



UNIVERSIDAD DE QUINTANA ROO

División de Ciencias Políticas y Humanidades

The effects of using ICT resources for developing digital competences in ESL elementary students

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Para obtener el grado de:

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Presentan:

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Directora:

Mtra. María Isabel Hernández Romero

Chetumal, Quintana Roo, México, agosto de 2015





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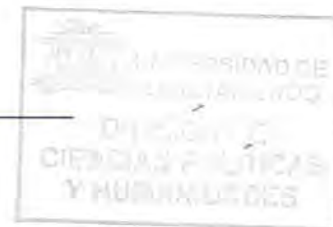
LICENCIADA EN LENGUA INGLESA

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Abstract

This is a pre-experimental study that aims to examine the effects of using ICT resources in children from an elementary school in order to develop their digital competences. The participants were 33 students who belong to one group of fourth grade. This group was exposed to a five-week treatment for developing digital competences (based on the framework for Developing and Understanding Digital Competence in Europe, 2013) and using ICT resources to learn English. The research instruments are: a) a semi-structured questionnaire to know the children's opinions about ICT resources, b) a pre-test and post-test in order to and to diagnose their digital competences and their performance before the treatment c) a post-test in order to determine children's digital competence after the treatment. Also, an interview to the teacher was conducted to find out how she uses ICT resources with her students. The data analysis was made with SPSS program version 21 in order to know the statistical results and confirm the hypothesis. The results showed that students improved their digital competences with the use of ICT resources while they were learning a second language. However, it is important to mention that some digital competences such as searching for information and multimedia management had a higher means score than creating content, collaborative work and sharing content. Students were very happy and interested in using the computers for their English class; they had a positive attitude towards the use of these resources. Nevertheless, it is required to work more in the development of digital competences with the use of ICT resources.

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CHAPTER 1 INTRODUCTION

Nowadays the use and integration of the Information and Communication Technologies (ICT) resources in education is playing a very important role in people live. Technology is developing every day and we increase our life opportunities by developing new competences such as the ability to build our own knowledge, transmitting information and interacting with other people. Currently, it is normally that people around the world are aware of the use of technology and internet since we are living a new era where the technology is frequently used in many countries such as Korea, Sweden, Denmark, Iceland, and Finland. Nevertheless, many people are unaware of using internet and new programs. For that reason, it is important to teach people to use technology accurately. As Castañeda, Carrillo & Zumico (2013) mentioned schools are an essential place to develop and include educational practices technology. Schools are the most adequate places where people can learn the benefits of using it properly, because students are commonly exposed to the technology since they were kids.

In the following section the background, statement of the problem, rationale, objectives and the research questions of this study will be described.

1.1 Background

According to Instituto Nacional de Estadística y Geografía (INEGI) (2011) and the National Development Plan (2013) is essential to implement technological resources in basic education to create a productive society. Learning how to use ICT resources properly is useful and advantageous for students because it could help them to identify the most adequate places to search for information and developing digital competences.

All in all, integrating ICT resources and digital competences play a very important role to educative and business purposes. It benefits students to develop new competences such as building knowledge, interact in groups to share information, ability to use ICT resources to academic, work, and entertainment purposes and the ability to criticize these resources.

1.2 Statement of the problem

The use of technology is a more equitable resource than a luxury. Some people are familiarized in using a computer, a cellphone or and IPad; however, there are people who do not have access to these kinds of resources. The lack of knowledge about using ICT resources and digital competences properly decrease the opportunity to create a digital culture in education. Samuel and Bakar (2006) mentioned that the utilization and integration of ICT resources can indeed assist students in acquiring English Language competency as well as enhance the quality of their learning experience. Moreover, Carmen et al., (2003) said that integrating ICT resources in teaching can lead to increase students' learning competences and increase opportunities for communication. In short, it is important to create consciousness about technology in education.

1.3 Rationale

This study will offer useful results for teachers, students and educational authorities. On one hand, teachers will identify the advantages of using technology inside the classroom and the positive effects it could have with elementary students. On the other hand, students will acquire new competences such as building knowledge; interact in groups to share information, ability to use ICT resources to academic, work and entertainment purposes, and the ability to criticize these resources. It will help them to use the technology properly while they are studying. Moreover, the

educational authorities could use the information in order to improve the use of the Information and Communication Technologies (ICT) resources in education.

1.4 Objective(s)

The main purpose of this research is to analyze the effects that students from an elementary school demonstrate when using ICT resources for educational purposes to learn English. Moreover, the goal of this research is to determine the digital competences that students develop with these resources.

1.5 Research question(s) or hypotheses

According to the purpose of this study the following hypothesis and questions are formulated:

Hypothesis

Students will improve the development of the digital competences through being systematically trained in the use of ICT resources in an EFL context.

Research Questions

- What digital competences do children develop after the treatment using ICT resources?
- Why do students use ICT resources for?
- How often do children use ICT resources for educational purposes?
- What are students' attitudes towards the use of ICT resources?
- What are students' attitudes to learning English?
- What is the reaction of the group about the use of ICT resources for educational purposes?

- What does teacher do with ICT resources for her English class?
- What does teacher express about students' digital competences in English learning process?

1.6 Relevance of the study

The relevance of this study at educational levels lays on the importance of implementing ICT resources and developing digital competences for students. According to INEGI (2011) it is fundamental to raise immediate actions to strengthen the learning-teaching process thorough ICT resources. The Secretaria de Educación Publica (2013) stated the possibility of creating learning environments by using ICT in order to develop data analysis, problems of interpretation, oral and written expression. When teacher uses technology in his activities; he promotes the development of digital competences in both teacher and students. The Development National Plan points out that Mexico needs to provide its population the highest platform to development competences. On contrary to past generations, young people have access to a wide variety of information; however, the lack of resources and abilities to use it effectively makes students incapable to employ the information in a proper way.

"...It is necessary to increase the level of public and private investment in science and technology and its effectiveness. The challenge is to make Mexico a dynamic and strengthened society." (p. 17).

ICT resources and digital competences have become necessary in society. This is why its integration in educational field is vital for teachers and students.

CHAPTER 2 REVIEW OF LITERATURE

In this section of the document are presented previous studies about the ICT resources and its integration in English teaching. Besides that, some studies were collected about students' digital competences in education. Literature review was essential to know the informational background from different authors in order to realize the important data and what investigations fields need to be considered for futures studies.

2.1 Previous studies about ICT resources in English teaching

Jaramillo (2003) did a qualitative study which documents the use of ICT in two classrooms of third-grade students of primary school. The purpose of this study was to realize in what way the developing of abilities and knowledge are promoted based on the informational and computer literacy. It integrated the use of ICT with two different methodologies in order to look for students' performance related with the informational and computer literacy. These different methodologies were the integration of ICT to support other subjects and the project case. The data was collected through non-participative observations in classes, quizzes, and interviews to students. The results of the investigation suggest that students use the resources to transmit knowledge, bolster learning, and developing skills to use the computer. The researcher did not found differences in the activities on both methodologies. However, in the project case, the information access is easier than in supporting other subjects.

Ramirez & Alonzo (2007) made a quasi-experimental research study to examine the effect of using digital stories to improve listening comprehension with Spanish young learners of English. This study was made in six state schools in Madrid and the participants were 220 children 6-year- old Spanish learner. A pre and posttest were used to recollect the date about the

use of internet and the effect in listening comprehension in English as a foreign language. The study lasted 22 weeks in the second semester of the academic year (2005, January to June). All the schools that participated had similar social and cultural characteristics. Two EFL sessions of 45 minutes a week were given to students according to the Spanish General Law of Education. The results showed that there was an improvement in the listening comprehension skills; however, it was necessary to develop new materials and resources.

Hernandez & Marin (2008) carried out a study about the use of information and communication technology among ELT students from the University of Quintana Roo. The participants were 232 students enrolled in the English Teaching undergraduate program. This study aimed to determine a) if students used ICT tools for academic purposes, b) what ICT tools were used for information management, 3) how often these ICT tools were used for students and 4) the functions of ICT used for information management. The data was analyzed through a 25-item semi-structured questionnaire for both quantitative and qualitative analyses. The questionnaire was divided into three sections: ICT tools for communication, ICT tools for information and a section on general information about students' experience in blended and e-learning. The questionnaire was applied at the beginning of the classes and the researchers of the study explained students their purpose in the classroom. The results showed that 88.79 per cent of the students using e-mail for academic purpose and the 11.21 per cent used it for other purposes. Most of the students used ICT tools for academic purposes but some training is required so that they can be able to use in a proper way. The frequency in the use of ICT tools had a variety depending of the king of tool that students used.

Aghalara & Hadidi (ICEEPSY, 2011) made a study about the effect of digital games on Iranian children's vocabulary retention in foreign language acquisition. Two groups were

required during this work. The experimental group was taught vocabulary through the SHAIEx digital game whereas in the control group was used traditional methods to teach vocabulary. The participants were 40 six to seven year old girls no prior knowledge of English which were divided in experimental and control group each of them consist of 20 participants. The instruments were computer equipped with the digital games software installed, black board, marker, flashcards and posters. This study was carried out 45 days around 90 minutes' sessions during the week. The results showed that the experimental group had a better performance than the control group. It means that the use of digital games helped students to have a better motivation and facilitates the learning process.

DeHaan, J., Reed, W. M., & Kuwada, K. (2010) realized a study about the effect of interactivity with a music video came on second language vocabulary recall. This was an experimental study which an aim was to investigate if video game interactivity would help or not the recall of second language vocabulary. The participants were eighty undergraduates (65 males, 15 females, and ages from 18 to 24) from a computer science university in Japan. Participants were paired and one participant in each pair was randomly assigned to either play or watch a video game. Students had to give their score, made a vocabulary written recall test and give an opinion questionnaire. By the end of the treatment both participants completed the same vocabulary written recall. The results were that both the players and the watchers of the video game recall vocabulary from the game; however, the players recall less vocabulary. It is because for players were more difficult to focus on the game and the vocabulary.

Rojas (2013) worked in a project whose focus was to demonstrate in what way the web 2.0 resources (videos, blog and audios) are useful in order to improve students' oral skill in English by taking into account the ability of oral expressions such as: pronunciation, coherence, and

fluency etc. Moreover, promote and teach students to interact with these ICT resources. This project was practiced every day with these resources during a specific time. Students assisted during four weeks from Monday to Tuesday for two hours. The class topics were planned according educational content. It was assigned by the language center. CD's, and web resources as: YouTube, video, and blog were designed. The results of the project were satisfactory because students showed a better level after using ICT in their English learning. Students were really interested in using the ICT resources to practice and improve oral skills. They agreed that the mix of ICT and English language is a good idea because technology has been in evolution.

In the previous studies the use of ICT resources in the classroom was useful. Students showed more interested when ICT resources were applied their classes. However, the use of ICT with children needs to be improve because they use technology as a transmit knowledge instead of built it. The use of ICT resources to teach a new language might be an excellent resource. Technology could be integrated to classes in order to catch students' attention.

2.2 Theoretical framework

In the following section are described the definitions of the two variables: ICT resources and digital competence. Besides that, it is described the use of ICT resources in children and the students' digital competences with this resource.

2.2.1 ICT resources

Toommey (2008) said that Information and communication technology (ICT) generally relates to those technologies that are used for accessing, gathering, manipulating and presenting or communicating information. The technologies could include hardware (e.g. computers and other devices); software applications; and connectivity (e.g. access to the Internet, local

networking infrastructure, and videoconferencing). What are the most significant aspects about ICT resources; the increasing convergence of computer-based, multimedia and communications technologies and the rapid rate of change that characterizes both the technologies and their use?

Lloyd, Margaret (2005) mentioned that the acronym ICT is taken to stand for information and communication technology or alternatively information and communications technology. The term ICT must be seen as an evolution from the antecedent and more narrowly defined term IT (information technology) which maintains its usage in government, business, and industry and in relation to tertiary and other academic courses dealing with such areas as programming, database design and expert systems.

Base on previous definitions of the acronym ICT, it can be defined as the technology to communicate, or present information. These resources might be computers, internet, blogs, video, audio, etc. ICT resources includes from the hardware to connectivity in order to access and create information.

2.2.2 Digital competences

The concept of digital competence is a multi-faceted term which covers many areas, and fields. For this reason in this section some studies are presented in order to look for the most suitable definition.

Ilomäki, Kantosalo and Lakkala (2011) said that digital competences are related with other terms as digital literacy. It consists in a variety of skills and competences, and its scope is wide covering media and communication, technology and computing, literacy, and information science. They suggest that digital competence consist of 1) technical skills to use digital technologies, 2) abilities to use digital technologies in a meaningful way for working, studying

and for everyday life in general in various activities, 3) abilities critically evaluate the digital technologies, and 4) motivation to participate in the digital culture.

The Organization for Economic Cooperation and Development (2005) defines competences first, the individuals' ability to use a wide range of tools for interacting effectively with the environment. They need to understand such tools well enough to adapt them for their own purposes- to use tools interactively. Second, individuals need to be able to engage with others, it is important that they are able to interact in groups. Third, individuals need to be able to take responsibility for managing their own lives.

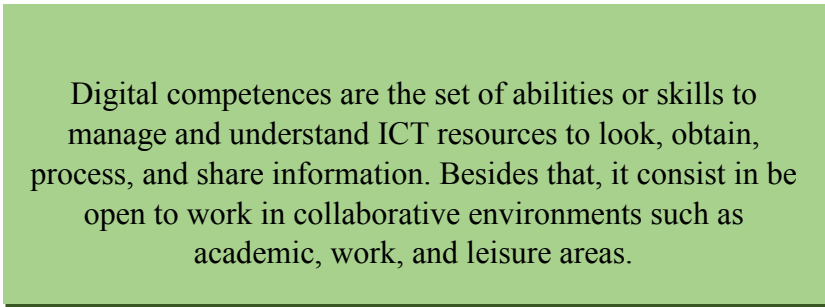
The concept of digital competences has a relation with the web 2.0. Rojas (2013) defines that the web 2.0 promotes collaborative works and today is easier to share productions of education in internet. Now, activities can be designed to teach a second language, oral and written productions by archives with sound.

"... consiste en disponer de habilidades para buscar, obtener, procesar y comunicar información, y para transformarla en conocimiento. Incorpora diferentes habilidades, que van desde el acceso a la información hasta su transmisión en diferentes soportes una vez tratada, incluyendo la utilización de las tecnologías de la información y la comunicación como elemento esencial para informarse, aprender y comunicarse. (Gutierrez & Tyler (2012) p.37)

Gutierrez & Tyler (2012) statement that digital competences consists in having the abilities to look, obtain, process and communicate information and to transform it in knowledge. It said that different abilities are involved in order to access and process the information. These abilities are essential for individuals so that they could inform themselves, learn and communicate.

The European parliament and the council define that digital competences involves the confident and critical use of Information Society, Technology (IST) for work, leisure and

communication. It is underpinned by the basic skills in ICT: the use of computers to retrieve, assess, store, produce, present and exchange information, and to communicate and participate in collaborative networks via the internet (Fontelles & Enestam, 2006)



Digital competences are the set of abilities or skills to manage and understand ICT resources to look, obtain, process, and share information. Besides that, it consist in be open to work in collaborative environments such as academic, work, and leisure areas.

Figure 2.1 Digital competences definition

Ferrari (2012) mentions that being digital competent today implies the ability to understand media to search for information and be critical about what is retrieved and to be able to communicate with others using a variety of digital tools and applications. After searching from a variety of frameworks that defines this wide concept, she declares that digital competences is the set of knowledge, skills, attitudes (thus including abilities, strategies, values and awareness) that are required when using ICT resources and digital media to perform tasks; solve problems; communicate; manage information; collaborate, create and share content; and build knowledge effectively, appropriately, critically, creatively, autonomously, flexibly, ethically, reflectively for work, leisure, participation, learning, socializing, consuming and empowerment.

The European framework as Mexico look for developing citizens with a wide range level of competences that help individuals to be part of an evolutionary digital society. According to a survey about professional competences made in Mexico on 2014, most of the professional people

do not have the abilities to manage properly technology. It is mentioned that individuals need technology in education, social, and cultural level. The major of the companies are looking for people who possess the abilities to manage the technology. Graduated people do not have the digital competences in using computer when they finish the school. Schools are blamed for not provide their students with the suitable resources to develop digital competence and involve them in the global world where technologies are required.

As many researchers agree the concept of digital competence involves abilities and skills to do different tasks. Based on the research purposes of the study and the concept suggested by some researchers; it was defined digital competences as the set of abilities or skills to manage and understand ICT resources to look, obtain, process, and share information. Besides that, it consist in be open to work in collaborative environments such as academic, work, and leisure areas. The definition of digital competence in this study pretends to define the concept of digital competencies and identify 4 areas in which this study is focused. Figure 2.1 presents the definition about digital competences adapted for this study.

Classification of competences

In 2014 the Centro de Investigación para el Desarrollo, A.C. (CIDAC), Pere Marques (2013) and Fontelles & Enestam (2006) propose different categories for professional competences. They are explained in the following paragraphs. These categories are presented in international and national level.

In 2014 The CIDAC made a survey titled “The professional competences survey 2014”. Taking into account the survey results, different categories of competences were proposed based on the companies needs related to their employees. Figure 2.2 show the competences by CIDAC:

Categories of digital competences
General culture
Communication tools
Communication with others
Collaborative work
Innovation
Logistics
Leadership
Personal efficiency
Personal image
Emotional intelligence
Marketing and sales
Informational technologies
Engineering expertise
Quantitative: mathematics
Quantitative: statistical
Quantitative: financial-countable
Quantitative: data analysis

Figure 2.2 CIDAC Professional competences survey (2014)

The CIDAC (2014) defines as competences the abilities to carry out complex activities combining abilities, attitudes, knowledge and motivation. The competences need to be understood at the conceptual level but they also need to be applied in different contexts such as education, work or personal development. As conclusion of the survey made by the CIDAC, Mexican students need to receive cutting-age and quality education since basic levels in order to develop digital competences which will be useful for their future.

Fontelles & Enestam (2013) mentioned that educational system needs an integration of ICT resources in the classroom. They define digital competences as the use of ICT resources for academic, leisure, and work. It includes basic abilities such as store, evaluate, produce and change information.

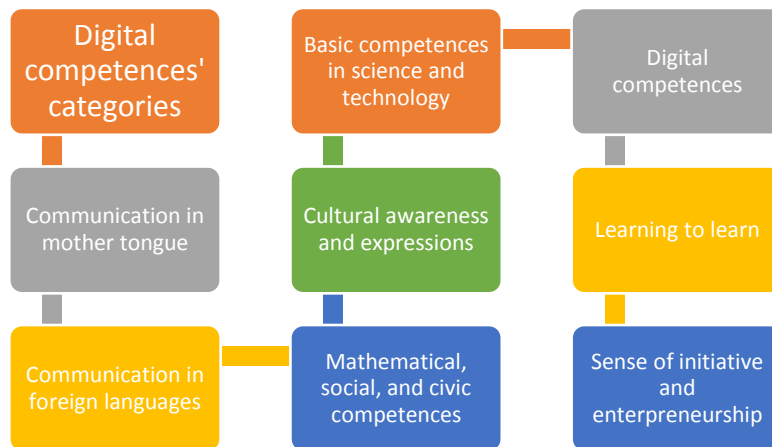


Figure 2.3 European Parliament digital competences Fontelles & Enestam

Teachers are required to have digital competences to transfer the knowledge to their students. It is important to be conscious about students' needs in digital competences according to their educational level. For this reason, it is necessary have a framework of digital competences so that teachers have a support for their classes and give students a quality education about the use of ICT resources to develop competences. Figure 2.3 illustrates digital competences categories according to European Parliament and council taking into account a European framework of competences. ICT resources can be used in the classroom but it is necessary that teachers have the knowledge about how apply them in their classroom activities.

Pere (2013) points out some categories of digital competences in basic education (see Figure 2.4). He mentions that is important that both teachers and students know how to use ICT

resources. Students develop abilities to use and applied to educational or work purposes. The emerging technologies offer advantages to individuals because it becomes them qualified in different areas. Some categories of digital competences know how to use the resources for basic tasks using programs for editing images, sounds, and motion pictures. Also, looking, building and organizing information are some digital competences that children need to develop. Besides that, working in groups since basic levels help to develop digital competences and create a sense of responsibility about the use of ICT resources.

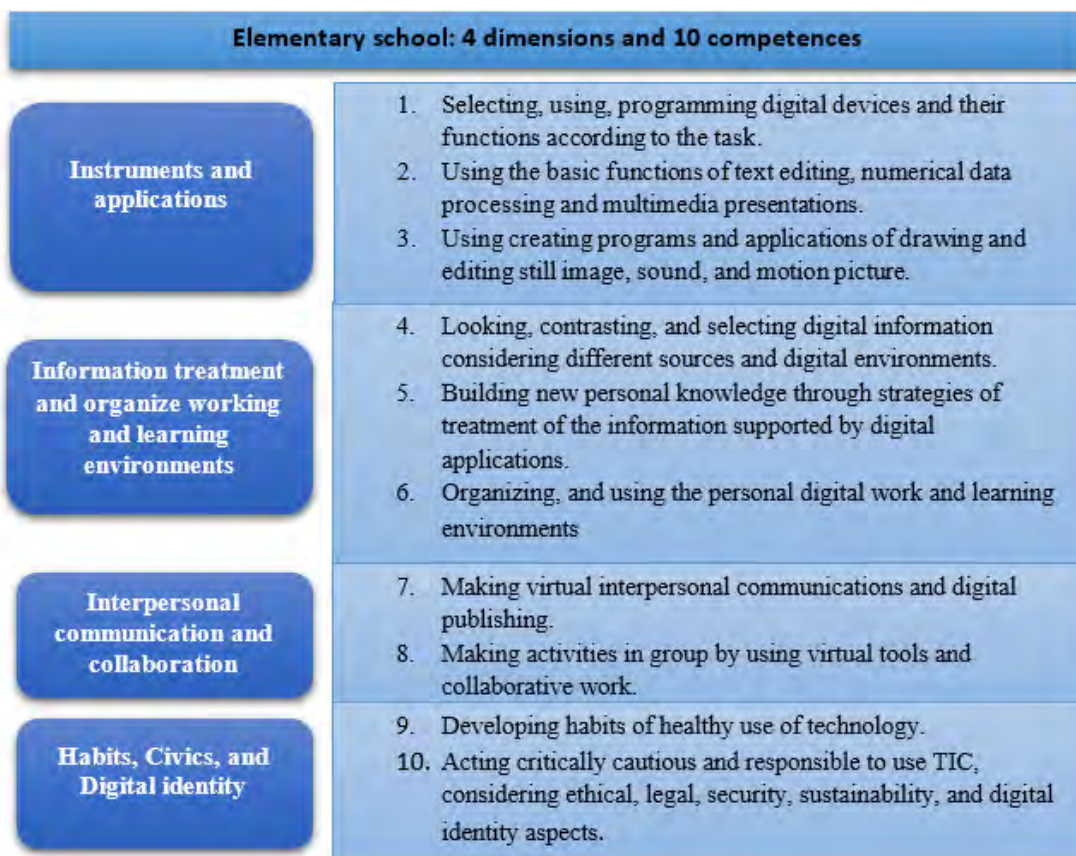


Figure 2.4 Digital competences Marques (2013)

For purpose of this research, the digital categories proposed by the CIDAC (2014), Fontelles & Enestam (2006), and Marques (2013) were considered to define the competences that

are required to develop in students of elementary school. It was analyzed the context of the elementary school, students' characteristics, and needs, the students' grade select the categories for digital competences. As the Development National Plan (2013) states that children are required to have basic abilities using the computer in order to develop basic skills to use the computer for their lifelong learning.



Figure 2.5 Categories of digital competences

Figure 2.5 presents five principal categories of digital competences proposed by researchers of the study. These competences are looking for information, multimedia management, creating content, sharing information and collaborative work. There were selected as the principal to develop children competences using ICT resources.

2.2.3 The use of ICT in teaching English as a second language.

In recent years technology have played an important role in the society because many people use it to work, to learn or just for entertainment. Lemke (2002) stresses that today, in order to survive to a digital era, literacy people have to be aware of the language of the technology, which is changing. The use of ICT in learning English has been a useful opportunity to make a difference in teaching this language. Rojas (2013) says that in Mexico, people are required with a good manage of English language. Many children are exposed a technology age where they have access to computers, tablet, cellphones and internet. Usually they use it only for entertainment or look for some information. Now, people are surrounded with and endless world with computer media where the essential point it is to know how to take advantage of it. However, it is vital to mention that even though technology is becoming more popular and necessary not all people have the change to have a computer, tablets, or a cellphone. Adler, (1999) stresses that the need to address information literacy as an important social issue is strong and immediate to take advantage of educational opportunities; individuals and families increasingly need sophisticated information skills and knowledge. Rojas (2013) comments that in the education, the importance of ICT has become bigger because the new generations demand every day the use of them. The new students' generations are involved more in the ICT students, they are growing in an age where ICT and learn a new language is very important. It is for that reason that combines technology and education will be useful in education. If teachers want to engage children in the use of ICT resources, the multimedia resources should be used as games, blogs, reviews, and interaction between students. In this way students will find it fun and entertaining. An important issue in English language acquisition is the vocabulary. Most of children from 6 to 7 learn more vocabulary than structures. In a study, Aghalara & Hadidi (2011) mention that children were more motivated by using digital game.

“They were learning English vocabulary by playing digital game and watching animation on a computer screen and they were not aware that they were engaged seriously in learning a second language” (p.7).

Nevertheless, the use of ICT in education might not be the most appropriate because students are not used to work with it .Most of the time schools want to include ICT in their syllabus but they failed because students do not have the correct training in using ICT. Ramirez & Alonzo, (2007) suggest that it is necessary to continue analyzing the existing Internet-based content in order to design a coherent syllabus which may respond to young learners’ needs. It is necessary to look for an appropriate way to integrate ICT in education. Teachers and headmasters might take into consideration that ICT is a suitable resource to teach English.

New generations are exposed to both English and technology which are important to survive in work, education, and social environment. All these authors agree that it is vital to implement these subjects from basic education so children can develop digital competences and be capable to face the life. These studies showed that implementing ICT resources to acquire a new language is very useful for catch students’ attention.

2.2.4 The effect of ICT in the students’ English learning.

The ICT have been integrated few years ago. It is said that learners and teachers can use ICT to support imaginative expression, autonomy and collaboration, fashioning and making, pursuing purpose, and being original with the use of ICT (Loveless, 2002).

The use of ICT resources in the classroom gives teachers and students a significant opportunity to learn in different way. Teachers can take advantage of the technology era in order to catch the attention of students. Teachers might implement the ICT resources in an educational context when students are conscious that ICT can be an entertaining manner to do homework and

look for information. Many times children pay more attention when teachers are creative and look for a different way to teach a subject. If teachers use interactive whiteboards or computers, students will be engage in the task.

In conclusion, the integration of ICT resources to teach children is a significant feature because children like to use this to learn whatever subjects. The more ICT resources teacher uses, the more interested students are. ICT resources can be advantageous for learning a new language.

2.2.5 Children and the use of ICT resources to learn English.

Nowadays, children are growing in a digital environment and in a world where English is essential. Most of them are exposed to these kinds of resources since they born. In fact today children of all ages are living in a highly media environment influenced with access to a variety of digital electronic devices which are accessible both at home and elsewhere including school (Aghalara & Hadidi, 2011). On one hand, technology has been playing an important role in society. It is everywhere as in the work place or at home so it is important to take into account that children are exposed to this environment and they need to have knowledge about it. As the official journal of the European Union (2006) mentioned the use of technology needs to be taught since an early age:

The Commission and Communication "Making a European Area of Lifelong Learning a Reality" and the subsequent Council Resolution of 27 June 2002 of lifelong learning identify the provision of the 'new basic skills' as a priority and stressed that lifelong learning most cover learning from pre-school age to post retired age. (p. 10)

On the other hand English is a very important resource nowadays. Many schools are integrated to their syllabus English as an important subject. English is very important to get a job or academic purposes. Because children are interested in the use of ICT, it is a suitable idea to

use it to teach English. Lesson plans and didactic guidelines based on digital content would be useful for full-time schoolteachers and instructors (Ramirez & Alonzo, 2007). Students need a well-design syllabus where ICT will be integrated to teach English. It would be an excellent idea that teachers take into considerations that children are interested in technology but they need to know how to use it in their classes.

2.2.6 The digital competence of students using ICT resources to learn a new language.

What do students know about the use of ICT? ICT resources have become important to students but specially to children who are growing in a digital environment. Many schools are provided with computers and access to internet; however, there is not a specific class when students learn how to use properly these tools. West (1993) reported that in 1992 according to a study by the council of Chief State School Officers, more than 3.5 million computers were in U.S elementary and secondary school- a ratio of one computer for every 13 students. Adler (1999) points out that in 1998 the ratio of students to computers in U.S elementary and secondary schools were approximately 7 to 1; however, many educators believe that more needs to be done not only to provide wider access to computers but to ensure that they are used properly. Teachers tell students to look for information in internet and ask students to do homework in their computer. Nevertheless, teachers do not train students in the use of these tools. Teachers have to be conscious that some students are not good at using these resources. So, they need to have a previous training in order to have experience in using ICT. Jaramillo, (2003) says that the use of ICT in students is since a point of view of transference of knowledge instead of a built one. In the same study, it is said that the use of ICT is used to teach and practice, and to provide access to information. Children from 7 to 10 years show knowledge about the use of computers to do their

homework. However, sometimes they only use a few resources. Students are able to turn on the computer, CPU and the screen. They manage the mouse, select the menu and surf inside the educational materials which they use in class. Students use different programs like Word, Internet Explorer, they know how to open them but they do not know how to close it. Even students are provided with computers, the children did not have the searching process. Jaramillo (2003) says that according to the NETS standards, it is expected that children from third grade start a learning process where they can access to information. They recompile it, talk and share about it Children need to know more knowledge about the use of ICT. The resources as video, blogs or audio are really advantageous when they have to learn a new language. However, students in an early age only have little knowledge about them. ICT are suitable resources to make children practice a new language. Using different kind of media as video, games, computers, and audio will create a nice environment to them.

CHAPTER 3 METHOD

This chapter presents the method used in this study. This study is a pre-experimental design. Campell & Stanley (1963) mention that there are three pre-experimental designs are divided in three. The one-group (pre-test and post-test) is used in educational research and has five variables in its results such as experimental isolation, maturation, testing, instrumentation, and statistical regression. It includes the description of participants, students' background, instruments, and procedures, pilot of the study, data analysis and timetable. The objective of this study was to be aware of the effects that ICT resources has in ESL in children in a public school. Moreover, this research aimed to identify which digital competences student developed while they use ICT resources to learn English as a second language. Figure 3.1 presents the variables of the study.



Figure 3.1 Variables

3.1 Participants

This study was conducted on the public primary school “Belisario Dominguez”, which a total of 408 students. It had internet access, 13 classrooms and one computer lab. Computer lab had 15 computers, but only 13 had internet access. Half of the computers had headphones. Besides that, the computer lab had a big screen, where students can observe what teacher did during the classes. The participants were 33 students who belong to fourth grade (4°B).

3.2 Instruments

The instruments were chosen after selecting the groups. They are described at the end of the study and are shown in the corresponding appendices.

Diagnostic questionnaire (see Appendix A): A diagnostic questionnaire was conducted. This was divided into 7 sections with a total of 48 statements. The first section aimed to identify the frequency and use of ICT resources. The second section is to identify the digital competences in students. The third section aimed to identify students’ ability in using a computer. The fourth section pointed towards to identify students’ attitudes when they use ICT resources in classes. The fifth section focused on students’ attitudes to learn English. The sixth aimed to identify students’ attitude when they use ICT resources to learn English. Finally, the last section is about students’ background such as gender, city, and their technology resources in their houses. The questionnaire format is based on Likert scale and it was answered with a circle according to students’ opinions. The questionnaire was adapted in order to get the most profitable answers and to have reliability in the students’ answers in our results. Moreover, the questionnaire is as simple as possible and attractive for students so that they do not get stress or bored when they answer the questions.

Piloting the questionnaire

The pilot study was carried out in an elementary school called “Mariano Azuela”. The questionnaire was applied to a group of fourth grade with a total of 35 students. The application lasted around 30 minutes. Before the researchers of the study applied the questionnaire, they asked for permission to the principal of the school. It is important to mention that the principal was polite and cooperative because he had a great attitude to us. When the researchers of the study arrived to the classroom, they introduced themselves and explained to students why they were there. Researchers gave students the questionnaire and explained the instructions. Researchers read the first and second part of the questionnaire and waited for students to respond those sections. In every section students had to wait for researchers’ instructions. They had to say “finish” when they completed the sections. Researchers checked every section of students’ answer in order to be sure that they answered every item. After finishing with the questionnaire, researchers asked to students if they liked the activity or they got confused with some sentences. A few of them got confused with section 3, item 29 about using the computer for creating a word document or Power Point presentation. Students did not know about the Power Point application so researchers explained it that they could answer that item.

After doing the pilot study, researchers made a few corrections in order to avoid some misunderstandings that researchers observed with the questionnaires. For instance, to section 2-item 46 and 47 it was added three options more. The pilot study helped to review and verify the questionnaire. Besides that, researchers analyzed the questionnaire’s internal consistency, so researchers used the IBM Statistical Package for the Social Sciences (SPSS) Version 16 in order to get the Cronbach’s Alpha to analyze the results of the pilot study. Table 3.2 shows the result from Cronbach’s Alpha with a .92 of reliability.

Reliability Statistics	
Cronbach's Alpha	N of Items
.925	43

Figure 3.2 Cronbach's Alpha

A Pre-test (see Appendix B): An activity in the form of pre-test y was conducted. This aimed to find out the students' digital competences by using ICT resources before the treatment. The objective of this pre-test was to recognize what abilities students show when they use ICT resources while they are practicing English. The pre-test had four stages; every stages of the activity had relation with digital competences. The first stage of the activity consisted in searching for information by watching some videos. The second stage focuses in multimedia management, where students practiced the topic about body parts. The third stage concentrated on creating a Power Point Presentation by choosing one image from some links provided for the researches of the study. The last stage was oriented on sharing the presentations with their classmates.

Interview (see Appendix C): An 8-questions interview was conducted. This aimed to know teacher opinion and experience about ICT resources in English teaching and students' digital competences which answered the last research questions of the study. The interview was divided in three sections. The firs one aimed to know teacher's experience in the use of ICT resources in English learning process. The second one was about students' digital competences in the classroom. The third one was focused in some teacher's suggestions about implementing ICT resources for developing digital competences in English classes.

A Post-test (See appendix C): The post-test consisted on applying a semi-structured activity which aimed to detect students' digital competences after the treatment. The principal objective was to identify student's digital competences by using ICT resources to practice English. The post-test followed the same steps that the pre-test but using a different topic. It had fourth stages that focused in the same digital competences of the pre-test (searching for information, multimedia management, creating content and sharing content). The purpose of making the post-test was to analyze the results of this study by comparing the differences before and after the treatment.

Materials and resources

To carry out this research, some materials and resources were used during the treatment. During the treatment students worked in a platform called Edmodo where they could practice and did their activities. These activities were adapted according the plan of English teacher in the school "Belisario Dominguez". In the following section, the platform, activities and resources are explained.

Edmodo learning platform: It is a social media platform often described as a Facebook for schools. Edmodo (designed by educators) enables exceptionally secure cloud-based collaboration (see Figure 3.3). Teachers and students can store and share documents and files in a wide variety of formats in a cloud-based environment.

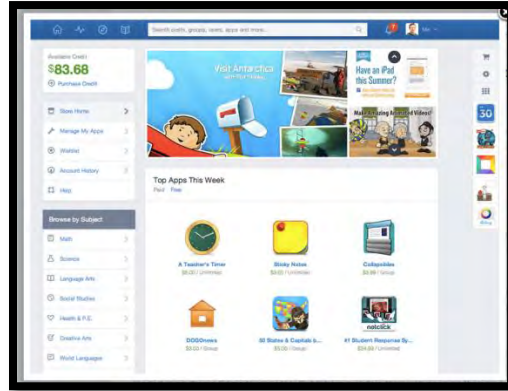


Figure 3.3 Edmodo learning platform

Jimdo: It is a free platform where web pages can be created (see Figure 3.4). It has its own content management which is use as an editor. Individuals can share, create, and use information in a dynamic way.



Figure 3.4 Jimdo web page

Edmodo learning platform and Jimdo web pages were suitable resources for using during the treatment. Both resources were chosen in order to catch students' attention and to make the classes more dynamic.

The framework of Technological Pedagogical Content Knowledge (TPACK) lessons

formats: Mishra and Koehler (2006) introduced the TPACK framework (see Figure 3.5) to the educational technology field.

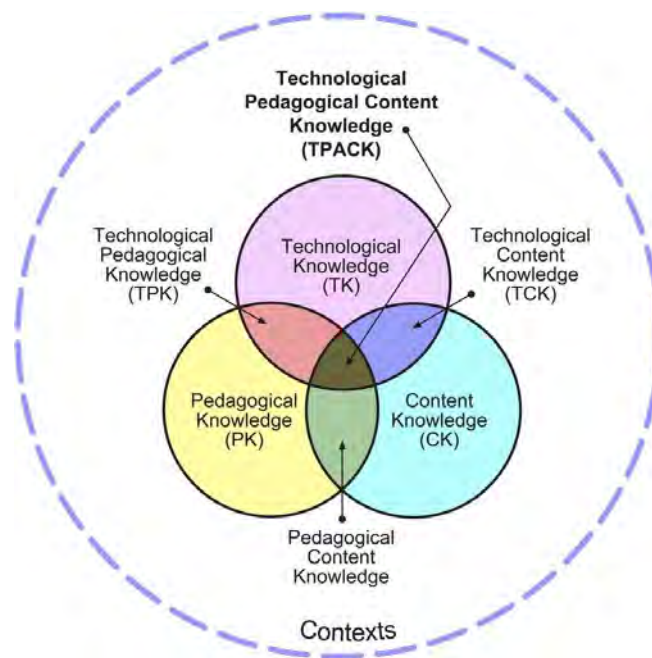


Figure 3.5 TPACK Framework (Mishra & Koehler, 2006)

The TPACK is a framework that helps researchers and educators to understand and examine the specialized and multi-faceted forms of knowledge that are required for teachers to effectively integrate technology in their teaching (Mishra & Koehler, 2006).

3.3 Procedure

The study was conducted by comparing the result in one group from an elementary school “Belisario Dominguez”. The procedures of the present study are addressed in detail in this section. Researchers have already done the piloting of the questionnaire and the teacher’s interview to one English teacher in order to prove them and make the necessary corrections. The students and teacher in the piloting did not participate in the project. After that, researchers worked with one group (experimental group). This group was a different one from the pilot study. The treatment was conducted with the 4 grade the Belisario Dominguez elementary school with a total of 33 students.

This study research lasted one month and the sessions were twice a week. Each English session lasted one hour and ten minutes. The class was divided in two sections of 30 minutes because of the size of the group and the total of computers. Before starting with the treatment, one diagnostic questionnaire and one pre-test were applied. The questionnaire was applied individually in order to detect students’ opinions in English and ICT resources, but since the pre-test students were working in teams because of the number of computers with internet access and the size of the group. After that students received an Edmodo training in order to be ready for the activities of the five-experimental-week study. During the training students learned how to use some tools from the Edmodo learning platform. Then, they started the treatment based on teacher’s lesson plan. The treatment activities, which covered the digital competences of information management, multimedia management, creating content, and sharing content, were planned on the topic “parts of an advertisement. Students learned vocabulary about the name of the product or company, contact information, the image, message/slogan, company name, and products or services offered. After finishing the treatment, a post-test previously adapted was

applied so that the results between the pre-test and post-test be compared. Finally, a survey about students' opinion of the treatment lessons was applied. Teacher's interview was applied in the middle of the treatment, in order to know teacher's experience about the use of ICT resources with children. The reason of doing the interview in the middle of the treatment was because researchers' timetable.

Carrying out the experiment step by step:

What follow is a description in detail about the treatment with students of fourth grade (4 B). A month before starting the treatment, researchers asked for permission to the principal of the primary school "Belisario Dominguez". The principal had a good attitude and provided to the researchers an English book from the school. This book had all the information and topics that were needed to plan the classes and activities. It is important to mention that the activities were planned according to the English teacher lesson plan. Moreover, in order to have a better control of the class and for the number of computers with internet access, the group was divided and students were working in teams. The same steps and activities were applied to both groups. The first group (Group A) had a total of 8 teams and the second group (Group B) had a total of 5 teams and one team of three. Eight computers from the computer lab were used and labeled from 1 to 8 so that researchers could identify children. Researcher always arrived to the school 20 minutes before in order to prepare the classroom for students. Computers were always turned on before students arrived to the computer lab and after every class finished students returned to the classroom accompanied by a researcher. Also, students wrote a reflection about the activity of the day, however this reflection was not applied during all the classes because of the lack of time. During the pre-test, the treatment and the post-test one researcher took notes (Researcher 1) and

the other one gave the instructions (Researcher 2). Sometimes Researcher 1 gave the explanations while Researcher 2 took notes.

Questionnaire

A questionnaire was applied individually to students in order to know their opinions about using the computer in English subject. The questionnaire was carried out two weeks before the pre-test and the treatment. Before start the activity, researches asked for English teacher permission and introduced themselves to the class. After that, instructions were told and it was clarified that there were no right or wrong answer, because the questions were only to know their opinion about the use of computers and English (see Appendix A). Students had to answer in a specific time every section of the questionnaire. During the questionnaire application, both researchers were checking that students answered every single question from the sections and some doubts were solved. When students finished the questionnaire, they raised their hands and researchers checked again all the questionnaire. At the end of the activity, researchers thanked to the English teacher and students for their help.

Pre-test

The pre-test was applied three days before the treatment with the group. The pre-test activities were based on a suggested topic (body parts) by the English teacher because she said that students had some problems remembering topics. Researchers arrived to the school earlier so that they could prepare the computer lab and inform to the principal and English teacher that they would be working with the children. However, there was a delay because the computer classroom was taken and the researchers had to wait a few minutes to use the computer lab. After that, it was necessary that researcher take turns for saving time and doing the activity. Researcher 2 was

to check the computers and Researcher 1 went to the classroom for the children. Before students went to the computer lab, the researcher did a game where children picked a piece of paper. There were 33 pieces of papers; half of them were marked from 1 to 16. Children who had numbers were the first group (Group A) and the other children who did not have a number were the second group (Group B). Group A was the first group on going to the computer lab. Only 7 teams were formed in Group A because some students did not attend the class. When students arrived to the computer lab, they formed teams of two and sat down in a computer. After that, discipline rules were explained in order to have a better control of the group. Researcher 2 explained to students that they must respect the discipline rules in order to be able to stay in the classroom.

Before starting the pre-test, a pre-designed web page in Jimdo (see Figure 3.4) was previously opened in the computers so that they did not waste time looking for the page. The pre-test was divided in 4 steps. These steps were according to the digital competences: searching for information, multimedia management, creating content, and sharing content. The first step was open a link on the Jimdo web page named "Choosing a link". This heading had five different links where children explored and chose one related to the vocabulary "*body parts*". After that, students opened the Power Point application to write five words from the vocabulary. Following, students opened the next link called "Working together". In this step, students found a page where they played a crossword. Researcher 2 indicated that children had to work in pairs so that they could complete the crossword game. After that, students had to return to the Jimdo web page and looked for the link "Creating". In this link, they looked four different images about body parts and chose one. Then, students copied the image and pasted in the Power Point application. When students finished, they saved their projects with their names and closed the application.

Students returned to the Jimdo web page where they clicked on a link called “What I create” to do the final step. In this link, they found a Padlet application to share their presentations. After uploading their presentations, students visited the presentation of their classmates. The second group faced time difficulties so they had less time than the first group for doing the pre-test.

Observations during the pre-test

Notes were taken during the application of the pre-test. A rubric (see appendix B) was taking into account in order to provide a score. This pre-test rubric covers 5 steps and the digital competences of searching for information, multimedia management, creating content, sharing content and collaborative work. The following is a brief description about some pairs during students’ performance.

Group A

In the Group A, 7 teams (14 students) presented the pre-test. Computers from 1 to 7 were turned on for doing the activity.

Computer number 4: Students did a good job looking for the links. They knew how to choose the information. Despite the fact that they had little problems managing the computer; they do the crossword activity about body parts vocabulary. Also, they had doubts about the Padlet application and asked for help to share their presentation. Even some difficulties while managing the computer, they work well together and achieved all the activities of the pre-test.

Computer number 5: Students showed an excellent manage of the computer for looking the links. However, they get a little distracted during the task. Also, they completed the crossword in a short time and worked well together. Moreover, students share without difficulties

their presentation in the Padlet application. Students did a good job because they had a good manage of the computer and complete all the activities.

Generally, the first group did a good job in the activities of the pre-test. They worked in pairs and managed the computer in a good way. However, some pairs had some complications when sharing their presentations because they did not know how to do it.

Group B

In the Group B, 6 teams (12 students) presented the pre-test. Computer from 1 to 6 were used. It is important to mention that the second group faced time difficulties for doing the pre-test.

Computer number 2: Students know how to look for the links and choose the information properly. However, they had a bad attitude in working in pairs and managing the multimedia application. This made that they did not finish the crossword. Students did not have difficulties in sharing the information in Padlet application, but their presentation was poor.

Computer number 3: Students did not find the links and had problems in choosing the information to do the work. Also, they did not complete the activity of crosswords because they had problems in the multimedia management. Both students were really confused about what they had to do during the task; even though teacher helped them. These students could not write in the Power Point application the five words from the vocabulary. Despite the fact that students face some problems, they share their presentation and showed an excellent collaborative work.

Edmodo Training

The Edmodo training was applied the first week previously the day of the treatment in order to explain to children how to use Edmodo and to sing up in the group already created by

researchers. The Edmodo training was divided in 4 steps. The first step was to explain to children the Edmodo platform and its use in this class. The second step was making children to sing up in the Edmodo group, and the last step was explaining children how to use some Edmodo resources. The following is a brief explanation about the steps of this training and some observations during the training.

Explanation of the Edmodo Learning platform

In this class students sat down with their partners in the computers assigned. After that, the explanation was given to children for using the Edmodo learning platform and its use in the class. Students listened the purpose of using the Edmodo learning platform and understood its use for this class.

Signing up to Edmodo

After listening the explanation of the Edmodo learning platform, students signed up individually in to the group of Edmodo learning platform. Students followed each instruction gave by Researcher 2. The first instruction was filling the empty spaces (see Figure 3.6). Students went to the option of “student”. to fill in the spaces that were required such as a group code given by the teacher, their first name, their last name, an user name created with their names and some numbers, and finally a password.

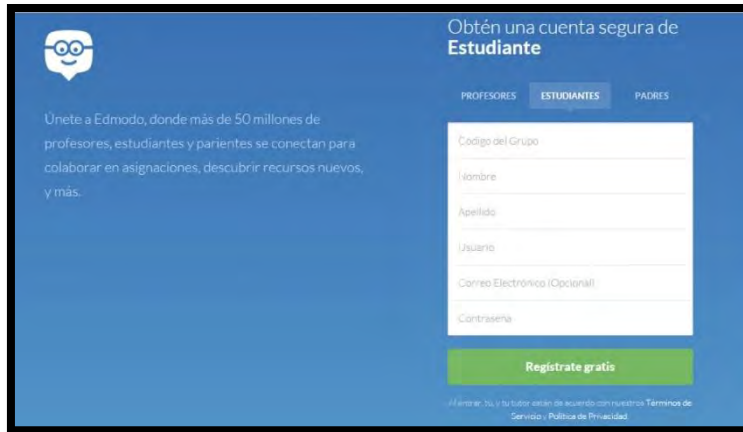


Figure 3.6 Edmodo learning platform (account)

Some spaces were not asked to fill in such as e-mail, because not all students had an e-mail account. After the first students of the group signed up to Edmodo learning platform, the other student signed up to the group. After both students signed up, Researcher 2 asked to students to log in to Edmodo so that the following step could be done.

Explanation of some Edmodo tools

After students logged into Edmodo learning platform, researcher 2 asked them to follow some steps to go to the group. Then, it was explained some resources such as folders, the backpack and the notifications. Moreover, students learned how to save information from the folder of the group into their own backpack. Then, students opened a folder called “Examples of an advertisement” (see Figure 3.7) to choose one of the documents that were in this link. After children choosing a document, the researcher explained them the use of the icons that appear on the right side or below a document. One symbol/icon was a backpack used to save and upload documents; the other one was a paper with a pencil used for sending some notes of the document and the last symbol that seems a paper is used for downloading the document.

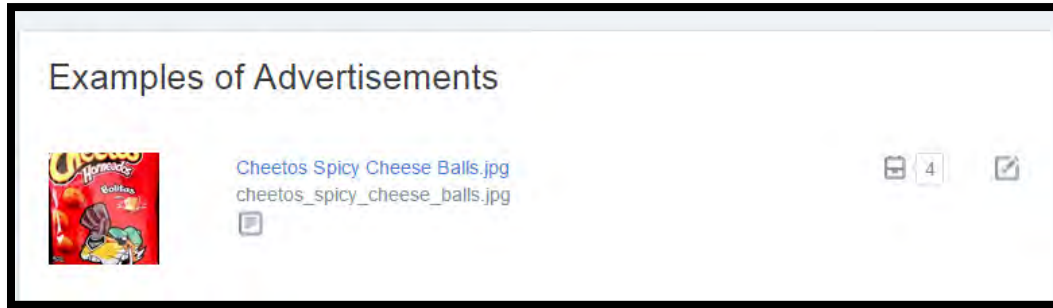


Figure 3.7 Examples of advertisements

After explaining the icons, the researcher asked them to click on the resource that seems a backpack in order to teach them how to use it. After finished the explanation, it was requested that children logged out of the Edmodo platform.

Observations during the Edmodo training

Observations during the Edmodo training were made by the researchers of the study. It was noticed that during the first step students were excited about working with computers and the Edmodo platform. In the second step, students had some difficulties to sign up to Edmodo because the users that they were creating were already taken by other Edmodo users. In the last step students understood the use of some Edmodo tools. It is important to mention that every step was demonstrated. Moreover, the time assigned for each group was the same, however, the second group worked faster than the first group of students. A total of 26 children signed up to Edmodo that day because not all students attended the class.

Treatment

Researchers went to the school two days per week. In order to develop the digital competences, each day of class was focused on one digital competence (information

management, multimedia management, creating content, sharing content and collaborative work). The digital competence “collaborative work” was induced during all sessions of treatment. It is important to mention that in every class, researchers of the study arrived 20 minutes before the class in order to turn on computers. The following is a brief explanation about the treatment days.

Information management treatment

During this lesson researcher remembered the discipline rules to students and gave the instructions. Previously the activity, researcher gave to each student a flashcard with their names. These flashcards were of two different colors (pink and blue). Researcher 2 clarified to students that those cards would help them to manage the computer. Students with the blue card would use the computer to log in one day and the students with the pink card another day. It was important to explain that both students must use the computer and help each other during the activities. Once students understood the instructions, the researcher asked the students with the blue card to log in; however some of them had difficulties to remember their passwords and log in to Edmodo learning platform. In order to solve this problem and save some time, it was asked to the other students with the pink card to do it. Despite some students with the blue card did log in to the Edmodo learning platform with their user name, the previous instruction about managing the computer by the students with the blue card still applying. After that, teacher displayed an image on the screen so that students can follow the instructions and learning activities. The image was an advertisement about a Mexican cereal called “Zucaritas”. Researcher 2 asked children about the parts of an advertisement and students gave some ideas. The parts of an advertisement were said aloud by teacher and students in order to practice the pronunciation. Then, the researcher asked students to go to the folder in the Edmodo learning platform where students could watch some examples. After watching different images, teacher asked students to open the publisher

application. Furthermore, students had to choose one image from the folder and copy and paste the image in publisher application. Besides that, students wrote the parts of the advertisement in the image. Students had to write as much vocabulary as they remembered about the topic. Finally, students tried to upload their work in the Edmodo learning platform as an assignment required, but there were some connection difficulties and students did not upload their assignments.

Observations

In the following part, a brief description is showed about students' performance during the information management treatment. The following aspects were considered in the corresponding rubrics designed for the development of the information management (see Appendix D): searching for information, choosing information, information content in Publisher application, saving the project, and collaborative work.

Group A

In the Group A, 8 teams (15 students) attended the class. A student worked alone because her partner did not go to school.

Computer number 3: Students did a good job about searching for information. Also, they did not have problems choosing the image from the folder. They had some doubts about using this application, but asked for help to their classmates. Despite they did not have any problem writing in the publisher application, they did not write all the parts of the advertisement because of the time. Students' task was not completely finished but they saved and upload it in Edmodo learning platform.

Computer number 5: Students did a good job during the lesson searching for information. They demonstrate a good work in choosing the image from the platform. This group did a good job writing the parts of the advertisement in the publisher application. Besides that, they achieved to save and upload their work to Edmodo learning platform.

Group B

In the Group B, 8 teams (16 students) attended the class. One team was made of three and one student worked by himself because her classmate did not come to class.

Computer number 3: Students achieved to search for information in Edmodo learning platform. Also, they chose the information in the platform and copied and pasted in the publisher application. They did not present any problem using the publisher application to write some parts of the advertisement. Besides that, they work well together because they helped each other to use the publisher application. Students achieved to do the task but did not upload their work.

Computer number 5: Students had problems logging in to Edmodo platform. Students did a good work searching the information, because they watched most of the advertisement in Edmodo learning platform; however, they had problems when they copied and pasted the image. Furthermore, when they had to write the parts of the advertisement, they only write two words. Students had another problem saving their projects. They looked confused and asked for help. Even all the problems that students faced, they achieved to do the task but did not upload their work.

All in all, the purpose of this activity was almost accomplished by the two groups. Most students worked well together, searched for the information required and used the information previously searched. Also, they managed the Publisher application to do a brief presentation, but

some students faced the same difficulty to upload their presentations in the Edmodo learning platform. Only 2 students achieved to upload but in a wrong place. For this reason, the researchers decided to use a few minutes of the following class to finish the last step of uploading the work properly.

Multimedia management treatment

During this session students arrived to the computer laboratory and before they got there, computers were turned on and the Edmodo platform was opened. Pink and blue cards with the number of the computer and students' name were placed in front of the computer in order to remember to students the color of their cards previously given. Also, a paper with the Edmodo user of each student were given to each couple in order to save time to log into the Edmodo platform and to have a better control of the group. After that researcher 2 remembered the discipline rules and some the instructions that were usually used during the class such as: Log in, Save and Upload. After that, those students who were not yet signed up to Edmodo learning platform, where invited to come after the class. Then, researcher 2 asked students with the blue cards to log in to the Edmodo learning platform in order to upload the last homework which was not uploaded by anyone of the group because the internet problems. After students uploaded their homework and added a comment of the activity on it, then they were asked to log out in order to give the opportunity to the students with the pink card to log in the Edmodo learning platform. It is important to mention that most students with the pink card were not able of logging in the Edmodo learning platform because they could not remember their passwords or because they did not have and Edmodo account. In those situations her classmate logged in with their account but let to the students with the pink card have the control of the computer longer than they. After finishing that step, students logged in to Edmodo learning platform to 4B group to start the

lesson. Researcher asked to students to look for the message in Edmodo learning platform named “Parts of an advertisement”, and then she asked to do the activity that was created in the Edmodo learning platform as a test. Students did two different activities in the test (see Figure 3.9) in order to practice the topic.

The image shows a screenshot of an Edmodo activity titled "Parts of an advertisement". It is divided into two sections. The first section, "Pregunta: 1", asks "What is the purpose of an advertisement?" and provides three radio button options: "To have too many colors and images", "To persuade people for buying something using images, many colors or a message.", and "To be pretty". The second section, "Pregunta: 2", asks "Une cada letra con la respuesta correspondiente." and lists five options (A-E) on the left and five descriptions (1-5) on the right for matching. Option A is "A tiger with a bowl of cereal", B is "Kellogg's", C is "Zucaritas", D is "Call now!", and E is "Demuestra que eres un tigre". The descriptions on the right are: 1. Image, 2. Name of the company, 3. 018005588990, 4. Name of the product, and 5. Message/Slogan.

Figure 3.8 Multimedia management activities

In the first part they answered a question, and the second part they matched the parts of an advertisement based on the example presented in the last class. After finishing the activity; students checked their scores and returned to the group page to look for the message named “Reflections” where they found a Padlet application to write their opinions about the activity of the day, the best part and the difficult one.

Observations

In the following part, a brief description is showed about some students’ performance during the multimedia management treatment. The rubrics applied for this digital competence

(See Appendix E) consisted on logging in to Edmodo learning platform, choosing information, multimedia management, closing the application, and collaborative work.

Group A

In the Group A, 8 teams (16 students) attended the class. This was the first time that teams in the first group were complete.

Computer number 3: Students had some problems entering to Edmodo learning platform so they asked for researchers' help. They did not have difficulties for looking the application. Students did a good job managing the first question and the matching activity in the platform. Also, they did a good job in closing the application and working in pairs.

Computer number 5: Students did not present problems logging in to Edmodo learning platform and the application for doing the test. Despite some doubts about the multimedia application, they did a good job using it for doing the activities in the test. These students had problems about working together and following the steps of the class. One of the students in this group did not want to share the computer and wanted to take the control of it. Despite these difficulties, students finished every task assigned.

Computer number 8: Students had some problems logging in to Edmodo learning platform but they were able to log in after a while. They did not have difficulties in looking for the application in the platform. Also, they achieved to use the application for doing activities of the test. Students' performance in closing the application was excellent; they logged out the application successfully without researchers' help. Collaborative work in this team was excellent because they help each other in the task. Despite the difficulties at the beginning of the lesson, students finished every task assigned

Group B

In the Group B, 6 teams (12 students) attended the class. There were 5 students that did not attend the class. Two of those students were a couple which had assigned the computer 5. Another one was from computer 4 and the last one from computer 8 who had worked by himself.

Computer number 1: Students logging to Edmodo learning platform and look for the application without problem. They faced some difficulties to use the multimedia application but achieved the activity and worked well together because they helped each other. The performance in this team was good because despite the fact that they face some problems they did all the activities planned. Besides that their collaborative work was excellent.

Computer number 2: Students had many difficulties for logging in Edmodo learning platform and managing the multimedia application. Also, students got distracted during the instruction of the activity, they talked during the explanation. These difficulties made that they did not complete properly the activity of answering the question and the matching activity. However, they did an excellent collaborative work because they help each other in classes. The performance of this team is fair because they present so many problems in the activity.

All in all, even though some students got distracted, the goal of the day was accomplished. Students managed the multimedia resources of the Edmodo learning platform and did the activities planned by the researchers. Moreover, it is important to mention that both groups (Group A and Group B) had similar difficulties during the class such as the time and not paying attention.

Creating content treatment

Two days were assigned to develop creating content competence to students. The first day students with the pink card logged in Edmodo learning platform with their username and the second day students with the blue card. Researcher 2 explained that both students would work together in the task. The first day Researcher 2 asked about the homework assigned, where they had to think about a topic for their advertisement, but they forgot to do it so Researcher 2 did a review of the topic. After that, students looked for the folder “Create” in the Edmodo platform. This folder contained different pictures that students could use to do their advertisements. They had to create an advertisement to promote the use of social networking web sites as Facebook, Twitter, Edmodo, Google, and YouTube in their classes. The following step was to open the Publisher application. Students had to copy and paste the image previously selected. Researcher 2 explained some tools from Publisher application to students so that they could create their advertisement. It was necessary that students wrote the parts of an advertisement in their project. After the time finished, Researcher 2 asked students to save their project in the computer and to log out of the Edmodo platform.

The second day students had to finish their advertisement and make the necessary corrections. Students had to translate their advertisement from Spanish to English. Besides that, they had to improve it. The first instruction was to log in Edmodo platform to look for the folder called “Technology slogans”. This folder had two examples of advertisement that students can use as a guide to improve their advertisement. Also, a power point presentation was in this folder with some slogans examples. These slogans were in English and Spanish in order to help students to understand. These slogans were only options; students could use another slogan if they wanted. After watching the examples, students opened their Publisher presentation to edit their work.

Students could use the Power Point Presentation, google translation, or asked to teacher the translation of their slogans. There were only 20 minutes assigned to finish the task. After this time, students saved their project as an image. The steps were always explained in the screen so that they could observe and do the same. The next step was uploading their advertisement in Edmodo learning platform and then to write a comment in the Padlet application; however, the internet was failing so not all students were able to upload their neither work nor comment in the Padlet application. The last instruction to students was to log out Edmodo platform.

Observations (First day)

The following is a brief description about students' performance during the creating content treatment. The creating content rubric (see Appendix F) applied consisted on logging in to Edmodo learning platform, copy and paste images, information content, project quality, grammar, saving the project, and collaborative work.

Group A

In the Group A, 8 teams (14 students) attended the class. 2 teams worked by themselves because their partners did not went to school.

Computer number 1: The student worked by herself because her classmate did not come to class. She had some problems for logging in to Edmodo learning platform. Moreover, she looked confused and asked for help during the step of looking for the folder "Creating" so that she could copy and paste an image. She could copy and paste the image but she only wrote one phrase and she did not write it properly. This student achieved to save her project but it was incomplete.

Computer number 3: Students logged in to Edmodo platform without problems. They worked very well together because they shared the computer. They copied and pasted the image in Publisher application and wrote the words in the document. However, they did not finish their project because they got distracted and they did not follow instruction.

Group B

In the Group B 8 teams (14 students) attended the class. 2 teams worked by themselves because their partners did not went to school.

Computer number 5: Students easily logged in to Edmodo platform. Also, they had no problems while using the computer to copy and paste the image from Edmodo to publisher application. They use properly the Publisher application when writing the words requested and saved their project without problems.

Computer number 4: This student worked by himself because his partner did not come to class. He did log in to Edmodo platform easily. Moreover, he had a good manage of the computer when copied and pasted the image. However, he did not write all the phrases requested by the researcher, but he did a good presentation because he added more images in his work. This student could save his project in the computer without any difficulty.

All in all, the principal aim of this activity was to begin to create the students' advertisement to the following class. This goal was achieved because all the students began the creation of their advertisement. During this class it was observed some improvements in students' performance to log in to Edmodo and managing the computer to create their presentations. However, some students did not finish the task properly because of the time and some difficulties using the Publisher application.

Observations (Second day)

The following is a brief description about students' performance during the class. The creating content rubric (see Appendix F) applied consisted on logging in to Edmodo learning platform, copy and paste images, information content, project quality, grammar, saving the project, and collaborative work.

Group A

In the Group A, 8 teams (12 students) attended the class. Four teams worked by themselves because their classmates did not went to class.

Computer number 1: This team did a great job, even though one of the students did not come to the previous class, she followed the instructions and learned to manage the publisher application without so many problems. They decorated and translated the message of their advertisement. Moreover, they worked very well together. They did not upload their work because of the internet, but they achieved to do their reflection.

Computer number 4: Students were very confused during all the activity. They had many doubts about how to improve their presentation. They also had some problems using the translator in the activity. Moreover, they did not finish their advertisement because they did not know how to manage the computer and the application. Students did not complete properly the activities assigned.

Group B

In the Group B, 7 teams (11 students) attended the class. 2 teams worked by themselves and 1 complete team did not attended the class.

Computer number 7: Students in this team had three students and worked very well together because they shared the computer and helped each other's. They had some doubts about how to modify their advertisement but they solved it together. They used translator in a nice way and translate their advertisement from Spanish to English. They saved their work in the computer, but they could not upload it because of the internet. Finally, they wrote a comment about the class in Padlet application.

Computer number 8: Students had many problems while using the computer and editing their advertisement. Students were not able to put an image and words on it. They saved their project unfinished in the computer but did not upload to Edmodo platform. Their work was not in English and did not comment the Padlet application.

In general both groups faced some problems using managing the computer and the application for modifying their advertisement; however, they did a nice job and most of them finish the task. Only one student was able to upload his advertisement to Edmodo platform because the internet connection.

Sharing content treatment

During this day of intervention the main goal was to share students' advertisement using the computer and also doing a presentation in front of the class. However; the internet connection failed again. Two days were assigned to present students' advertisements. The first class was divided in 3 steps. The first step was that students logged in to Edmodo learning application. The second step students had to upload their advertisement in a filled called "Share your advertisement", but there were internet connection difficulties that cause some delays during the activity. In order to save time, researchers save the projects of the students in a flash memory so

that students can share their presentation in front of the class. A few minutes passed while saving students' work. Meanwhile researcher save the projects, students agreed about how expose their work and Researcher 1 passed for each team with some piece of papers with the order of the presentation. The final step was presenting their projects. After picking a number, Researcher 1 explained the points to considerate while they presented their projects. It was clarified that the presentation could be in Spanish and English. The most important was that students mentioned the parts of the advertisement in English.

The second class teams who missed exposing presented their works. Students arrived to the computer lab 10 minutes late because they were presenting an exam. When they arrived, they were asked to sit in the middle of the classroom in order to continue with students' presentation. In the Group A, four pairs were missed and in the Group B, seven pairs. The activity instructions were remembered to students and then they started to present their projects.

Observations (First day)

The following is a brief description about students' performance during their presentation. The following points were taking into account in the rubric: sharing, presentation, students' attitudes, and collaborative work.

Group A

In the Group A, 8 teams (16 students) attended the class. Four teams worked by themselves because their classmates did not went to class.

Computer number 1: This team exposed in a nice way their advertisement. They introduced themselves in English and mentioned all the parts of the advertisement. Besides that

they gave a good explanation about their opinion of technology. They worked well together; their collaborative work was excellent because they did not have any problems.

Computer number 3: Students explained very well their advertisement. One of the students said all the parts of the advertisement in English and gave a nice explanation about their work. Despite they work well together, they did not organize their presentation because on girl spoke less than her classmates.

Group B

In the Group B, 8 teams (14 students) attended the class. 2 teams worked by themselves. It is important to mention that only 1 team was able to present their work because of the time.

Computer number 1: This team was the first in passing to expose their advertisement. They did a good presentation. One of the students explained the parts in English and commented why they chose the image and shared her opinion about technology. Nevertheless, her classmates did not participate, because she was nervous.

All in all students' performance was nice. However, some setbacks during students' performance were faced because some students did not want to talk or did not want to pass in front; even though, researchers encouraged them to do it. Also, most students were a little nervous and did not talk a lot.

Observations (Second day)

The following is a brief explanation about children's performance doing the task. The following points were taking into account in the rubric: sharing, presentation, students' attitudes, and collaborative work.

Group A

In the Group A, 8 teams (16 students) attended the class. 2 teams worked by themselves. It is important to mention that only 1 team was able to present their work because of the time.

Computer number 8: Students in this team made a good presentation, but they only mentioned two parts of the advertisement. They were nervous about speaking in front of the class but show a good attitude in sharing their work. They gave their opinion about the use of technology in classes and explained their advertisement.

Computer number 6: In this team only one student explained all the advertisement. He introduced himself in English and mentioned the parts of the advertisement. Besides that, he explained the advertisement, the image and gave his point of view in the use of technology. He did a great job in his presentation. However, his classmates did not want to speak and said that she did not know the parts of the advertisement.

Computer number 2: This team did a nice job. They mentioned the parts of the advertisement in English. Also, they explained their image and their opinion about the use of technology.

Group B

In the Group B, 8 teams (16 students) attended the class. All students attended the class.

Computer number 4: Students did not share their presentation in Edmodo learning platform because of the internet. It is important to mention that they introduce themselves in English. Students had some problems explaining the parts of their advertisement but this team mentioned three of the parts of the advertisement. Besides that, they explained their opinion about the use of the technology. This team said that it is good the use of technology but it has a

disadvantage because you can find bad things online. They explained that technology can be good and bad at the same time.

Computer number 6: This team did not present themselves in English. They tried to upload their work in Edmodo learning platform but they could not because of the internet. Students in this team show an excellent work team because they said the parts of the advertisement and explained why they like technology.

Generally speaking, most of the team achieved the task because they mentioned at least three parts of the advertisement, explained the image and expressed their opinion about the use of technology. It was interesting to notice that most students agreed that technology had a good and bad side, but they considerate important to take care of its use.

Post-test activity

This activity followed the same steps that the pre-test activity. It aimed to observe students' digital competences after the intervention. We used the same web page (Jimdo) to do the post-test activity to children but using weather topic in order to review vocabulary. Weather vocabulary was selected because the English teacher suggested that they had already learned it. A time schedule was planned for the activity. Some students were already familiarized with the dynamic of the activity; however Researcher 2 gave a brief explanation. The pre-test activity had 5 steps based on the digital competences of searching for information, multimedia management, creating content and sharing content. The first step was that students choose a link. From the link "Choosing a link". Those links had different images about weather vocabulary. In order to review the topic students had to observe the images and choose 5 words from the vocabulary and write those words in the Power Point application. Students wrote the words, and then were asked to

open the following link “Working together”. The link “Working together” consisted in an online memory game. The next step in the activity was “Creating”. Teacher indicated students to open the link “creating” in Jimdo web page so that they can watch some images from weather.

Students had to open the Power Point application to copy and paste five images from the web page. Then students must place the image in the word previously written. After that, students saved their project in the computers with their first and last names. Finally, students opened the last link “What I create” in Jimdo web page. In this link a Padlet application was showed.

Students had to share their presentation in Padlet application.

Observations

What follow is a brief description about students’ performance in post-test activity. The post-test rubric (see Appendix C) covers 5 steps and the digital competences of searching for information, multimedia management, creating content, sharing content and collaborative work. The following is a brief description about some pairs during students’ performance

Group A

In the Group A, 8 teams (14 students) attended the class. 2 teams worked by themselves because their peers did not went to class

Computer number 4: Students’ performance doing the activity was great; they complete every step of the post-test activity. Moreover, they were an excellent example of the collaborative work. One of the students used the mouse and the other the keyboard. They worked in this way some class before.

Computer number 8: Students did all the activities in the post-test. They did the first 2 activities in a good way, but presented some difficulties while creating the words required. It is important

to mention that even they only wrote 3 words, they followed teacher's instruction and they decorated their presentation. Students achieved to the all the task of the post-test even they faced some difficulties. Moreover, they worked very well together.

Group B

In the Group B, 8 teams (17 students) attended the class. All teams were complete.

Computer number 3: Students in this team made a nice job. These students did not present problems doing the post-test activity. They wrote down the five letters in Power Point application. Also, they copied and pasted the images and save their project in the computer. Besides that, students decorated their presentation background and worked very well together.

Computer number 5: Students in this team made a great job. They completed every task during the post-test activity. They wrote down the five words and copied and pasted the images in Power Point application. They shared the computer and help each other to solve the activities. Students in this team decorated their presentation. Something important to mention is that they wrote down the title in Spanish instead of English.

In general, students in both groups made a great performance in post-test activity. They managed the computer very well and wrote down weather vocabulary. All the pairs in both first and second group completed the task about creating a presentation about weather vocabulary. However, in the second group more pairs put a color background in their presentation than in the first one.

Applying a survey

This last class was dedicated to apply a survey to students in order to know their feelings during the activities of the month. This survey had five different questions about the activities of

the digital competences: looking for information, multimedia management, creating content, sharing content using the computer and sharing content in front of the class, and creating content. Students logged in Edmodo learning platform in order to answer the survey. Researcher 2 explained to students the dynamic of the activity and showed them an example. Students voted according to their preferences. There were four different options (see Figure 3.9) in every section. Besides that, students had to justify their answer with a comment.

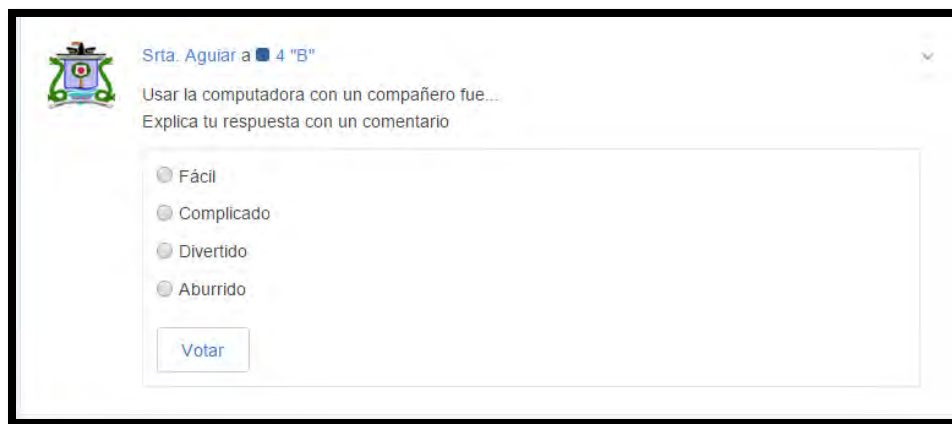


Figure 3.9 Survey questions

All questions were in Spanish so that students understand the question. Every section had to be answered in a specific time and according to teacher's instructions. Group A lasted 45 minutes doing the activity, because the internet connection was not working. The second group had time problems because they were only 25 minutes left of the class, so researchers decided asked for a few more minutes to finish the activity. Researchers talked to the principal and the teacher in charge to be agreed about the schedule of activities. When finished the activity researchers said goodbye to students and then they went with the principal of the school and the teacher in charge of the group to express gratitude for all their help and support during this month of treatment.

All in all, despite the internet connection difficulties, students answered all the questions of the survey. Moreover, it was noticed that students worked well together and without multimedia management difficulties during the activity.

3.4 Data analysis

This research was conducted to identify the effects of using ICT resources in an elementary school. What follows is a description of how the data was gathered and lately analyzed.

Firstly, in order to work in a better way with students from fourth grade, we chose one group research design. According to Morell & Carrol (2010) this type of design is often used with a single group. Data are gathered from the group (a pre-test) before the intervention occurs (a curriculum unit, perhaps) and then more data are gathered from the group the group after the intervention (a post-test). In analysis the data group, means scores are compared using a paired sample t-test in SSPS which looks for statistically significant differences in the pre and post scores. This was helpful to answer the hypothesis and the first question of the study research. The results of the pre-test and post-test were extracted and analyzed using a TPACK format. This format includes some rubrics that were used to assign a grade. The rubric includes the fourth digital competences to analyze (see Appendix B). In case a student had no taken the questionnaire it was codified with a (0) meaning invalid case.

Secondly, the data was collected through a semi-structured questionnaire, which was adapted to children. This kind of questionnaire was helpful to measure the results of students' attitudes about the use of ICT resources and learning English as a second language. According to Sleger & Shohamy (1998) in second language acquisition research, questionnaires are used mostly to collect data on phenomena which are not easily observed, such as attitudes, motivation, and self-

concepts. The semi-structured questionnaire had 7 sections. 33 questionnaires were printed; however, only 32 questionnaires were labeled with a number of the total of students from 1 to 32 because one child was missed. Each section of the questionnaire with the answers of the students were wrote down in a excel document for their analysis. The questionnaire sections 1, 2, 4, and 5 that responds 4 of the research questions were analyzed using the SPSS (Statistical package for Social Science) version 21. In order to do the analysis, it was necessary to codify the data gathered from the questionnaire. In case a student had no taken the questionnaire it was codified with (0) meaning invalid case.

The data from the section 1 and 2 were codified as follows:

- Number (1) was used to replace the answer: *never*.
- Number (2) replaced the answer: *seldom*.
- Number (3) replaced the answer: *sometimes*.
- Number (4) replaced the answer: *almost always*
- Number (5) replaced the answer: *always*

The data from the section 4 and 5 were codified as follows:

- Number (1) replaced the answer: *disagree*
- Number (2) replaced the answer: *partly agree*
- Number (3) replaced the answer: *totally agree*

Thirdly, students' opinions about the intervention activities were analyzed using questionnaire applied in the Edmodo platform the last day of class. There were a total of 7 questions and each question had 4 options: *easy*, *complicated*, *fun* and *boring*. One question was an example and the other 6 questions were about the activities during the intervention days.

Students ‘duos had to answer a question per competence. For instance, if students thought that sharing content was easy, they vote in the page and then wrote down a comment about it. A total of 15 couples answered the questionnaire on the Edmodo learning platform; one did not assist to the class.

Fourthly, according to Pattern (1987) the interview was analyzed through concepts or categories: topics or patterns, codification of the collaborative form in order to make a reliable analysis. The interview lasted one hour, after the English class, it answered the correspondent two last research questions of this study.

The statistical analyses were compared between the results of the questionnaire, pre-test, and post-test by scoring the answer of the group. In order to do this, the scores were analyzed with SPSS program when paired sample t-test was used. These statistical tables had to be analyzed in terms of frequency and percent respectively. Thanks to these tables it was able to analyze the development of students’ digital competences before and after the intervention. Moreover, it confirmed the hypothesis made at the beginning of the study. ANOVA was helpful to do this because it is used to examine the difference in students. All the data was analyzed carefully in order to have a profitable results in the study and in order to explain a clear conclusion about the topic.

Statistical analysis and its procedure

What follows is a more detailed description of how the statistical analysis was done. The data gathered through the questionnaire, the pre-test and post-test, and the intervention was analyzed as follows:

The questionnaire data was analyzed by comparing the results of the group before the application of the pre-test and post-test and the intervention. The frequency of use and the mean score of opinion were analyzed.

Scores from the pre-test and post-test were compared in 2 ways:

1. Scores obtained by the group after the application of the 4 pre-design activities to diagnose the corresponding digital competences.
2. Scores obtained in the 4 post-test activities by the group after the treatment of five weeks to diagnose the corresponding digital competences.

Researchers' of the study observations and a final task about the activities made during the intervention were made during all the sessions. Providing the qualitative component of this research the interview was analyzed through concepts or categories: topics or patterns, codification of the collaborative form in order to make a reliable analysis.

CHAPTER 4 RESULTS AND DISCUSSION

After introducing the topic of the study, presenting the theoretical framework and some related studies of this research, and describing the research method of this study, this chapter aims to report the results found after running the data collected in order to respond the hypothesis and research questions indicated in the first chapter of this study. This chapter is divided in four sections. The first section presents the analysis that aims to confirm or dismiss the research hypothesis (RH) of the study after intervention weeks, including the analysis of the pre-test and the post-test. Also, it helps to answer the first research question (RQ). The second presents the analysis and results of the questionnaire that respond from 2 to 5 of research questions (RQs) of the study. The third section presents the analysis and results obtained of the treatment that responds the sixth question of the study. Finally, the fourth section presents the analysis of the interview that aims to respond the last 2 research questions (RQs) of the study.

4.1 Research questions and hypothesis

RH1 Students will improve the development of the digital competences through being systematically trained in the use of ICT resources in an EFL context.

The tests

As it has been mentioned two tests were applied: the pre-test and the post-test. The pre-test (see Appendix B) was applied before the weeks of treatment in order to do a diagnostic of the digital competences of the students before the treatment. The post-test was applied after the treatment in order to do a second diagnostic of the digital competences of the students after the weeks of treatment for developing digital competences using ICT resources while learning English.

Pre-test and Post-test

One of the instruments used in the analysis of the treatment was the application of pre and post-test to students. In order to analyze the results, it was used a paired sample t-test in SSPS. The main goal of this was to confirm the hypothesis about students improves their digital competences while they are learning English and to identify which digital competence do they develop after the treatment. Table 4.1 shows the means scores of the students' digital competences during the pre and post-test. During the pre-test the digital competence of *searching for information* had a mean score of 2.06 while in the post-test had a mean score of 3.00. Making a comparison between searching 1(pre-test) and searching 2 (post-test) it was found a statistically difference ($t= 3.337$, $df= 15$, $p < = .004$), meaning an improvement after de treatment. The digital competence of *multimedia management* had a mean score of 1.81 in the pre-test compared to 3.00 in the post-test. It was found an improvement between multimedia 1 and multimedia 2 ($t= 4.069$, $df= 15$, $p < = .001$). The digital competence of *creating content* has a mean score of 1.81 in the pre-test compared to 2.75 in the post-test. It was found a progress between creating 1 and creating 2 ($t= 3.033$, $df= 15$, $p < = .008$). The digital competence of *sharing information* has a mean score of 1.81 in the pre-test contrary to 2.37 in the post-test. It was found an improvement between sharing 1 and sharing 2 ($t= 1.346$, $df= 15$, $p= .198$), but not statistically significant. The digital competence of *collaborative work* had a mean score of 2.31 in the pre-test contrary to 2.75 in the post-test, but not significant. It was found an improvement between collaborative 1 and collaborative 2 ($t= 2.951$, $df= 15$, $p < = .010$).

Table 4.1 Means scores of digital competences Pre-test (1) and Post-test (2)

Estadísticos de muestras relacionadas					
		Mean	N	Desviación típ.	Error típ. de la media
Par 1	Searching1	2.0625	16	1.12361	.28090
	Searching2	3.0000	16	.00000	.00000
Par 2	Multimedia1	1.8125	16	1.16726	.29182
	Multimedia2	3.0000	16	.00000	.00000
Par 3	Creating1	1.8125	16	1.10868	.27717
	Creating2	2.7500	16	.68313	.17078
Par 4	Sharing1	1.8125	16	1.27639	.31910
	Sharing2	2.3750	16	.95743	.23936
Par 5	Collaborative1	2.3125	16	1.19548	.29887
	Collaborative2	2.7500	16	.68313	.17078

Table 4.2 shows that the mean score of the pre-test was of 1.9625 contrary to 2.7750 in the post-test showing an improvement ($t= 2.951$, $df=15$, $p < = .010$).

Table 4.2 Results of pre-test and post-test

		Mean	N	Desviación típ.	Error típ. de la media
Par 6	Mean_Pretest	1.9625	16	1.05885	.26471
	Mean_Posttest	2.7750	16	.41231	.10308

Discussion: Table 4.1 indicates the principal differences in the digital competences of the students in the pre and post-test. All the digital competences showed to have an improvement; however, it can be observed that the last three (creating content, sharing information and

collaborative work) have a less progress than the first ones (searching information and multimedia management). Even though that the last three digital competences have a less progress in Table 4.2 it can be observed that the hypothesis established is confirmed.

Based on the results the hypothesis can be statistically confirmed since students improve their digital competences after the treatment while they were learning English. As the work of Jaramillo (2003) showed, there are improvements in students' development. It is demonstrated that the use of ICT resources can help students to transmit knowledge, bolster knowledge, and developing skills to use the computer. Also, the use of ICT resources help to support other subjects, for example English.

RQ1. What digital competences do children develop after the treatment using ICT resources?

In order to analyze these questions it was necessary to use paired sample t-test in SSPS. Figure 4.3 presents the results of each digital competence developed before and after the treatment.

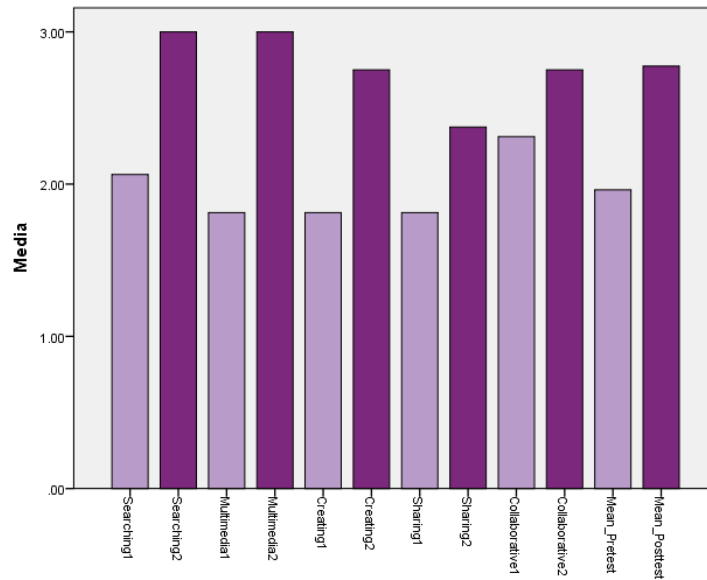


Figure 4.1 Students' digital competences pre-test (1) and post-test (2)

It can be observed that the competences more developed by students are searching for information and multimedia management. During the treatment students gave evidence of an improvement in these competences. They managed very well the computer to watch links and doing the multimedia activity. It could be because the multimedia activity consisted on a game and students liked because they could play in the computers. The creating content and collaborative work competences had a tie in improvement. Even though all the competences had an improvement, these two competences had lower fewer score in the post-test. The main reasons of these were because students had some problems in using the ICT resources for creating a presentation during the treatment. During the collaborative work, some students had a bad attitude sharing the computer to do the activity. The competence with the fewer mean score is sharing information. One of the reasons is because there were technical fails during the treatment and the application of the post-test. The internet connection was a key factor because some students were not able to share their presentation. In short, students improved all their digital

competences worked during the intervention. However, there were some technical issues that interfere on the development of the activities.

As it can be seen the use of ICT resources for developing digital competences is a suitable idea for education. As it can be observed in Ramirez (2007) the use of digital stories to improve listening comprehension had a positive result in students because they improved in this skill. The integration of ICT is a positive factor to improve students' English performance and develop digital competences.

RQ2. Why do students use ICT resources for?

In order to analyze these questions it was necessary to use the second section of the questionnaire with a total of 10 questions applied at the beginning of the study (see Appendix A). Statistical Table 4.3 represents the results of the question.

Table 4.3 Activities done in the computer by students

Statistical descriptions					
	N	Minimum	Maximum	Mean	Desv. típ.
Use the computer to look for information to do my homework	32	1.0	5.0	3.750	1.2952
Use the computer to look images to do my homework	32	1.0	5.0	3.500	1.2700
Use the computer to download music	32	1.0	5.0	3.000	1.6656
Use the computer to talk to my friends or family	32	1.0	5.0	2.875	1.5606
Use the computer to save my homework	32	1.0	5.0	2.813	1.4013
Use the computer to share web pages with my friends or family	32	1.0	5.0	2.281	1.6507
Use the computer to download files	32	1.0	5.0	2.250	1.5240
Use the computer to share my homework	32	1.0	5.0	2.063	1.2427
Use the computer to do Power Point presentations	32	1.0	5.0	2.063	1.3898
Use the computer to send my homework to the teacher	32	1.0	5.0	1.250	.8032
N válido (segúnlista)	32				

The Table 4.3 represents how often students use the computer to specific tasks. Having a mean score of 3.75 it can be observed that most students use the computer to look for information to do homework. Moreover, it shows that with a mean score of 3.5 students use the computer for looking images to do homework. The lower mean score in the chart is 1.25 which belongs to the use of computer to send students' homework to their teacher.

In conclusion, Table 4.3 points out that students use computer to do their homework for looking information and images, but they do not used for other activities such as doing presentations, or saving their works. Hernandez & Marin's work (2008) pointed out that students use the ICT resources for academic purposes; however, it is need to work in students abilities for

this purpose. It is the same in students of fourth grade, they use technology for the school; nevertheless, it is required that they learn how to use it properly for educational purposes.

RQ3. How often do children use ICT resources for educational purposes?

In order to analyze these questions it was necessary to use the first section of the questionnaire with a total of 12 questions applied at the beginning of the study (see Appendix A). Statistical table 4.5 represents the results of the question.

Table 4.4 Frequency in using the computer for academic purposes

Statistical Descriptions					
	N	Minimum	Maximum	Mean	Desv. típ.
Use the computer to be on internet	32	1.0	5.0	3.438	1.5645
Use the computer to play	32	1.0	5.0	3.406	1.4337
Use the computer to do homework	32	1.0	5.0	3.188	1.2811
Use the computer to look for unknown English words in dictionaries on internet	32	1.0	5.0	2.813	1.3305
Use the computer to listen to music in English	32	1.0	5.0	2.813	1.5332
Use the computer to talk to my friends or family	32	1.0	5.0	2.813	1.6740
Use the computer to watch videos in English	32	1.0	5.0	2.344	1.4053
Use the computer for my classes	32	1.0	5.0	2.313	1.2556
Use the computer to download applications	32	1.0	5.0	2.219	1.5808
Use the computer to practice English on the internet	32	1.0	5.0	2.156	1.1103
Use the computer to upload photos on the internet (Facebook)	32	1.0	5.0	1.969	1.3792
Use the computer to upload information	32	1.0	5.0	1.938	1.1897
N válido (según lista)	32				

Table 4.4 represents the mean scores in frequency about using the computer to academic. The highest mean score is 3.43 indicates that students use the computer to being on internet.

Also, it is shown with a mean score of 3.43 that students use the computer to play and the mean score of the use of the computer to do homework is 3.18. With a mean score of 2.81 there is a tie between the use of the computer for looking a meaning in an English dictionary on the internet, the use of the computer to listening music in English, and the use of computer to chat with classmates or family. Uploading information with a mean score of 1.96 and sharing photos with a mean score of 1.93 are the less used by students.

All in all, it is clear to see that students use the computer mostly for entertainment and less for academic purposes such as looking for unknown words in English dictionaries and for their classes.

RQ4. What are students’ attitudes about learning English?

In order to analyze these questions it was necessary to use the fifth section of the questionnaire. It had a total of 6 questions applied at the beginning of the study (see Appendix A).

Table 4.5 Students’ opinion about English subject

Statistical descriptions						
	N	Minimum	Maximum	Mean	Desv. típ.	
Studying English is funnier using the computer	32	1.0	3.0	2.688	.6927	
Studying English is important	32	1.0	3.0	2.625	.6599	
Studying English is fun	32	1.0	3.0	2.500	.6222	
Studying English is complicated	32	1.0	3.0	2.219	.7507	
Studying English is easy	32	1.0	3.0	2.125	.7071	
Studying English is boring	32	1.0	3.0	1.469	.7177	
N válido (segúnlista)	32					

The highest mean score belongs to students who feel that English is funnier using the computer with 2.68, English is important with 2.52, and English is fun with mean score of 2.5.

However, Table 4.5 demonstrates that most of them think that English is fun, but they consider English complicated with a mean score of 2.21. Besides that, an interesting fact is that students consider that English is better if they use the computer to learn it with a mean score of 2.68 and a very few consider that English is not boring with a mean score of 1.469.

As a conclusion, about the fifth section of the questionnaire students' attitudes about studying English is that they really like English and most of the children agree that English is fun.

RQ5. What are students' attitudes towards the use of ICT resources?

In order to analyze these questions, it was necessary to use the fourth section of the questionnaire. It had a total of 4 questions applied at the beginning of the study (see Appendix A).

Table 4.6 Students' opinions about computers

Statistical descriptions					
	N	Minimum	Maximum	Mean	Desv. típ.
It is fun to use the computer/Tablet/Laptop	32	1.0	3.0	2.719	.5227
It is fun to use the computer to study	32	1.0	3.0	2.563	.7594
It is fun learn about computers	32	1.0	3.0	2.406	.7560
It is fun to use the computer in classes	32	1.0	3.0	2.156	.9873
N válido (según lista)	32				

Table 4.6 gives a panorama about students' attitudes about the use of technology for their classes. It can be observed that the higher mean score of 2.71 agree that using the computer/tablet

or laptop is fun to students. The statement about using the computer to study is fun has a mean score of 2.5. The statement about using the computer for classes is fun has a mean score of 2.15.

As a conclusion of the fourth section of the questionnaire, students in the group present an interest in using the computer. It can be seen that students consider fun the use of computer and they like using it for their classes. As Aghara & Hadidi (ICEEPSY, 2001) pointed out in their results, the use of digital games to teach vocabulary to children had a positive effect. They showed that using digital games in one group and traditional material in another make a difference. The group which used digital games to learn new vocabulary had a better performance. They mentioned that ICT resources gave students motivation and facilitated their learning process. So, it can be seen that students had a great attitude to use ICT to learn a subject. Children are very interested in learning English subject and it is better if they use technology.

RQ6. What is the reaction of the group about the use of ICT resources for educational purposes?

In order to analyze this question it was necessary to apply a questionnaire at the end of the intervention. The questions were answered in the Edmodo learning platform. There were a total of 6 questions per each digital competence. Figure 4.1 represents the results of each digital competence.

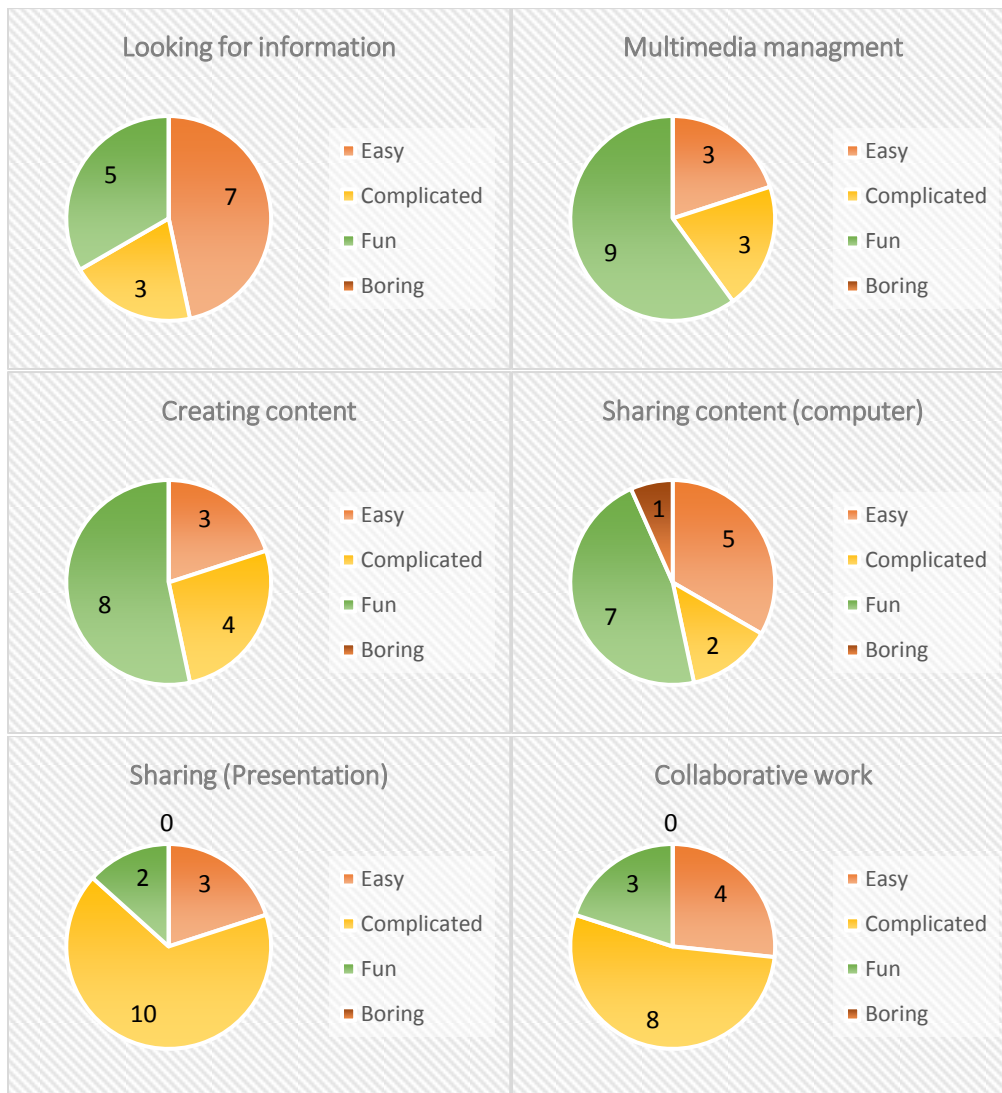


Figure 4.2 Students' opinion about digital competences

Figure 4.2 demonstrates that most students think that looking for information was easy. Some students express that it was easy because they used Edmodo learning platform and because they worked in teams.

Team 1: Fue muy fácil porque fue en Edmodo pero en internet también es fácil nos gustó mucho porque la información fue muy informativa y la escogimos en equipo

Most students agree that using a multimedia application to practice a topic was fun. Some students mention it was fun because they work in teams and because they learn many things.

While they were using a multimedia application in the class, they were having fun and were simulating a game.

Team 2. Fue divertido porque trabajamos en equipo

Team 3. Fue divertido x q aprendimos muchas cosas en ingles en la computadoras gracias a las maestras

Most students considered that creating content was also fun because they use many colors and images to do the activity. In contrast, there were a high number of students who considered that creating content was complicated because they did not know how to use the application and the meaning of some English words.

Team 4. Fue divertido por que pusimos imágenes y muchos colores

Team 5. Para nosotros fue algo difícil hacer el producto en ingles por que no sabíamos usar la computadora y no podíamos entender las palabras

It was interesting find out that for most students sharing content through the computer was funnier than sharing it in front of the class because most of them were shy. Some students commented that they wanted to share their information and they liked because it was fast to share it.

Team 6. A nosotros se nos hizo divertido porque queríamos compartirlo con los compañeros

Team 7. Fue fácil porque no nos costó mucho tiempo

Finally, it was interesting to notice that most students thought that working with a partner during all the classes was complicated. Students mention that it was complicated because the different personalities of their partners.

Team 8: Fue complicado porque es muy travieso

Team 6: Fue complicado porque nonos poníamos de acuerdo y no me dejaba usar la computadora.

As a conclusion, it can be seen that students' opinions are variate about the use of ICT resources for their English class but most of them were happy using ICT resources during the treatment. They showed interested in every classes and have fun were they were learning a second language using the computer.

4.2 Interview

The interview was made in Spanish in order to avoid misunderstandings. Some parts of the interview are presented below and after a brief explanation. As it was mentioned before an interview at the middle of the treatment week was carried out in order to answer the following research questions:

RQ7.What does teacher do with ICT resources for her English class?

- R: ¿Usted ha usado alguna herramienta o recurso para la enseñanza del inglés?
- T: *Si, durante mis clases videos que están en línea, en internet, también algunos que tienen juegos donde relacionan vocabulario en ingles*
- R: ¿Ha utilizado alguna plataforma en internet como recurso para la enseñanza del inglés?
- T: *Plataforma en si no, solo algunos como links donde traen ejercicios actividades para los niños*
- R: Recuerda el nombre de los link, o son en línea
- T: *Son en línea*
- R: ¿De qué manera usa esos recursos en sus clases de inglés?

- *T: Uso la pantalla interactiva que tiene internet directo y los niños pasan y hacen las actividades*
- *R: Podría mencionar alguna página o recurso que sea de utilidad para la enseñanza de inglés de los niños*
- *T: En el Cuadernia que he utilizado algunas veces más para crear mis lesson plans pero puedes agregarle los ejercicios*

According to the teacher's answer during the interview, she mentioned that she uses some videos activities and games online where students can practice vocabulary. Besides that, during her classes she uses the interactive screen where students pass in front of the class and do activities in English. She mentioned that she uses a page called *Cuadernia*, which is a useful page where a teacher can create their lesson plans and find some activities to do with her students.

RQ8. What does teacher express about students' digital competences in English learning process?

- *R: ¿Qué tipo de trabajo hacen los niños en la computadora para la clase de inglés, por ejemplo buscan información?*
- *T: Pues en mi caso no cuentan con esas habilidades de buscar y navegar en internet lo que ellos hacen es mayormente jugar así en inglés*
- *R: No buscan información, ¿Usted se las das?*
- *T: No, yo les proporciono la información o le doy el link, les digo que escribir y ellos lo buscan*
- *R: ¿Han creado alguna presentación de PowerPoint o un documento en Word?*
- *T: Durante mi clase no*
- *R: ¿Han usado videos o música para que les ayude a su aprendizaje?*
- *T: Eso si lo saben buscar, videos es lo que les gusta*
- *R: ¿Han hecho uso de recursos multimedia, por ejemplo hot potato o alguna en línea?*
- *T: Ha duras penas saben usar el buscador*
- *R: Bueno este sería el término de la sección dos. Am la última sección es recomendaciones ¿Cómo ha sido su experiencia en el uso de los recursos TIC para la enseñanza del inglés?*
- *T: Mi experiencia, pues no ha sido muy buena, porque los niños se supone ya deben tener el conocimiento de cómo usar las computadoras, pero no todos cuentan con una computadora en casa, entonces primero tengo que darles conocimiento de cómo usarlos y después tratar de implementar mis actividades y el poco tiempo que tengo con ellos durante la clase.*

The teacher expressed that students do not have the skills to looking for information online, she clarified that most of the time students only play games in the computer because is easy for them. When some activity needed to be done, teacher gave them the information or she gave the link of the activity. She told students what to write in the computer in order to find the information or page. Moreover, during the interview the teacher mentioned that students do not know how to find a browser. Also, she pointed out that videos are easy to find for students. The teacher added that students do not have the abilities to use the computer so it makes difficult to apply it in her English class. The reason of this is because she has to teach students how to use the computer and after trying to implement the activities in English to the computers. The teacher said that she does not have much time to do the activities with her students because of the lack of students' knowledge about how to use the computers in classes. One of the reasons that she mentioned is that not all the students have a computer in their home so they face problems in using these resources for their English class.

In short, the teacher agreed that the use of technology in English class is a key in students' learning because they like to use the computer. Students are really interested in managing the computer for their classes. The teacher expressed that students preferred games instead of activities where they have to write. However, most of the children do not show skills in using this resource in classes. She pointed out that it would be a useful idea to teach students how to use the computer properly in order to implement the use of technology in classes. English teacher tried to implement technology in order to catch students' attention and said that this kind of resource might be useful to any subject.

CHAPTER 5 CONCLUSION

After doing the analysis of the result of the pre and post-test, questionnaire, and the teacher's interview; the general conclusion about the topic is proportioned. The analysis of the treatment was presented in chapter 4 where it can be observed that the results were favorable. Many students improve their digital competences using ICT resources while they were learning English vocabulary.

In the following paragraphs the conclusion about the hypothesis, the research questions and the interview are presented. The quantitative and qualitative components are mentioned in order to explain the conclusion of the research. Besides that, the limitations of the study, suggestions for futures researchers and pedagogical implications are presented in this chapter.

5.1 Concluding remarks

The hypothesis about students improve their digital competences after being trained in the use of ICT resources in a EFL context was proved since the results of the pre-test has a mean score of 1.9625 in contrast to a mean score of 2.7750 in the post-test, where ($t=2.951$, $df=15$, $p=.010$). This was a favorable result because there was an improvement in students' digital competences. All the digital competences appeared to have an improvement; however, the competences that show a better progress were *looking for information* and *multimedia management*. It was surprisingly to find that students were really happy with the use of the ICT resources for their English class.

In conclusion, it can be said that students improve the level of the digital competences after the treatment. By the end of the post-test, it was observed that students had a better idea

about what they had to do because the activities that were applied in the pre-test and post-test were applied during the treatment.

There is no doubt that an ICT resource to develop digital competences is a suitable resource in order to catch students' attention. Also, results proved that students use the computer to look for images and to be online to do their homework. Also, students use the computer to play games or download music.

The results about the attitudes of children to learn English and use ICT resources are favorable. The higher mean score in the results proved that students think that using the computer/tablet/ laptop is fun. Also, with a mean score of 2.688, students reported that English is fun when using the computer. An important fact is that even though students consider English as important and fun, they consider it complicated. Combining ICT resources and English can be advantageous because students' attitudes about using them are positive. They were interested and opened to work in the computer for their English class.

The final conclusion is about the interview. The teacher pointed out that she tries to use the lab computer during her classes; however, the time is not enough because she had to explain students how to use the computer step by step before applying her lesson. Also, the teacher mentioned that she uses some online activities and games for their classes; however, the lack of development of digital competences is a limitation in the classroom. The students have not developed the required digital competences for using the ICT resources at this educational level.

The results about the hypothesis revealed that after the treatment students improved their digital competences in ICT resources while they were learning English. Besides that, it was clear to observe that students were interested to use the ICT resources. Also, they had fun in all the

classes during the treatment. The questionnaire applied at the beginning of the intervention helped to understand students' opinions about English and ICT resources. The integration of ICT resources in education is a key to develop students' digital competences and give them the opportunity to had fun while they are learning a second language. On the other hand, the observations during the treatment proved that students are open to learn a second language while using technology. It is vital that students receive the training about how to manage the computer in order to use it in other classes. This could help to teach students not only technical managing in computer, but to develop digital competences so that they can apply the knowledge in different contexts.

5.2 Limitations of the study

Generally speaking, the treatment was carried out properly. Students' attitude during the treatment was optimistic and they showed a great interest in using the computer for English class. However, some difficult situations were faced while doing the intervention. One of them was the time. The class lasted one hour and 10 minutes and the group size was big, so the class was divided in two parts of 35 minutes for each group. Usually, the first group spent more than 35 minutes to finish some activities so the second group only less than the 35 minutes to do the activities. Most of the time, researchers took 10 more minutes of students recess to finish the activities.

Another limitation was the number of computers in the computer lab. There were only 15 computers but only 12 had internet access so in order to solve the lack of computers for students, it was decided to form pairs. Besides that, the main computer which was a laptop was outdated. The battery was not useful and the laptop needed to be connecting to the electricity in order to use it.

Therefore, the internet access was a problem during the treatment. For instance, the internet access failed the day of students' presentation in the classroom so they could not upload their works. A plan B was required so researchers had to use a memory device in order to save time and achieved the activity of sharing. However, it took time from the class and students did not finish all the presentation as was planned.

Besides that, students' skills about using the computer were a drawback in the intervention because some of them spent a lot of time entering to the Edmodo learning platform or doing the activity. It was necessary to repeat the instructions several times because some students did not get them. For that reason, it is important that students receive training to use computers. Basic activities such as close or minimize a document in the computer was a problem for some of them. Researchers and teachers need to work in this aspect if they want to work with computers in their classes.

At the beginning of treatment, there were some misunderstandings with the teacher in charge of the group. These were related to time, learning activities, and schedule. Researchers talked with the teacher and clarify all the doubts about the activities and time. After talking with the teacher, the panorama changed and teachers' attitude was good and supported during the following activities of the treatment.

Students' access to Edmodo platform was another drawback. Most of the students did not remember their account, username, or passwords. This drawback delayed the schedule and the activity so it was required to hurry up in order to accomplish it. In order to solve this, some flashcards were made so that students can see and remember their username and enter without problem to Edmodo learning platform. However, this did not work and it was necessary to

change all students' password for a simple one. All students had the same password in order to avoid the same problem.

The limitations described above can be useful to future investigation in this topic and might be useful order to avoid them.

5.3 Suggestions for future researchers

Studies about using ICT resources for the development of digital competences in children are a topic that might be useful for teachers, researches, and authorities. Most researchers have doubts about implementing ICT resources with children and they might consider it, challenging. This section presents some suggestions in order to improve the treatment in future researches about this topic.

One of the suggestions about working with children is to prepare all the material for them. For example, if teachers use an educative platform or a web page for their classes, they need to provide students the same passwords to everybody. Because students tend to forget their password and it takes time for the classes. As teachers, it is necessary to save time in order to finish the activities.

Having a discipline plan is very useful in order to have the control of students. If a discipline plan is presented at the beginning of the intervention, students will aware about their behavior. Rules need to be settled so the classes can flow as calm as possible. It is important to mention every time the discipline plan before starting.

It is important that researchers of the study take into consideration the rubrics about the pre-test, treatment and posttest in order to have reliable date for the analysis. At the beginning of any treatment, it is usual that researchers forget some important part so it is important to plan

every single step. It is suggested to write down in a piece of paper the steps of the class in order to give the same instructions to both groups.

Applying ICT resources in English class need to be carefully checked. Researchers of the study may check all the equipment required during the class such as computers, and the internet access, in order to avoid problems during the lesson. Moreover, it is recommended to have a plan B for the classes because the technology can fail and teachers need to be prepared for any situation.

Another suggestion about carrying out a treatment with children is to take into considerations English teacher's advice. Teacher knows their students and it is important to bear in mind what topic can be useful to do the intervention with them. Also, materials, web pages, and presentations used in classes need to be attractive for students.

In conclusion, it is necessary more experimental investigations about the use of ICT resources to develop digital competences in children in an ESL context. The suggestions above can help researchers in this area that had not been deeply explored. It is important to do more investigations about this topic because nowadays technology is a useful resource and children are very eager to learn about using ICT resources for their classes.

5.4 Pedagogical implications

Using ICT resources to develop digital competences in children while they are learning English is a great idea. Students showed a huge interest in classes because they use a computer to do the activities in every class. The use of computers for the English class showed that most of the students wanted to be involved during the days of treatment. Every single class, they had a positive attitude when they arrived to the laboratory classroom. Students were motivated during

the class because they wanted to learn how to use the computer while they were learning English vocabulary. The use of ICT resources for the development of digital competences showed that students were open to acquire teachers' knowledge during the treatment. For that reason, it is essential that teacher be qualified in the properly use of ICT resources. Teachers need to develop digital competences in order to transmit the properly knowledge of these resources to their students in the classroom.

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Appendices

Appendix (A) Questionnaire



¡Hola! Esta encuesta es para saber qué piensas acerca del uso de las computadoras y del inglés. El siguiente cuestionario cuenta con 7 secciones **por favor responde todas las preguntas del cuestionario**. No hay respuestas correctas o incorrectas, todo lo que respondas estará bien.

SECCIÓN 1.

Instrucciones: Encierra en un círculo el número que más se acerque a tu opinión. **Ejemplo:**

Usa la computadora para:

	Nunca 1 	Muy pocas veces 2 	Algunas veces 3 	Casi siempre 4 	Siempre 5
Ver películas	1	2	3	4	5






Usa con frecuencia la computadora para:

	Nunca 	Muy pocas veces 	Algunas veces 	Casi siempre 	Siempre
1. Mis clases	1	2	3	4	5
2. Jugar	1	2	3	4	5
3. Hacer tareas	1	2	3	4	5
4. Descargar aplicaciones (apps)	1	2	3	4	5
5. Estar en internet	1	2	3	4	5
6. Subir información	1	2	3	4	5
7. Escuchar música en inglés	1	2	3	4	5
8. Ver videos en inglés	1	2	3	4	5
9. Practicar en páginas de internet mi inglés	1	2	3	4	5
10. Buscar significados en diccionarios de inglés en internet	1	2	3	4	5
11. Subir fotos en internet (Facebook u otro)	1	2	3	4	5
12. Chatear con mis compañeros o familia	1	2	3	4	5

SECCIÓN 2.

Instrucciones: Encierra en un círculo el número que más se acerque a tu opinión.

Utilizo la computadora para:

	Nunca 1 	Muy pocas veces 2 	Algunas veces 3 	Casi siempre 4 	Siempre 5 
13. Buscar información para mis tareas	1	2	3	4	5
14. Compartir tareas con mis amigos	1	2	3	4	5
15. Hacer presentaciones de Power Point	1	2	3	4	5
16. Mandar mis tareas al maestro	1	2	3	4	5
17. Buscar imágenes para mis tareas	1	2	3	4	5
18. Descargar archivos	1	2	3	4	5
19. Descargar música	1	2	3	4	5
20. Para guardar mis tareas	1	2	3	4	5
21. Compartir páginas de internet con mis amigos o familia	1	2	3	4	5
22. Comunicarme con mis amigos o familia	1	2	3	4	5

SECCIÓN 3.

Instrucciones: Encierra en un círculo el número que más se acerque a tu opinión siendo el 5 el más alto.

Es fácil usar la computadora/ Tablet para:

	Nunca 1 	Muy pocas veces 2 	Algunas veces 3 	Casi siempre 4 	Siempre 5 
23. Hablar con mis amigos o familia	1	2	3	4	5
24. Jugar	1	2	3	4	5
25. Escribir (hacer mis tareas)	1	2	3	4	5
26. Mandar mensajes a mis amigos a través de las redes sociales (Facebook, Twitter)	1	2	3	4	5
27. Buscar páginas para estudiar	1	2	3	4	5
28. Hacer mis tareas en equipo	1	2	3	4	5
29. Crear un documento en Word, Power Point	1	2	3	4	5
30. Buscar información	1	2	3	4	5
31. Editar o modificar fotos	1	2	3	4	5


SECCIÓN 4.

Instrucciones: Responde que tan de acuerdo estás con las siguientes oraciones. Encierra en un círculo tu respuesta. **Ejemplo:**

Es entretenido...

	En desacuerdo 	Más o menos 	Totalmente de acuerdo 
Ir a la escuela	1	2	3

Opino que es entretenido...

	En desacuerdo 	Más o menos 	Totalmente de acuerdo 
32. Usar la computadora/Tablet/Laptop	1	2	3
33. Aprender más acerca de computadoras	1	2	3
34. Usar la computadora en las clases	1	2	3
35. Usar la computadora para estudiar	1	2	3

SECCIÓN 5.

Instrucciones: Responde que tan de acuerdo estás con las siguientes oraciones. Encierra en un círculo tu respuesta.

Considero que estudiar inglés es...

	En desacuerdo 	Más o menos 	Totalmente de acuerdo 
36. Divertido	1	2	3
37. Aburrido	1	2	3
38. Complicado	1	2	3
39. Fácil	1	2	3
40. Importante	1	2	3
41. Es más divertido usando la computadora	1	2	3

SECCIÓN 6

Instrucciones: Responde que tan de acuerdo estás con las siguientes oraciones. Encierra en un círculo tu respuesta

Me gustaría...

	En desacuerdo 	Más o menos 	Totalmente de acuerdo 
42. Aprender más acerca de computadoras para aprender inglés	1	2	3
43. Me gustaría aprender inglés en la computadora	1	2	3

SECCIÓN 7. Sobre mí...

Instrucciones: Responde las preguntas y marca con una **X** tus respuestas.

44. Género:  Femenino  Masculino

45.  _____
Ciudad

46. ¿Qué tipo de equipo tienes en casa?

Computadora de Escritorio



Laptop



Tablet



Ninguna



Todas



47. ¿Cuál usas con más frecuencia?

Computadora de Escritorio



Laptop



Tablet



Ninguna

Todas



48. ¿Tienes internet en tu casa?

Sí

No

¡Gracias por tu colaboración!



Lesson: (Teacher Input, Guided, Independent Activities etc.)

Introduction: The activity consists on fourth stages. Each stage was developed according one digital competence such as looking for information, practicing with multimedia, creating content, collaborative work, and sharing information.

In order to follow the activity it is necessary that students long in in an educative/personal web page (<http://compdigaska.jimdo.com/>) created by the researchers of the study.

Step 1: Searching of information through guided navigation.

Digital competence: Information management

Teacher will ask students to watch and choose one link that exemplify how to recognize the parts of the body from a document in word already explained. The links on the web page had been previously chosen by teachers in order to avoid distraction. After watching the pages, teachers will make students choose a link and write down in the Power Point application 5 vocabulary words about parts of the body.

Step 2: Practicing parts of the body

Digital competence: Multimedia management

Teachers will indicate to students to visit in the same Jimdo web page a link called “Working together” where they are going to play a game to practice the parts of the body (leg, nose, feet, hand, arm, eye, face, ear, mouth, head, hair, teeth, and knee.). Teachers will explain how to use the application to students. Students have to follow teacher’s instruction and make use of the multimedia resource.

Step 3: Create content

Digital competence: Creating content

Teachers will explain to students the use of the Power Point application where they have to create a presentation with the information that they watched in the links about body parts vocabulary. They have to choose one image from the Jimdo web page about parts of the body and paste it in the Power Point where they wrote down the five –body-parts vocabulary words. Teachers will guide and explain to students some tools of the application, students have to listen the instructions and create a presentation with the image and information previously chosen.

Step 4: Share information with their classmates

Digital competence: Sharing

After students create their PowerPoint presentation; teacher will indicate the following step. Students have to share their presentation on the Padlet application which will be on the Jimdo web page. Teachers will explain to students the steps of how upload their presentations in this resource.

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TPACK Lesson Plan Template

Rubrics

Digital competences: Pre-test

Teachers' name: Astrid Aguiar & Karina Uc

Student's name:

Category	3 Excellent	2 Good	1 Fair
Searching for information	Students look for information properly about the topic chosen by the teacher. They easily manage the computer.	Students look for the information but they have some problems to understand/ how to use the computer.	Students do not look for information in the link given by teacher and they look confused about what to do in the computer.
Multimedia management	Students know how to access the link and do not have problems using the computer. They finish the task very well.	Students have some problems to access to the link and use the computer but they complete the task.	Students delay in accessing to the link and using the computer and they do not complete the task.
Creating content	Students create an excellent presentation using the resources provided and he uses the PPP application pretty well. Their work has a great quality and information.	Students create their presentation but have a few problems using the resources provided and the PPP application. The quality and information in their work is good.	Students have difficulties to create their presentation and have a lack of quality and information.
Sharing content	Students are able to share their presentation without any problems in the Paddle application after teacher's explanation about the use of the program.	Students achieved sharing their presentation but have doubts in how to use the Paddle application after teacher's explanation.	Students were not able to share their presentation in the Paddle application after teacher's explanation.
Collaborative work	Students have an excellent attitude working in pairs and complete the tasks properly.	Students disagree about working in pairs but they complete the tasks.	Students show troubles working in pairs and do not complete the tasks.

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Lesson: (Teacher Input, Guided, Independent Activities etc.)

Introduction: The activity consists on fourth stages. It is vital to mention that this activity is similar to the pre-test activity but using another topic. This activity has the same stage of the pre-test activity. Each stage of the activity was developed according to one digital competence such as looking for information, practicing with multimedia, creating content, collaborative work, and sharing information. In order to follow the activity it is necessary that students access in a web site created by the researchers of the study.

Step 1: Searching of information through guided navigation.

Digital competence: Information management

Teacher will ask students to watch and choose one link from the option “Looking for information” that is in the web page. The links in the page are examples that will help students to practice weather vocabulary from a document. The links on the web page had been previously chosen by teachers in order to avoid distraction. After watching the pages, teachers will make students choose a link and write down in the Power Point application 4 vocabulary words about **weather**.

Step 2: Practicing weather vocabulary

Digital competence: Multimedia management

Teachers will indicate to students to visit in the same web page a link called “Working together” where they are going to play a game to practice weather vocabulary (sunny, cloudy, rainy, windy, snowy, cold). Teachers will explain how to use the application to students. Students have to follow teacher’s instruction and make use of the multimedia resource.

Step 3: Create content

Digital competence: Creating content

Teachers will explain to students the use of the Power Point application where they have to create a presentation with the information that they watched in the links about weather vocabulary. Then, they have to choose 5 images about weather from the web page in the option of “Creating”. After that they have to copy and paste it in the Power Point application the images where they wrote down the four weather vocabulary words. Finally, teachers will indicate to students to save their projects when they finish. It is important to mention that teacher will guide students during the activity, and students have to listen the instructions to create a presentation with the images and information previously chosen.

Step 4: Share information with their classmates

Digital competence: Sharing

After students create their PowerPoint presentation; teacher will indicate to students to save their presentations to share it on the Padlet application which will be on the web page. Researchers will indicate to students to go to the option “What I create” and look for the Padlet of weather. Teacher will remember to students how to upload their presentations in the Padlet, in order to save time.

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TPACK Lesson Plan Template

Rubrics

Digital competences: Pro-test

Teachers' name: Astrid Aguiar & Karina Uc

Student's name:

Category	3 Excellent	2 Good	1 Fair
Searching for information	Students look for information properly about the topic chosen by the teacher. They easily manage the computer.	Students look for the information but they have some problems to understand/ how to use the computer.	Students do not look for information in the link given by teacher and they look confused about what to do in the computer.
Multimedia management	Students know how to access the link and do not have problems using the computer. They finish the task very well.	Students have some problems to access to the link and use the computer but they complete the task.	Students delay in accessing to the link and using the computer and they do not complete the task.
Creating content	Students create an excellent presentation using the resources provided and he uses the PPP application pretty well. Their work has a great quality and information.	Students create their presentation but have a few problems using the resources provided and the PPP application. The quality and information in their work is good.	Students have difficulties to create their presentation and have a lack of quality and information.
Sharing content	Students are able to share their presentation without any problems in the Paddle application after teacher's explanation about the use of the program.	Students achieved sharing their presentation but have doubts in how to use the Paddle application after teacher's explanation.	Students were not able to share their presentation in the Paddle application after teacher's explanation.
Collaborative work	Students have an excellent attitude working in pairs and complete the tasks properly.	Students disagree about working in pairs but they complete the tasks.	Students show troubles working in pairs and do not complete the tasks.

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Appendix (D)

Information management treatment

TPACK Lesson Plan Template

Name and Grade Level: 4 ^o Grade Basic level	
Title: Information management	
Objective: Creating an advertisement in English by using emerging technologies to develop digital competences.	
Common Core/ Essential Standard- Content: Practice vocabulary about parts of an advertisement such as name of the product, image, message/slogan, company name, contact information, and products or services offered.	
Instructional methods: Discovery Cooperative learning	
Assesment Plan: Check off which apply/notes on how : Informal <u> X </u> Formal : Formative _____ Summative	
Notes:	
Technology for learners Being Used: Computers	Technology for Teacher Being Used: Laptop Screen
Essential Vocabulary: Name of the product, image, message/slogan, company name, contact information, and products or services offered.	Materials: Computer, Links from internet, publisher, and Edmodo platform.
What digital competences are students using? Information management Collaborative work	
Introduction/ Engagement: Researcher of the study will present themselves to the group. After that, teacher will explain to students that they will work in pairs in the computer classroom during this course. Teacher will explain to students that they have to share the computers during the classes. Each of them will have their times to use the computer. Teacher will give each student an identification card. Each pair will have a different color so students can take turn to use the computer. Teacher will explain that the first day, the students with the white card will use the computer and the following day is the turn of the blue one. Also, teacher will clear up that despite the fact that one of the students will use the computer, it is a pair work. Moreover, teacher will clarify that students have to create in pairs a final product (an advertisement). This product will be created by both students. They will take turns to use the computer. She will explain the points to evaluate.	

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Lesson: (Teacher Input, Guided, Independent Activities etc.)

Introduction: The activity consists in looking for information about the parts of an advertisement. This activity aims to develop the digital competence: information management. In order to follow the activity it is necessary that students log in in an educative/personal online page called (Edmodo platform), which will be adapted to the purpose of the course by the researchers of the study. This platform will have all the content for the course.

Step 1: Searching of information through guided navigation.

Digital competence: Information management

Teacher will ask students to watch and choose one link that exemplify how to recognize the parts of an advertisement. The links will be on the EDMODO platform where students had been previously registered during the capacitation day. The links about the parts of an advertisement will be chosen by the researchers in order to avoid distractions for students.

Step 2: Choosing the link

After watching the pages, teacher will make students choose a video or link. Students have to choose a link in Edmodo learning platform previously selected by teacher about the vocabulary of parts of an advertisement. Then, students have to open the publisher application so that they can write in this application the information previously chosen. This information will help students in the following activities in classes. They have to save their presentation in the computer with their names. For example: Celeste_Karina. Then, they have to upload the file to Edmodo learning platform in a space specially assigned for the researchers called “Project” so that they can access in the following classes.

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TPACK Lesson Plan Template

Rubrics

Digital competences: Information management

Teachers' name: Astrid Aguiar & Karina Uc

Student's name:

Category	3 Excellent	2 Good	1 Fair
Searching for information	The students know how to look properly for information about the topic chosen by the teacher. They easily manage the computer.	Students look for the information but they have some problems to understand/ use the computer.	Students do not look for information in the link given by the teacher and they look confused about what to do in the computer.
Choosing information	Students select properly the information they have a clear idea about the activity and use pretty well the computer.	Students have some problems choosing the information and some difficulties using the computer.	Students have many problems choosing the right information and have a poor ability using the computer.
Information content in Publisher application	Students write down the information required in the publisher application and do not present any problems using the computer to do the activity.	Students achieved to write down the information required in the publisher application but they have few problems using the computer.	Students do not write down the information in the publisher application because they have many difficulties using the computer to complete the task.
Saving the project	Students achieved saving their project in the computer and in Edmodo platform without any problems during the task.	Students achieved the task about saving their project in the computer but present some problems upload the task in Edmodo platform	Students complete half of the task. They save their project in the computer but they do not save it in the Edmodo platform.
Collaborative work	Students have an excellent attitude working in pairs and complete the tasks properly.	Students disagree about working in pairs but they complete the tasks.	Students show troubles working in pairs and do not complete the tasks.

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Appendix (E)

Multimedia management treatment

TPACK Lesson Plan Template

Name and Grade Level: 4 ^o Grade Basic level	
Title: Multimedia management	
Objective: Creating an advertisement in English by using emerging technologies to develop digital competences.	
Common Core/ Essential Standard- Content: Practice vocabulary about parts of an advertisement such as name of the product, image, message/slogan, company name, contact information, and products or services offered.	
Instructional methods: Games Cooperative learning	
Assesment Plan: Check off which apply/notes on how _____ : Informal _____ X _____ Formal _____ : Formative _____ Summative	
Notes:	
Technology for learners Being Used: Computers	Technology for Teacher Being Used: Laptop Screen
Essential Vocabulary: Name of the product, image, message/slogan, company name, contact information, and products or services offered.	Materials: Computer, Padlet, and Edmodo platform.
What digital competences are students using? Multimedia management Collaborative work	
Introduction/ Engagement: Teacher will make a review about the previous class about the parts of an advertisement. After that, teacher will explain to students that they will work in pairs with the computers. This class, the student with the pink card will manage the computer.	

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Lesson: (Teacher Input, Guided, Independent Activities etc.)

Introduction: The activity consists on review the parts of an advertisement. This activity aims practicing with multimedia so that students can review the parts of an advertisement while they are using technology.

In order to follow the activity it is necessary that students long in in an educative online page (Edmodo learning platform), which will be adapted to the purpose of the course by the researchers of the study.

Step 1: Review the vocabulary of parts of an advertisement.

Digital competence: Multimedia management

Teacher will ask students to log in Edmodo learning platform in pairs. Students have to follow the instructions of the teacher. Teacher will indicate students to look for a link title “Playing”, this link will be in Edmodo platform created by researchers of the study.

Step 2: Practicing parts of an advertisement

Digital competence: Multimedia management

Teachers will indicate to students the following step of the activity which consists in reviewing the vocabulary related to the advertisement parts. Students will find in Edmodo a link where they find an activity which consists in two sections. The first one is a question about what is an advertisement and the second one is a matching activity about parts of advertisement. This activity consists on answering one question and matching the words in correct order. It is important to mention that this activity will be related with advertisement parts vocabulary. They have to solve this activity in pairs. Students have to raise their hands when they finish the activity so that teacher can check it. It would be one activity because the class time is not enough to do more activities.

Step 3: Giving opinion

After the activity, teacher will indicate students to close the activity link and will indicate students to look for the link called “Reflection”. Then, they have to give click on Our opinion and their opinions about the class of the day.

Step 4: Instructions for the following class.

Teacher will give homework to students. They have to think about a product or service that they wanted to sell or promote. Teacher will explain to students that they will create an advertisement the following class so they have to think in one topic that they want to use to create their project.

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TPACK Lesson Plan Template

Rubrics

Digital competences: Multimedia management

Teachers' name: Astrid Aguiar & Karina Uc

Student's name:

Category	3 Excellent	2 Good	1 Fair
Logging in to Edmodo	Students were able to enter Edmodo platform without any problems.	Students were able to enter to Edmodo platform but have some problems.	Students were not able to enter to Edmodo platform.
Multimedia management	Students were able to enter without problems to the link "Parts of an advertisement" in Edmodo learning platform and the activity.	Students look for the link "Parts of an advertisement" in Edmodo platform but they have some troubles in entering, but finished the activity.	Students were not able to enter to the link "Parts of an advertisement" in Edmodo application because they have problem managing the computer and they did not finish the activity.
Closing the application.	Students go out of Edmodo/application successfully without teacher's help.	Students have some problems in going out Edmodo platform/application but they achieve the task.	Students are not able to go out Edmodo platform and ask for teacher's help.
Collaborative work	Students have an excellent attitude working in pairs and complete the tasks properly.	Students disagree about working in pairs but they complete the tasks.	Students show troubles working in pairs and do not complete the tasks.

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Appendix (F)

Creating content treatment

TPACK Lesson Plan Template

Name and Grade Level: 4 ^o Grade Basic level	
Title: Creating an advertisement	
Objective: Creating an advertisement in English by using emerging ICT resources to develop digital competences.	
Common Core/ Essential Standard- Content: Practice vocabulary about parts of an advertisement such as name of the product, image, message/slogan, company name, contact information, products or services offered.	
Instructional methods: Drill and practice Cooperative learning	
Assesment Plan: Check off which apply/notes on how _____ : Informal _____ X _____ Formal _____ : Formative _____ Summative	
Notes:	
Technology for learners Being Used: Computers	Technology for Teacher Being Used: Laptop, Screen
Essential Vocabulary: Name of the product, image, message/slogan, company name, contact information, products or services offered.	Materials: Computer, links from internet, Edmodo platform, and Publisher.
What digital competences are students using? Creating content Collaborative work	
Introduction/ Engagement: Teacher will review about the previous class about the parts of an advertisement. After that, teacher will explain students that they will work on the computer classroom.	

Lesson: (Teacher Input, Guided, Independent Activities etc.)

Introduction: The activity consists on creating an advertisement in pairs. This activity aims to create and use the Publisher application in order to practice the vocabulary of parts of an advertisement. Creating an advertisement will help students to learn the use of the Publisher application and to practice the advertisement vocabulary.

In order to follow the activity it is necessary that students log in in an educative platform (Edmodo learning platform), which will be adapted to the purpose of the course by the researchers of the study. There, they will find their previously work. It is important to mention that students have already begun their project two previous classes so they will work in detail their advertisement.

Step 1: Modifying their previous work

Teacher will ask students log in Edmodo learning platform in pairs. Students have to follow the instructions of the teacher. Teacher will ask students to look for a link title “Time to create”. This link leads students to their previous work about creating a presentation. Students will work in pairs to modify their presentation and they will decide about the topic about their advertisement.

Step 2: Improving their advertisement.

Teachers will indicate students the following step of the activity which consists on making the proper corrections in their work. Students will have to look for images to decorate their advertisement.

Step 3: Checking the final product.

After students finish with their presentation, teachers will check students’ work.

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TPACK Lesson Plan Template

Rubrics

Digital competences: Creating an advertisement

Teachers' name: Astrid Aguiar & Karina Uc

Student's name:

Category	3 Excellent	2 Good	1 Fair
Logging in to Edmodo	Students know how to enter without any problems to Edmodo platform.	Students have few problems in enter to Edmodo platform.	Students have not clear idea about how to enter to Edmodo platform.
Copy and paste images	Students know how to copy and paste images without problems from Edmodo platform to publisher application and do not need teacher's help.	Students have few problems in copying and pasting images from Edmodo platform to publisher application but do not need teacher's help.	Students have many problems to copy and paste images from Edmodo platform to publisher application and they ask for teacher's help.
Information content	Students' work have four parts of an advertisement such as: Name of the product, image, message/slogan, company name, contact information, and products or services offered.	Students' work has three parts of an advertisement. Such as message/slogan, company name, contact information, and products	Students' work only has one or two parts of an advertisement. For example, message and name of the product.
Project quality	Students' advertisement has an excellent presentation the image and the parts of it are visible in the work.	Students' advertisement has a good presentation the image and two parts of it are visible in the work.	Students' advertisement has a poor presentation because the image cover the parts of the advertisement and they are not visible in the work.
Grammar	Students' advertisement does not have grammar mistakes.	Students' advertisement has two or three grammar mistakes.	Students' advertisement has more than three grammar mistakes.
Saving the project	Students know how to save their projects without any problem.	Students have some difficulties to save their projects, but accomplish the task.	Students did not know how to save their projects and did not accomplish the task.
Collaborative work	Students have an excellent attitude working in pairs and complete the tasks properly.	Students disagree about working in pairs but they complete the tasks.	Students show troubles working in pairs and do not complete the tasks.

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Appendix (G)

TPACK Lesson Plan Template

Name and Grade Level: 4 ^o Grade Basic level	
Title: Sharing content	
Objective: Share an advertisement in English by using emerging technologies to develop digital competences.	
Common Core/ Essential Standard- Content: Practice vocabulary about parts of an advertisement such as name of the product, image, message/slogan, company name, contact information, and products or services offered.	
Instructional methods: Presentation Cooperative learning Assesment Plan: Check off which apply/notes on how _____ : Informal <u> X </u> Formal _____ : Formative _____ Summative	
Notes:	
Technology for learners Being Used: Computers	Technology for Teacher Being Used: Laptop Screen
Essential Vocabulary: Name of the product, image, message/slogan, company name, contact information, and products or services offered.	Materials: Computer, publisher, Edmodo platform, and screen.
What digital competences are students using? Sharing content Collaborative work	
Introduction/ Engagement: Teacher will explain students about their advertisement in order to introduce the topic. Teacher will indicate the instructions to evaluate during the presentation.	

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Lesson: (Teacher Input, Guided, Independent Activities etc.)

Introduction: The activity consists on sharing the final products in front of the classroom. This activity aims practicing with sharing information so that students can observe their classmates' work and enrich their own knowledge about the advertisement topic.

In order to follow the activity it is necessary that students long in in an educative online page (Edmodo learning platform). They will open their presentation in order to show it to all students.

Step 1: Preparing presentations

Digital competence: Sharing

Teacher will choose the teams for the presentation. It is necessary that students share their presentation in Edmodo learning platform .After that, students have to pass in front of the class and look for their presentation in the platform. Both students have to present their work. They have 5 minutes to explain the parts of their advertisement in English, besides that they have to explain in Spanish the image and their opinion about technology.

Step 3: Feedback

After finishing the presentations, teachers will give some comment and will make a little review about the topic.

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TPACK Lesson Plan Template

Rubrics

Digital competences: Sharing content

Teachers' name: Astrid Aguiar & Karina Uc

Student's name:

Category	3 Excellent	2 Good	1 Fair
Sharing content	Students do not present problems in sharing their presentation in Edmodo platform and they achieve the task.	Students have problems in sharing their presentation in Edmodo platform but they complete the task.	Students did not share their presentation on the Edmodo platform.
Students' performance	Students explain very well all the advertisement the parts.	Students have problems explaining the parts of their advertisement but mention three parts of it.	Students' explanation only one or two parts of an advertisement.
Students' attitude	Students' attitudes are confident in front of the class and make an excellent presentation.	Students' attitude is nervous but they do a good job.	Students' attitude is negative and did not present the work.
Collaborative work	Both students work well together and both explain equitably the advertisement	Students work well together but one of them explain the advertisement more than the other	Students did not work well together and only one explain the advertisement

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Appendix (H)

Interview

Guía de entrevista a maestro

Introducción

Buenos días, el objetivo de esta entrevista es conocer sobre el uso de las TIC en la enseñanza del inglés a niños de primaria y las posibles competencias digitales que pueden desarrollar al usarlas. De igual manera, se busca obtener algunas sugerencias sobre el uso de las herramientas TIC en las clases de inglés, debido a que desde una edad muy temprana los niños hacen uso de celulares, computadoras y/o tabletas para su entretenimiento, pero no todos son usados para propósitos educativos como en el aprendizaje del inglés.

Inicio de entrevista

Sección 1 Experiencia en el uso de las TIC en el aprendizaje del inglés

1. - ¿Qué opina acerca del uso de las TIC en el aprendizaje del inglés?
- 2.- ¿Usted ha usado alguna herramientas/recursos para la enseñanza del inglés?

Seguimiento:

2^a ¿Cómo cuáles?

- 3.- ¿Ha utilizado alguna plataforma en internet como recursos para la enseñanza del inglés? Por ejemplo páginas de internet o redes sociales

Seguimiento:

3a. ¿Cómo cuáles?

3b. ¿De qué manera usa estos recursos en sus clases de inglés?

- 4.- ¿De qué manera influye el uso de la tecnología en el aprendizaje del inglés en los niños?/ ¿Qué tipo de influencia ya sea positiva o negativa cree que pueda existir al usar tecnología con los niños cuando aprenden del inglés?

Seguimiento:

4a. Podría mencionar algunas páginas o recursos que sean de utilidad para la enseñanza de inglés a los niños.

4b. ¿Cuáles de estas páginas o recursos tecnológicos motivan a los niños cuando realizan actividades en inglés?

Sección 2 Competencias digitales

5. ¿De qué manera cree que la tecnología influye en el aprendizaje educación de los alumnos en su aprendizaje del inglés?

5a. Por ejemplo ponen más atención, están más motivados

6.- ¿Qué tipo de trabajos hacen los niños en la computadora para la clase de inglés?

Seguimiento:

6a. ¿Alguna vez han usado la computadora para buscar información en inglés?

6b. ¿Qué hacen con la información que obtienen?

6c. ¿Esta información la comparten con sus compañeros o la utilizan para hacer alguna presentación o tarea?

6d. ¿Han creado una presentación en Power Point o en Word para compartir su información?

6e. ¿Han usado videos o música en la computadora que les ayude en su aprendizaje del inglés?

7. ¿Han hecho uso de recursos multimedia?

7a. Podría mencionar ejemplos

7b. ¿Cómo los usa en sus clases?

Sección 3 Recomendaciones

8. ¿Cómo ha sido su experiencia en el uso de los recursos TIC para la enseñanza del inglés?

Seguimiento:

8a. ¿Qué aspectos considera que hay que tomar en cuenta en la implementación de los recursos TIC en escuelas primarias para la enseñanza del inglés?

8b. ¿Qué tipo de estrategias de enseñanza podría compartir a los docentes para involucrar a los niños en el uso de herramientas TIC para su aprender inglés?

Cierre

Antes de concluir con la entrevista le gustaría agregar o preguntar algo acerca de este tema.

Muchas gracias por su tiempo.