activities that were planned along the way to observe students' progress. Thus, in-depth observation of the cycles was one of the most important data collection techniques to carry out this project. English teachers should plan strategies to master the four skills in the language and be an active part of the reflection process while planning, observing and acting upon the findings that were observed.

Due to the fact that this action research was aimed at improving the learning process of a group of EFL students in an 11-grade course in Cali, the various collection techniques had a close relation to the activities designed for the teaching process: one of the techniques used was the collection of online samples while using the platform [www.socrative.com](http://www.socrative.com). These samples corresponded to the materials included in online tasks to express freely and develop spontaneity.

Online questions were provided in the workshops as primary data for the development of students' texts, also students' samples on the Socrative platform were collected to analyze their achievements or limitations while students were confronted with ICT-based platforms. The samples throughout were an essential section of the data collection since Hedge (1991) states that these kinds of samples help teachers organize their thoughts and students' learning process is clearly evidenced.

The samples that emerged while utilizing didactic strategies based on ICT were very effective to get primary data to see the improvement of students' four skills. The participants also made great writing assignments in class correcting themselves through ICT and it gave researchers ideas about the areas students were interested in, and how they used the target language. Consequently, they served a systematic process for their final products while using the Socrative website.

During the data collection procedure, aspects such as students' online texts, and progress were taken into account as a unit of analysis while planning and writing their texts and also participating in the oral discussions in the lab. The improvement in the ICT process was evidenced through the analysis of different activities,

collecting their samples, which were analyzed for pupils' benefit, enhancing formal aspects of the language.

The data obtained in the workshops consisted of participants' samples, student's results on the TOEFL and the results in the workshops. In order to do so, The researcher used the aforementioned action research cycle proposed by Elliott (1991), in which the researcher planned, acted, observed and reflected upon what was necessary in order to shed light on the research question: which didactic strategies can be designed with the support of ICT to enhance English learning in 11-grade students' in a private school in Cali, Colombia? All the gathered data in every activity in the workshops was accounted for in the observations as the categories emerged one by one.

The collection of data took approximately one year which is the period during which I taught the 11th graders. The instruments I used were the participants' online texts, worksheets, my observations and samples. These instruments allowed me as the researcher to take action and make a difference in the way English was learned. In this project, technology played a pivotal role in enhancing the four skills in the English language in EFL settings.

The sessions with all the pupils were conducted in an orderly manner based on every skill (three findings each). As a teacher-researcher I always read my entire data constantly for the validity of my observations, and to see the development of the four skills in the ICT-based sessions. When reviewing the data, I was able to make a contribution of the work I did with the participants as a planner, observer and researcher.

The organization of the students' samples and observations was collected for the proper procedures in the analysis of this investigation. Their improvement in the four skills such as fluency, comprehension, (coherence, cohesion, vocabulary, grammar, and accuracy) plus creativity were analyzed in the ICT-based strategies. Since this was a qualitative process, the comparison of samples and TOEFL iBT results were used to account for the validity and credibility of the project. The patterns that were identified emerged from the samples taken from the online platform. When pupils started the process of speaking, listening, writing and reading, their samples were crucial in analyzing practitioners' learning process through ICT. They were also used to see if students acknowledged the teachers' ideas, or suggestions.

Data was categorized and statements were identified from the literature. As the data emerged, I relied on theory and observation to analyze students' products. In order to do so, my observations helped me see how practitioners developed their ICT workshops and got high scores on the TOEFL iBT. The previous work and final work were analyzed to see what they had learned, and how they had developed their four skills through ICT-based strategies.

As I took action with individual tutoring, students were assisted with all they needed, including CALL assistance, vocabulary, grammar, punctuation, etc. It means that the students' content was analyzed to examine words or phrases within a wide range of texts. Students' samples were analyzed to observe how they developed their skills through the use of ICT-based strategies.

With the above elements in mind, there was a systematic analysis in the 12 research cycles that emerged addressing the most important categories and subcategories.

## 5. Results

The results below are presented based on the didactic strategies supported by ICT to upgrade EFL students' level. Every didactic strategy was analyzed using action research cycles taking into account Elliot's (1991) research model. Additionally, in order to evaluate students' performance, students were appraised with the website [www.socrative.com](http://www.socrative.com), which enabled teachers to be more organized while grading pupils.

The aforementioned website showed how essential ICT-based strategies are becoming for effective EFL learning, where students' outcomes and grades could be nicely and safely kept online. 11th graders in 2014 and 2015 took the TOEFL iBT exam, I was their teacher, but I did not carry out didactic strategies supported by ICT with the groups in 2014 and 2015. Only in 2015, they were briefly implemented, but in 2016 the activities in this project were all based on ICT.

As outlined in the action plan, the methods employed for the classes in 2014 were not based on ICT. In 2015, ICT was briefly integrated, but most classes were face to face where I used the board and marker and followed the book unit by unit completing the workbook and the exercises proposed. Overall, there was not an in-depth study of ICT as there was in this project with the research participants.

Students' scores in 2014 and 2015 on TOEFL iBT were as follows:

Graphic 1. Students' score table on iBT exam in 2014 (participants who were not trained with ICT)

<b>TOEFL SCORES 11° (2014)</b>					
<b>STs</b>	<b>READING</b>	<b>LISTENING</b>	<b>SPEAKING</b>	<b>WRITING</b>	<b>TOTAL</b>
S1	30	29	24	27	110
S2	29	24	24	27	104
S3	24	29	22	25	100
S4	25	28	22	20	95
S5	27	24	19	23	93
S6	20	24	23	22	89
S7	20	21	23	25	89
S8	22	22	23	25	85
S9	22	22	20	21	85
S10	23	19	19	23	84
S11	20	21	26	16	83
S12	18	22	22	20	82
S13	19	22	19	20	80
S14	22	18	20	20	80
S15	17	16	22	22	77
S16	16	16	20	23	75
S17	16	18	19	17	70
S18	20	17	15	16	68
S19	16	16	20	16	68
S20	12	13	19	21	65
S21	13	10	22	18	63
S22	4	13	20	18	55
S23	8	11	14	18	51
<b>Av.</b>	<b>19.2609</b>	<b>19.7826</b>	<b>20.7391</b>	<b>21</b>	<b>80.4783</b>

Source: the author

Graphic 2. Students' score table on iBT exam in 2015 (participants briefly trained with ICT)

TOEFL SCORES 11° 2015						
	STs	READING	LISTENING	SPEAKING	WRITING	SCORE
1	S1	28	30	29	27	114
2	S2	29	30	26	28	113
3	S3	30	30	26	25	111
4	S4	30	29	23	27	109
5	S5	28	29	23	29	109
6	S6	27	28	28	25	108
7	S7	27	26	26	26	105
8	S8	25	23	27	27	102
9	S9	27	27	23	25	102
10	S10	25	27	26	24	102
11	S11	27	26	26	22	101
12	S12	23	25	23	27	98
13	S13	23	25	23	27	98
14	S14	27	25	19	26	97
15	S15	27	23	24	22	96
16	S16	23	24	24	25	96
17	S17	27	22	24	22	95
18	S18	24	27	20	24	95
19	S19	22	25	20	26	93
20	S20	25	23	23	22	93
21	S21	26	22	19	24	91
22	S22	23	22	22	24	91
23	S23	23	22	20	25	90
24	S24	25	18	22	25	90
25	S25	21	22	23	24	90
26	S26	19	28	23	19	89
27	S27	20	22	23	23	88
28	S28	23	19	22	22	86
29	S29	23	18	18	25	84
30	S30	19	22	22	21	84
31	S31	19	23	22	20	84
32	S32	16	21	23	22	82
33	S33	18	18	22	20	78
34	S34	19	16	20	22	77
	<b>AV.</b>	<b>24.06</b>	<b>24.03</b>	<b>23.06</b>	<b>24.18</b>	<b>95.32</b>

Source: the author

These scores showed the need and pertinence to keep increasing students' level in the four skills with the groups that followed. In 2016, the ICT-based strategies were planned and carried out in depth to compare both results: the scores from the groups who were trained by traditional methods and the group that was trained by the ICT-based strategies proposed in the action plan in this project.

The data analysis was given based on the four skills and the effects ICT had on pupils. First, speaking abilities were taken into account, then listening, writing and finally reading skills. The findings obtained throughout the whole process were as follows:

Table 2. Findings obtained in the workshops.

Speaking	Listening	Writing	Reading
Only one Mouse Click Away to speak with native English speakers.	Upgrading pronunciation with ICT specialized software.	Chatting Informally and naturally encourages realistic dialogue.	Electronic Thesauri increase Reading Comprehension
Recording student's voice and learning from it.	Learning from Films as an ICT-based and CALL strategy	The window of writing through ICT	Automated electronic voices upgrade reading comprehension
Upgrading pronunciation with ICT specialized software.	Learning Effectively from pieces of news through ICT	ICT benefits for TOEFL writing	Technology backup fosters TOEFL reading comprehension.

Source: the author.

## 5.1. Speaking Strategies supported by ICT

### 5.1.1. Finding No. 1. Only one Mouse Click Away to speak with native English speakers.

In the private school, where this research took place, the laboratory was quite appropriate and modern, where the participants could easily have access to Internet, multimedia, podcasts, etc. ICT enabled me as a researcher to employ a method where students could actually speak to native English speakers online. All the practitioners were given the Skype username of a native English speaker who agreed to interview the students in an informal way.



Every student had to set an appointment with the native English speaker via Skype. In order to help students, they were given a questionnaire to be much more prepared when being interviewed by their new e-pal. The native English speaker was given the questions he was going to be asked, so that he could be more involved. That helped to ease the tension of speaking another language and build rapport and a friendly atmosphere.

Based on what was stated above, the following action research cycle emerged:

**Plan:** An appointment with a native English speaker was set up via ICT. The questions were given to the interviewer and interviewee to facilitate students' speaking skills and understand English in a better way.

**Act:** I strongly advised students to be confident and competent with technology and CALL activities to have good eye-contact with the interviewer, good energy and motivation. Their language was graded (speed, amount of words) and also time limit. Some corrections were made while they rehearsed.

**Observe:** Most students had good eye-contact in the virtual interview, a few others felt a bit shy, but it seemed to be a challenge for all of them. They were monitored and supported, particularly the students who had worrying weaknesses. The interviewer was very friendly, had a nice pace and fine-tuned students' questions and checked the task accordingly. He even used idiomatic expressions such 'what's up?' 'How's it going?' 'how you doin'?' 'pretty good', etc.

**Reflect:** ICT-based interviews allowed students to be more motivated using modern means to speak to a native English speaker. Although there were technical problems, the interview was complete and it was important to let students communicate without interference, with good pace. Besides, students were anchored with the interview worksheet when setting up and the interview showed the real, informal language and not very formal and stiff English which students were used to.

ICT has brought enormous benefits to this English class by showing modern means to students where no matter the distance students can talk and learn about a native English speaker with only 'one mouse click away'. It provides evidence that ICT-based strategies could be useful for SLA acquisition as long as the activities are carefully planned and reflected upon as it was the case in this didactic strategy.

### **5.1.2. Finding No 2. Recording students' voices and learning from them.**

In this second strategy related to speaking workshops supported by ICT, there was a classroom activity. Seeing that most students had smart phones, students were asked to use the interview they had with the native English speakers and act it out in pairs, recording their own voices with their smart phones. Pupils were given the chance to correct their mistakes while they heard their interviews, which enabled them to easily and effectively express themselves. This is the cycle that emerged:

**Plan:** Seeing the good results of the virtual interview, it was relevant to use what students had learned and apply it into their educational context with their classmates, specifically recording their voices.

**Act:** I encouraged and checked pair work to give feedback on task. Students were monitored and I handed over to students immediately.

**Observe.** Students checked instructions fairly well, worked with their time limits, and their questions and answers were clearer than during the first activity. They used the idiomatic expressions such as 'what's up?' 'How's it going?', etc. This made the English language sound authentic, realistic and natural. Students were eager to repeat the recording and correct some pronunciation slips.

**Reflect:** students had a more effective interview since they had already practiced with the native speaker. Next time it could be the other way around, first with the classmates and then the virtual interview. By checking their recordings, some of them felt embarrassed, but students were motivated overall.

The role of the teacher emphasized the correction of their pronunciation mistakes and were advised not to make them again. Indeed, using mobile technology, like

cellphones, was very useful to correct one's mistakes and errors and learn from them. What was surprising was that some students instead of recording themselves, filmed themselves, which showed me they are very interested in modern technology.

### **5.1.3. Finding No 3. Upgrading pronunciation with ICT specialized software.**

In order to improve pronunciation and speaking skills in the laboratory, I used specialized software and several TOEFL applications where students were able to practice phonetic symbols with minimal pairs, practice their speaking capabilities and achieve a native-like pronunciation. In this software, students saw pictures of all kinds and every word was pronounced. They also heard questions and had to give quick answers:

**Plan:** It was important to use specialized software and apps to allow students to pronounce the words they saw on the screen and then repeat what they heard. TOEFL apps were used to let students get acquainted with TOEFL criteria.

**Act:** Students were given the computer-based tasks in the application. I graded the language when setting up to check instructions. I had useful drilling for the questions. Each student was monitored more closely when the participants were doing the speaking tasks the applications required them to do.

**Observe:** Students learned to use the specialized software and apps. All students downloaded their apps to their mobile phones and tablets eagerly. Most of them did what was requested and were able to repeat the tasks as many times as they wanted.

**Reflect:** It became relevant to reduce echoing the students. They needed to be more autonomous. There were pronunciation slips but there was repetition until they learned the pronunciation while seeing and hearing the words.

With the use of ICT-based strategies, teachers can clarify the language more effectively when giving feedback through the helpful apps and specialized software that technology offers EFL learners.

Overall ICT offered good standard of teaching, innovative methods like the TOEFL exercises and virtual interviews in the speaking skills. Students were sensible, and dedicated in sessions, although it was worrisome to hear their pronunciation mistakes, which they were encouraged to correct with the support of technology. The aforementioned ICT didactic strategies have offered this research user-friendly tools for lesson planning to increase the attractiveness of virtual tasks and therefore create favorable motivational conditions in this digital age.

The speaking workshops proved to be very effective to increase students' scores considerably compared to the groups who did not have the aforementioned strategies. These speaking strategies throughout the whole year showed the following results. Results of speaking TOEFL iBT scores in 2016:

Graphic 3. Students' speaking scores in 2016 on TOEFL iBT exams.

	STs	SPEAKING
1	S1	29
2	S2	27
3	S3	26
4	S4	23
5	S5	23
6	S6	24
7	S7	24
8	S8	23
9	S9	24
10	S10	22
11	S11	23
12	S12	24
13	S13	24
14	S14	26
15	S15	23
16	S16	23
17	S17	24
18	S18	23
19	S19	23
20	S20	24
21	S21	24
22	S22	23
23	S23	20
24	S24	22
25	S25	20
26	S26	23
27	S27	23
28	S28	17
29	S29	22
30	S30	19
	<b>AV.</b>	<b>23.17</b>

Source: the author.

As shown in the graphic, the 30 students scored high in the speaking ability after they were fully trained with virtual interviews and specialized software to improve their pronunciation and oral production. ICT was useful in upgrading students' level,

since they had easy access to native English speakers and with technology backup they were better equipped in the language regarding speaking abilities.

In the 2014 iBT scores as previously shown in regard to speaking, the students scored from 14 to 24 points (14 being the lowest and 24 the highest). The average in speaking abilities for the whole group was 20.7391. Now in this group in 2016, while conducting this research, the scores averaged 23.17 (with scores ranging from 19 to 29). This means that student scores increased more than 2.43 points, which is upgrading students' oral skills to a considerably higher level. That is quite remarkable for speaking abilities.

Overall, students showed more confidence, learned more idiomatic words and expressions and had specialized software based on ICT instead of the classes students had before. In 2015, the average was 23.06 and now it is 23.17 increasing the level considerably especially compared to the speaking results in 2014. The classes now included real life and virtual conversations with native English speakers. With only a mere mouse click away, foreigners could easily speak to students and facilitate their speaking process building rapport and talking about different topics.

The groups in 2014 and 2015 just had the teacher in the classroom as their interviewer, not an American in a virtual interview who was able to assist them in pronunciation and grammar more effectively via Skype or other sites. The specialized software also played a pivotal role in increasing students' scores where students trained their speaking abilities based on TOEFL iBT questions.

Moreover, students also had the opportunity to use applications from their mobile technologies such as smart phones and tablets, which were not used in the previous years and these changes with ICT-based strategies proved to be very effective in pupils' results.

## 5.2. Listening Strategies supported by ICT

### 5.2.1. Finding No 4: A profound call to use CALL in listening exercises

In the ICT exercises, most activities were CALL activities, where the students had the opportunity to practice their listening abilities while using their computers in the laboratory. Students were able to check five video clips in an electronic folder. The clips contained dialogue pieces with closed captions, which enabled students to understand more effectively. The clips were colorful, animated and modern where students were able to see real-life conversations as well as short conferences on a topic similar to TOEFL iBT exercises. The research cycle emerged as follows:

**Plan:** The most suitable video clips for students were selected from Youtube and other sources, so that they could carefully listen to how native English speakers talk.

**Act:** Students were assisted in the whole process, where I monitored them on an individual basis, checking their understanding of the video clips.

**Observe:** Students were on task and elicited well. They were good humored and motivated watching the clips and answering the multiple choice questions. A few students looked bored, which showed limitations in students' learning styles.

**Reflect:** Overall, students seemed to be genuinely interested in the listening exercises. Most of them actually enjoyed the vivid images presented and when they made mistakes, they repeated, rewound the video until they got the correct answer. It brought awareness to the fact that students should pay close attention to every single detail in native-like pronunciation and infer properly when it is difficult to understand.

Taking action to overcome the most common aspects in EFL is necessary to achieve success in L2 learning. In this particular didactic strategy, pupils were encouraged to pay close attention to the online conversations and were allowed to rewind and

change the wrong answers. Even the students who made mistakes, tried hard until they scored positively in all of the listening tasks.

The aforementioned didactic strategy supported by ICT enabled me to propose listening activities effectively. In this modern era, students are constantly using technological devices where they can easily understand images. Besides that, students generally learn better with audiovisual projects and ICT offers powerful pedagogic tools that ensure the students learn the material well. As Pourhossein (2012) notes, students prefer audiovisual learning style, and certainly in this particular strategy, pupils were engaged in the video clips supported by CALL.

### **5.2.2. Finding No 5. Learning from Films as an ICT-based and CALL strategy**

Based on the short video clips students watched and the effectiveness of their answers with CALL strategies, students requested to have more classes in the laboratory, which was a computer mediated environment. Pupils also requested to watch a film in the computers with their own headphones. Based on how useful audiovisual tools were, films through CALL were considered for this specific didactic strategy.

Watching films in English has improved EFL learners' abilities, especially listening. This didactic strategy is based on the fact that Ramirez & Muñoz (1995) provided evidence of how watching films can improve people's English level considerably. In addition to that, Amaya - Anderson (2012) Ph.D. thesis also proved that when college students watched movies in English, they did not only increase their motivation and listening skills, but also their critical thinking due to all the relevant issues that arose from cinema. The cycle was as follows:

**Plan:** The movie that was selected to watch in common agreement was 'The box' (2009,) but instead of watching the film on a big screen, every student had their own computer to watch it. Hence students were supported by ICT and CALL in a straightforward manner. The movie had subtitles for the hearing impaired, but in this case for English learners.

**Act:** Students were supported and guided when necessary. They were told to write unknown vocabulary as well as idiomatic expressions used by the actors in the movie. They had the opportunity to rewind the film when the scene was not clear or when the conversations in English were not fully understood.

**Observe:** Most students were amused and entertained watching the film with their own computer, headphones and lab equipment. They wrote down the new words they learned on their notebooks.

**Reflect:** Many new idioms, words, syntactic mechanisms, and expressions were learned as students enjoyed watching the film. This strategy boosted their vocabulary as they looked for synonyms when they listened to the actors' conversations and were involved in the whole plot of the film.

The whole didactic strategy supported by ICT was completely student-centered where pupils listened to the words or sentences they did not know before and actually found synonyms and the meaning for them. Students were also autonomous with their own computers and used their equipment as requested.

The strategy supported the previous authors' argument that films hold great potential as mediating tools for increased listening skills and vocabulary development. In this case, individual PC's for every single student provided pupils with ICT equipment, in which they were more focused than watching the film in a group with only one screen.

### **5.2.3. Finding No.6. Learning Effectively from Pieces of News through ICT**

Since TOEFL iBT focuses on listening exercises based on conferences/lectures and also pieces of news, it was important to select an ICT-based strategy where the participants could practice listening exercises similar to TOEFL iBT while sitting at the computer.

When students sat at their respective place, the participants were given an online folder where they could open it and see their assignments. They had to watch videos which were pieces of news. After watching them, there were several questions about what students heard. Students had the benefit of repeating the video as many times as they wanted and had support from the teacher:



**Plan:** Students were given the online folder with the planned lesson. The news pieces had subtitles, which are meant to ease the listening process for students.

**Act:** Instead of getting stuck at the board explaining the listening tasks, I elicited, checked and then handed over to the students.

**Observe:** Students repeated the news several times, but they were encouraged to do it few times. Most of the vocabulary was indeed quite complex and too fast for a non-native to master, but subtitles did help a lot to ensure linguistic development while listening.

**Reflect:** ICT helps students to be more prepared with TOEFL iBT exercises, where there is constant use of technology. In these exercises, students were more qualified and knew what to expect when taking the TOEFL iBT exam, which in the school is mandatory to be considered bilingual. When students were on task, I did not interfere to allow the listening activities to be completely student-centered, since participants needed full concentration.

In listening workshops supported by ICT, it is important for students to get acquainted with the TOEFL iBT structures and questions. Teachers need to set up clearly, give time limit, group students well, encourage group work, so that students can be on the task in the first three minutes while being in the laboratory. Overall, news pieces/clips helped students to be aware of the complexities of listening where news anchors spoke in the most natural and fastest way possible. It showed students how serious one must be when taking the TOEFL iBT tests and that full concentration is absolutely necessary.

In the listening TOEFL iBT scores, these were the results after the listening strategies supported by ICT were implemented:

Graphic 4. Students' listening scores in 2016 on TOEFL iBT exams.

	STs	LISTENING
1	S1	30
2	S2	30
3	S3	30
4	S4	30
5	S5	28
6	S6	29
7	S7	28
8	S8	27
9	S9	25
10	S10	29
11	S11	28
12	S12	25
13	S13	26
14	S14	24
15	S15	22
16	S16	24
17	S17	26
18	S18	24
19	S19	23
20	S20	25
21	S21	25
22	S22	21
23	S23	23
24	S24	23
25	S25	19
26	S26	22
27	S27	21
28	S28	21
29	S29	18
30	S30	18
	<b>AV.</b>	<b>24.80</b>

Source: the author

As seen above, most of the students scored high in the listening exercises when they were fully trained with ICT. It can be observed that compared to the group who had no ICT based strategies, students showed positive results. The total average of the results of all students was 24.80 which is very high, four students even got 30 points, the highest possible score in listening. That proved how much students increased their proficiency in this skill.

The group in 2014 scored an average of 19.7826 in the listening ability, which shows that with ICT-based strategies, students' scores increased more than 5 points. In comparison to the group in 2015, there was also improvement since students scored 24.03. It is interesting to note that in 2014 most listening exercises did not take place in the laboratory compared to 2015 and 2016. They only listened to a tape recorder. In this research, students had their own video clips, electronic folders and specialized software with applications and mobile technology that supported their learning skills.

Based on the scores, students were able to imply the meaning of the recordings effectively, understanding a variety of idioms and colloquial and natural expressions. In general terms, pupils also understood the main idea or purpose and details of conferences, lectures or the information shown on the listening exams. The scores show that the planned workshops and the well-equipped laboratory gave participants the preparation and proper training they needed.

### **5.3. Writing strategies supported by ICT**

#### **5.3.1. Finding No 7: Chatting informally and naturally encourages realistic dialogue.**

In order to have a more relaxed environment and make good use of the current technology such as smart phones and tablets, students were asked to chat using 'WhatsApp' or 'Facebook'. Students were encouraged to use informal words such as 'lol', 'how u doin' 'cuz'. This informal kind of dialogue is commonly used while chatting, so it was relevant to let students know that besides all the formalities of the language, it was important to use language more naturally. The didactic strategy was as follows:

**Plan:** Due to the current and constant use of smart phones, students were asked to chat for 20 minutes in English. They were encouraged to be informal, but realistic in their language.

**Act:** I monitored every student as they were using their phones and practicing writing in a foreign language as much as possible.

**Observe:** It was clear that students were highly motivated and enthusiastic about using their smart phones. They showed me their conversations and also used the words and expressions they learned in the previous workshops, which increased their fluency.

**Reflect:** With this didactic strategy, participants were able to use their previous knowledge: the questions they had with the interviewer in the speaking and listening workshops. Besides that, they were able to communicate freely without any pressure.

ICT has changed what was standard in English teaching and learning. Now students can easily edit themselves through 'www.grammarly.com' platforms and their phone apps and have more enthusiastic ways of writing English in an informal way. These didactic strategies wouldn't have been possible before. For that reason, ICT should be constantly used and managed effectively.

This didactic strategy supported by ICT has shown that electronic language is an epistemological combination of formal and informal, slang terms, abbreviations and highly-specialized jargon. That is Ybarra's (2004) main concern showing how these online conversations affect second language acquisition as a whole and concludes that electronic communication offers a wide variety of linguistic patterns that are useful to analyze.

The interaction with other classmates maximized opportunities for learners to use the target language in a written way for meaningful activities. There was emphasis on meaning (messages they were creating) rather than form (correctness of language and language structure).

Students were expected to have contact time with language through e-mails, WhatsApp, Facebook and try to have a fluent command of the language and ease of electronic expression. Learners did their best to use the language creatively and spontaneously through social media. They made mistakes, albeit constant correction was unnecessary and even counter-productive, it was discreet and helpful for the pupils.

### **5.3.2. Finding No 8. The window of writing through ICT**

In the laboratory, students sat at their computers and in their electronic assignments, they observed a window. They had to imagine and write what they saw when they opened that window and create a short story. This activity was based on Vecino's (2007) research, where she reports that creative writing fosters pleasure to write what students imagine and want to write without any pressure.

This didactic strategy was also based on Amado's (2009) and Avila's (2015) research projects in which the authors showed students the picture of a Pegasus and had to create their own stories and participate in creative writing circles. This activity was an opportunity to go beyond the boundaries of academic writing, where students could express themselves freely and learn English accurately:

**Plan:** Participants saw the picture of a window while sitting at their computer. They had to write a short story or whatever they wanted once they opened that window. ICT enabled students to see colorful and appealing pictures throughout the strategy.

**Act:** Students were given feedback on their pieces.

**Observe:** Students indeed wrote more than expected. There were interesting stories where students wrote what they felt like.

**Reflect:** Creative writing supported by ICT helped students to develop their writing skills. In this case pupils were committed to their written pieces and engaged in the whole process. Students were given feedback more on the content of the pieces rather than grammar.

ICT helped students to have vivid images and colorful pictures online based on which they they were able to create their own stories. Students were corrected based on their content rather than their grammar. The idea to evaluate their content rather than their grammar was taken from Al Alami's (2012) Ph.D thesis. He encouraged fiction writing to achieve higher proficiency in English writing. Indeed, the use of creative writing with ICT technologies can provide students with the benefits they need while writing.

In addition to being motivated to write, students were boosting their vocabulary being inspired in their pieces. One of the students wrote: *'Once I opened the window , I felt free as a bird, from school and its arbitrariness'* This provided evidence that students can be inspired and boost their vocabulary in L2 learning. Tellingly, students had the opportunity to check translators, electronic dictionaries and the Internet to write more

appropriately. That is why the constant use of CALL provides students with effective methods to employ and learn on their own.

One of the abilities that was developed in this didactic strategy was “vocabulary”, There were several new words such as 'maroon' 'paradise' 'freedom' 'slingshot' 'bruised' 'swamp', 'beat up' among others. These are just some of the words that could evidence how much vocabulary they learned when using creative writing with ICT. This exercise allowed students to observe words and expressions and be prepared to improve aspects such as coherence and cohesion when they wrote their stories freely.

In all of the writing strategies, it was easy to observe that students tried to do their best; however, the activity that showed the best results was the creative writing exercise, in which students had free topics/stories to write and speak about. It was found that students wrote more than what was required. Most students, around 90% of them wrote freely without any pressure and let the teacher know what they wanted to say.

The aforementioned strategy is quite relevant because as outlined earlier, I focused on students' content/stories rather than students' grammar and lexis. As a teacher, it was important to make students feel that their texts did matter and that it was not only about correcting grammar or lexis mistakes. For example, one of the students wrote about his favorite video game while opening the window. It was interesting to see he knew a great deal about it and was fluent writing it. It was a language-rich task, where they could write their own stories to tell.

At first, as an English teacher, I didn't really correct students, but built rapport with them asking them questions about the content of their text. After that, I recognized some grammar, syntactic mistakes and described the mistake to the students and explained the appropriate use. One of the main mistakes one of the participants made was the fact that he wrote: ' the video game is very entertained,' I made the student change that to 'entertaining' after I analyzed his story. I followed Castillejos' four steps, where I observed the error sample, the error was recognized, described and then properly explained to the student.

In most of the didactic strategies, the participants learned unknown words, especially in the free writing exercises. As described above, one of the students learned the meaning of both 'entertaining' and 'entertained'. There were many new/unknown words throughout the workshops. It showed me that the more students were able to select their own topic, the more engaged they were in the whole writing process, especially seeing the advantages ICT offered EFL learners. The words were recognized, described and then explained as Corder (1967) suggests in his theory of error correction.

### 5.3.3. Finding No. 9. ICT benefits for TOEFL writing

Once students had creative writing exercises, in the laboratory it was important to continue with several applications that helped learners to enhance their writing in EFL. Students were shown 15 apps to practice TOEFL iBT writing.

In the writing exercises, students were given a short lecture and they had to write about it or write short essays about a particular topic. The applications showed them particular topics such as aquatic animals, history of whales, etc. Based on those topics students were told to paraphrase carefully with synonyms and words they had learned before.

**Plan:** Students used apps to work on their TOEFL iBT-like writing exercises

**Act:** Students were assisted along the way with the limitations they had in writing.

**Observe:** Pupils used the apps effectively. Many of them were eager to ask questions about new vocabulary and used their electronic dictionary and internet as well.

**Reflect:** Students were getting acquainted with the TOEFL iBT system through ICT, since it is a fundamental need in the school. It was important to use as many apps as teachers could download to practice writing. There were still many mistakes in writing, for this reason constant practice with the applications was needed

In most of the writing apps, students had the opportunity to see the exercises that were set up clearly and effectively. Participants were able to see the complexities of academic writing and compared this to creative writing; however, they were becoming familiar with all these applications and exercises and showed good results on TOEFL iBT exams.

The results of writing scores after the ICT-based workshops can be seen as follows:

Graphic 5. Students' writing scores in 2016 on TOEFL iBT exams.

	STs	WRITING
1	S1	27
2	S2	29
3	S3	29
4	S4	29
5	S5	30
6	S6	24
7	S7	23
8	S8	26
9	S9	28
10	S10	25
11	S11	24
12	S12	27
13	S13	24
14	S14	25
15	S15	26
16	S16	24
17	S17	27
18	S18	25
19	S19	21
20	S20	23
21	S21	20
22	S22	21
23	S23	22
24	S24	20
25	S25	25
26	S26	21
27	S27	21
28	S28	20
29	S29	21
30	S30	22
	<b>AV.</b>	<b>24.30</b>

Source: the author.

As shown above, students scored a total of 24.30 on the TOEFL iBT writing section which is very high in writing skills. In comparison to the previous groups that scored 21 points in 2014 and 24.18 in 2015, we can see an increase of more than 3 points in the group in 2016, where students were fully trained with ICT-based strategies. This increase shows remarkable progress; however teachers should strive to achieve higher scores, so creative writing with ICT needs to be better developed.

Using creative writing supported by ICT encouraged students to write their pieces being more analytical and creative in their contents without any pressure. Student had modern tools and images that provided exciting writing approaches with technology backup. Students' audiovisual abilities helped them achieve higher scores when they wrote their own texts. ICT helped them to correct themselves, manage their time limits with the programs online and also with the teacher's assistance.



It is impressive to see that all of the scores were above 20 which shows that the writing skills benefited greatly from the ICT workshops that were proposed along the process. Test takers at the aforementioned level were able to use suffixes and other morphemes in crafting appropriate words. Based on the scores in 2016, students were more qualified to modify nouns, relative clauses and deal with new vocabulary using the right variations on basic grammatical rules.

#### **5.4. Reading strategies supported by ICT**

##### **5.4.1. Finding No 10. Electronic thesauri increase reading comprehension**

As TOEFL iBT exercises contain many exercises, in which test takers have to look for synonyms, students sat at their computer and were given reading assignments. In the reading assignments they had to underline every unknown word and look it up in the electronic thesauri.

**Plan:** Students were given texts based on TOEFL iBT and were told to practice only synonyms.

**Act:** I monitored and guided practitioners to use the electronic thesaurus correctly. Students were given praise when necessary and it was important to be engaged with them while monitoring.

**Observe:** Students used the electronic thesauri well and were encouraged to learn as many words as possible.

**Reflect:** Finding synonyms while reading texts is essential to get a better grade on the TOEFL iBT exam. Many questions were based on finding a synonym for the words they see in the texts to read. It was important to propose this didactic strategy that enabled students to quickly look up synonyms through their electronic thesauri and that showed enhancement in reading comprehension.

#### 5.4.2. Finding No 11. Automated electronic voices upgrade reading comprehension

One of the greatest advances of technology is the possibility to upgrade reading comprehension easily and effectively through automated voices that read out loud for the students. For that reason, ICT provided learners with very appealing audio books where they could read and also listen at the same time. These audio books were based on American literature where the English language is rich with idioms, polysemous words, syntactic mechanisms, etc.

Students had the opportunity to have complete classes to read and listen to an automated voice where they could easily hear the pronunciation of a native English speaker. The cycle for this strategy was as follows:

**Plan:** Students were given audio books with which they could sit and listen to what was being read.

**Act:** Students were told to be very careful when reading and using the headphones. I monitored every student and asked them some questions about the audio books.

**Observe:** Some students were engaged with the audiobooks, while others unfortunately looked bored. The texts had images for them to follow and it was important to know that sometimes students got tired of looking at a computer screen.

**Reflect:** This activity had limitations since not all pupils were engaged, some seemed tired and bored looking at the screen; however, others were quite committed to doing all the proposed tasks.

ICT has provided enormous benefits in the class. The automated voice was indeed a challenge to take on. Reading and hearing the text at the same time was a good didactic strategy in EFL settings; however, it was necessary to understand that some

students got tired easily and were overwhelmed with the constant use of technology; however it took time, practice and patience.

Audio books do not only help students to achieve better/higher reading skills but also listening skills; however, one must know where and when to use audiobooks. Based on the reflections, for the next strategies it was important to carry out lab activities with shorter texts.

#### **5.4.3. Finding No 12. Technology back-up fosters TOEFL reading comprehension.**

Based on finding No 11 and seeing that students were a bit tired, I changed the strategy to allow students to select their own texts and read them electronically. While pupils were in the lab, they were told to look for texts and select one story to read based on what they wished to read.

**Plan:** Students were more motivated selecting their texts to read and using an automated voice for them.

**Act:** I changed the strategy based on the previous audio books and allowed them to create more favorable motivational conditions where they could select their own stories. In addition, students were told to answer the multiple choice questions based on the TOEFL applications and select the reading they wanted

**Observe:** Students were able to read and listen to short stories or read academic texts where they had questions at the end of the task. They attempted to answer the questions to the best of their abilities.

**Reflect:** Although academic texts were hard to read, the automated voice eased the process and also improved listening in reading comprehension. Although the automated voice was a didactic aid, students knew that when taking the test they

needed to be much more focused when they had to answer under pressure.

The results of the reading scores on the TOEFL iBT exams after the above-mentioned tasks can be seen as follows:

Graphic 6. Students' reading scores in 2016 on TOEFL iBT exams.

	STs	READING
1	S1	30
2	S2	29
3	S3	29
4	S4	29
5	S5	30
6	S6	29
7	S7	30
8	S8	28
9	S9	26
10	S10	24
11	S11	25
12	S12	24
13	S13	26
14	S14	24
15	S15	27
16	S16	27
17	S17	20
18	S18	24
19	S19	29
20	S20	22
21	S21	24
22	S22	24
23	S23	23
24	S24	22
25	S25	22
26	S26	20
27	S27	19
28	S28	22
29	S29	19
30	S30	16
	<b>AV.</b>	<b>24.77</b>

Source: the author

Students got an excellent average of 24.77 which shows that the proposed activities in regard to reading skills were very beneficial. These results also showed how students are improving compared to the previous groups who scored 19.06 and 24.06 respectively.

As outlined above, most students were well prepared to read and increased their scores. Most of the questions included finding synonyms, word choice, the essence of the text, which were carefully studied in the laboratory. With the audio books and

applications downloaded from the mobile technologies, students were much more prepared to confront any reading challenge.

Three students got the highest score (30 points) while four other students got 29, which means they have achieved the highest proficiency in reading. Although the other students' scores are lower, they also scored high. In 2014, it can be seen that only one student got 30 and another 29. While in 2015 only two got 30 points. It can be seen that after taking action with ICT to solve students' limitations, 6 students got a C2 level in this area which is quite remarkable.

By analyzing the data from the scores, it can be seen that most students were able to complete the reading tasks successfully after being trained with several strategies supported by ICT. Students who scored from 20 to 30 were capable of understanding complex descriptions and narration in well-marked academic texts, following sentence-level comparisons to understand the meaning conveyed in the texts.

Since the data analysis focused on each skill, it is important to show the whole table with all the TOEFL iBT scores on the four skills for the final analysis as shown below:

Graphic 7. Students' complete score table on iBT exam in 2016. (Participants fully trained with ICT-based strategies)

TOEFL SCORES 11° 2016						
STs	READING	LISTENING	SPEAKING	WRITING	SCORE	
1 S1	30	30	29	27	116	
2 S2	29	30	27	29	115	
3 S3	29	30	26	29	114	
4 S4	29	30	23	29	111	
5 S5	30	28	23	30	111	
6 S6	29	29	24	24	106	
7 S7	30	28	24	23	105	
8 S8	28	27	23	26	104	
9 S9	26	25	24	28	103	
10 S10	24	29	22	25	100	
11 S11	25	28	23	24	100	
12 S12	24	25	24	27	100	
13 S13	26	26	24	24	100	
14 S14	24	24	26	25	99	
15 S15	27	22	23	26	98	
16 S16	27	24	23	24	98	
17 S17	20	26	24	27	97	
18 S18	24	24	23	25	96	
19 S19	29	23	23	21	96	
20 S20	22	25	24	23	94	
21 S21	24	25	24	20	93	
22 S22	24	21	23	21	89	
23 S23	23	23	20	22	88	
24 S24	22	23	22	20	87	
25 S25	22	19	20	25	86	
26 S26	20	22	23	21	86	
27 S27	19	21	23	21	84	
28 S28	22	21	17	20	80	
29 S29	19	18	22	21	80	
30 S30	16	18	19	22	75	
<b>AV.</b>	<b>24.77</b>	<b>24.80</b>	<b>23.17</b>	<b>24.30</b>	<b>97.03</b>	

Source: the author.

Based on the complete scores above, I, as a praxis oriented teacher, took action to solve the most common obstacles students were confronted with. At the end of the academic year, I was able to compare the participants' results on TOEFL iBT who were trained by ICT to those who were in the previous years trained by traditional methods. The participants in this research indeed showed higher scores in all of the abilities after all the ICT strategies were implemented.

For example, the complete TOEFL iBT score chart provides evidence that there was improvement in the four skills compared to the previous scores as seen when the data was analyzed. We can see improvement from the first students S1 to the last one S30. Of course the lowest scores were achieved by the students who had trouble using the applications and mobile technologies, but overall, the four skills improved considerably compared to the groups who did not have ICT-based techniques.

Students improved more than 17 points overall in all of the skills comparing the 2016 chart to the charts in 2014 and 2015. This shows that the equipment in the lab and all the online activities helped students acquire insights into the TOEFL iBT, while the previous groups did not have the opportunity to participate in the ICT workshops. As mentioned earlier, only the group in 2015 was briefly trained by ICT and the whole ICT project was carried out in 2016 with the results above.

It was essential to see that there was indeed improvement and that the didactic strategies that were reflected upon contributed to better scoring; however, ICT may have limitations like not knowing how to use it correctly or effectively or getting tired eventually, but in most of the findings the limitations were few and students were able to use a modern means to achieve success in the foreign language to optimize their four skills, as shown in the significant outcomes.

The aforementioned iBT scores compared to the previous groups who were not taught with ICT highlight the crucial role that ICT-based strategies play when teaching English, guiding pupils and amplifying their knowledge in the four skills.

## 6. Conclusions

There is a substantial body of experimental, international and perceptive research from the fields of second language acquisition exploring how ICT has been a positive means to achieve success in English language learning. As shown in the literature review, most research studies proved that ICT was a very effective teaching tool for EFL language learners; however most of these projects were conducted abroad in countries such as Canada, USA, United Kingdom, etc. The need to implement similar strategies became vital in a Colombian educational setting, where bilingual education across the nation is the priority of the Ministry of Education.

This project was paramount in optimizing students' learning processes as shown in their satisfactory scores on the TOEFL at the end of the year after all the ICT-based strategies were carried out with the participants. The ICT-based tasks need to be examined and expanded across the whole country, so that educators can gain some sense of how integrate technological programs into assisting pupils while raising their standards of performance.

Carrying out studies like this project heightens the urgent need of research in the use of computer and mobile technologies, which have brought mankind enormous benefits. In the whole study, ICT was very beneficial for the enhancement of a second language in the four skills: speaking, listening, writing and reading. These skills were studied and structured in depth throughout, where there were twelve significant findings that offered insights to open discussion about modern technology and second language acquisition.

The twelve findings emerged from planning all the sessions that were conducted in detail and in an orderly manner based on every skill (three findings each.) In the speaking findings three categories emerged as the data was analyzed that showed that with only one mouse click away, practitioners were able to speak to foreigners and enrich their speaking skills with virtual interviews. They also recorded themselves through digital resources that offered mediating educational tools for building rapport and creating motivational conditions.

In the listening workshops supported by ICT, participants were further aided by specialized software and smart phone/tablets applications where learners could practice TOEFL exercises in a modern way with films, and vivid and appealing video clips. These tasks were carried out through CALL, which increased interest in the listening tasks and the teacher could manage the classes in the laboratory with more control, timing, pace and motivation.

In the final writing and reading sessions supported by ICT, students were trained in these abilities with creative writing and academic writing and with TOEFL applications that could be easily downloaded online. Most students were eager to share their passion for what they wanted to write and acted in a computer mediated environment where they could effectively have access to electronic dictionaries and thesauri as well as correct themselves with technological back-up and the teachers' help.

In spite of limitations such as students being overwhelmed with the electronic applications, being tired of watching a screen, or technical problems, these ICT-based strategies should be incorporated into EFL learning settings. These methods of teaching fostered EFL improvement in different forms which was a key component to appraise students' progress in the foreign language.

Exploring the appropriate strategies related to ICT and also its limitations can assist educationists in taking action to solve the most common problems in bilingual education. The strength of the study is that these didactic techniques increase students' TOEFL iBT scores, which improves their quality of life considerably in this modern era and digital age that neither teachers nor students had before.

### **Pedagogical Implications and Suggestions for Further Research.**

Based on the twelve findings from the whole study and the limitations presented above, the following implications and suggestions for further research should be taken into consideration:



Graduate-level projects need to strive to make positive contributions to the English language learning fields where researchers can create new knowledge to support students. Creating new research models that are important for language teachers and policy makers involved in educational endeavors should be taken into account for the betterment of the country.

English language projects for second language acquisition that are feasible, pertinent and theoretically sound should be disseminated to a wider audience to enrich discussions and promote life-long learning. Hence, this project should be made known to the Ministry of Education, which prioritizes Bilingualism after the low levels achieved in public and private schools.

ICT should be researched more extensively in the school where this project was conducted. The strategies were only carried out with 11th graders, but the other students in lower grades can benefit greatly if they undertake this technological process when they start high school. These methods can increase the attractiveness of language teaching in other settings, not only in 11th grade. Consequently this whole analysis of ICT in various contexts for diverse participants provides exciting new perspectives for educationists and policy makers.

The scholarly findings of the project need to be shared with educationists, students and the like to duplicate their insights in their respective theories and projects. By disseminating the results of this study, it is expected to encourage researchers to do projects that are compelling to contribute to the nation, which is greatly needed at present.

### **Final Remark**

The action research conducted for this study in the bilingual school made clear how important a well-equipped laboratory is for implementing ICT-based strategies. Most of the results were positive. However, the needs of public schools may be harder to meet, because they may not have such easy access to the latest technology. Despite their limitations, awareness is being raised to adopt current policies to provide these schools with superior technology, such as online face-to-face communication, computer-mediated labs, user-friendly software, and more. These

are a good step forward toward achieving higher English proficiency levels and developing the bilingual capability of the nation as a whole.

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