# The Use of ICT Tools in Teaching Vocabulary in English as a Foreign Language to Preschoolers

**Viviana Giraldo Martinez**

**School of Education Sciences**
**Master's Degree in Teaching English as a Foreign Language**
**2019**

UNIVERSIDAD
ICESI

**The Use of ICT Tools in Teaching Vocabulary in English as a Foreign Language to Preschoolers**

**A Master's Report Presented by**
**Viviana Giraldo Martinez**

**Submitted to**
**the School of Education Sciences of**
**Icesi University**
**In Partial Fulfillment**
**Of the Requirements**

**MASTER'S IN THE TEACHING OF ENGLISH AS A FOREIGN LANGUAGE**

**Research Advisor**
**Diana Margarita Diaz Mejia**
**M.A in TEFL**

**Icesi University**
**2019**

# Dedication

This master´s report is dedicated to my family, especially, to my parents and my lovely grandmother who always gave me the courage to pursue my dreams. Also, to my friends and colleagues, for their endless understanding and support.

# Acknowledgements

There are many people who I would like to express my most sincere appreciation. First, to my advisor and professor MA Diana Margarita Diaz Mejia who guided and supported me along this project; her valuable contributions are sincerely appreciated. Second, Gimnasio La Colina School and its cofounder Ximena Iragorri Casas, for giving me the oportunity to apply the didactic sequence witn the children. Third, to the whole professors team of the  Master´s Teaching of English as a Foreign Language at Icesi University, and to its director MA Diana Margarita Diaz for allowing me to be part of this prosperous generation of successful teachers in our country. Finally, of course, to God who gave me the infinite wisdom, sense of responsibility, and strength to rise this meaningful challenge.

# Abstract

Incorporating ICT tools in the classroom of preschoolers in the present days is a must, but this should be done by the heads of the departments of schools, to be aware of the importance of how these tools help to trigger students learning process. In this project a didactic sequence that helps to increase the learning of a specific vocabulary in preschoolers was designed. It was developed in five moments and it included activities and specific material that was based on the use of ICT tools. In addition a pretest and a post test were applied to be able, to assess the previous knowledge of the participants and to assess the children's learning respectly. This study was held in a private school located in Cali – Colombia, with kinder students. Results shed light on how ICT tools highly help to reach learning goals in preschool students in a fun and interactive way. The main findings of the study account as evidence of the changes students went through after the application of the didactic sequence, and the test instruments. In the concluding section the author highlights the need of taking into account these tools to enrich the teaching process starting with early childhood students.

*Keywords*: ICT tools, teaching strategy, preschoolers, teaching English as a foreign language, English vocabulary, ICT tools & kids, ICT in Colombia.

# Table of contents

# INTRODUCTION

In 1995, the Colombian government, through the General Education Act Law 115 (MEN, 1994), established the teaching of English as a foreign language in the curriculum and programs in preschool schools as an attempt to improve students' English proficiency in the country. When a foreign language (FL) acquisition begins in preschool, the time when young learners become particularly linguistically sensitive, it allows a higher FL competence in the future (Locklewicz, 2018). Preschool students and English teachers have been through the process of including Information and Communication Technologies (ICT) tools to teach inside and outside the classroom to improve and complement foregin language learning.

Some studies held in Austrailia, China, Greece and Romania have shown that when ICT are included inside and outside the classroom, there are benefits in diverse aspects. In Australia the digital play framework articulates the evolution of digital indicators from epistemic to ludic play, and so allows teachers to identify children's learning to use technologies through play in terms of appropriate amounts of time, opportunity to access technologies and adult support in using technologies (Bird & Edwards, 2015). Researchers from both Greece and China show ICT benefits on preschoolers. Teachers stated that children's early exposure to ICT in preschool settings had a positive contribution to their learning and development, which was confirmed in various learning fields and subjects (Liu et al. 2014). While in Romania the emergence of these technologies into early education has meant that children now have access to information and learning opportunities at any time and in any place. As well as supporting language development, research shows that the use of these technologies through targeted, age-appropriate games and resources can increase children's ability. The technology digital tools and resources should be educational and interactive in order to reap their benefits (Mihaela et al. 2017). The more a child can receive feedback from a tool, the better the child will learn (Lazar, 2014). In Colombia there are no studies conducted in this specific subject matter.

In Colombia, private bilingual schools have established English programs and trained teachers to teach the language, but when it comes to include ICT for teaching English as a Foreign Language in their lesson plans or the curriculum it becomes a challenge. Studying the obstacles to the use of ICT in education may assist educators to overcome them. According to Bingimlas (2009) some of the obstacles teachers face are: lack of confidence, lack of competence and finally the lack to access to resources. However, the presence of all components increases the possibility of excellent integration of ICT in learning and teaching opportunities (Bingimlas, 2009).

The purpose of this study is to analyze the usefulness of  ICT tools to teach vocabulary to preschoolers in a private school in Cali. The study has three objectives, which are, to design and implement a teaching strategy based on the use of ICT tools to teach specific vocabulary to preschoolers in a private school in Cali; to assess the knowledge of specific vocabulary of children before and after implementing the teaching strategy; to assess whether the teaching strategy based on ICT tools was effective to teach vocabulary to preschoolers. The first objective was accomplished through the application of a didactic sequence to one of the preschool courses from a private school in Cali called Gimnasio La Colina, the other two objectives were reached through the application of a previously designed pre and post – test to the students that participated in the teaching strategy, and then the results of the application of the evaluation were analyzed to determine if the teaching strategy was effective to teach specific vocabulary to preschoolers. These, bring about the nature of the research question: How can ICT tools help to increse the learning of specific vocabulary in preeschool children in a private institution in Cali?

It was concluded that: 1) preschool children highly increase their learning process when it is complemented with ICT tools for a specific purpose, 2) when  preschoolers interacted whit ICT tools while learning a Foreign Language they perceived the learning process easier and fun, thus their performance particularly increased.

# 1. GENERAL AND SPECIFIC OBJECTIVES

## General Objective

To analyze the usefulness of ICT tools to teach vocabulary to preschoolers in a private school in Cali.

## Specific objectives

- To design and implement a teaching strategy based on the use of ICT tools to teach specific vocabulary to preschoolers in a private school in Cali.
- To assess the knowledge of specific vocabulary of children before and after implementing the teaching strategy.
- To assess whether the teaching strategy based on ICT tools was effective to teach vocabulary to preschoolers.

# 2. LITERATURE REVIEW

This literature review chapter starts with some key concepts related to ICT, to then connect them with the concepts of teaching to preschoolers and merge them with the concepts about the teaching English as a foreign language for kids, followed by a review of previous studies that were held abroad.

## 2.1 ICT in education

ICT in education has been widely discussed (Jamieson-Proctor, Burnett, Finger & Watson, 2006; Pange & Toki, 2010; Nilson and Sundqvist, 2016). Notwithstanding it has been neglected in the preschool section in the Colombian context. Taking this information into account, it was a concern that the researcher wanted to address. The following articles were the basis that supported the design of the sequence which included ICT tools in education for preschoolers.

Jamieson-Proctor et al. (2006) in their study "*ICT integration and teachers' confidence in using ICT for teaching and learning in Queensland state schools*" investigate the impact of ICT integration on teaching and learning. The authors applied a teacher survey that measured the quantity and quality of student use of ICT; 939 Australian teachers across all year levels and from 38 Queensland state schools took the survey, providing results which designated that females teachers were essentially "less confident that their male counterparts in using ICT with students for teaching and learning" (p. 511). They also claim that female teachers find more resistance into applying ICT tools and aligning them into the curriculum.

The researcher of this study agreed with the authors argument which claims that "the ICT for Learning Strategy plays an important role in connecting teachers and students with new technologies" (p. 513). However, it is not convinced that female teachers are less confident in using

ICT tools in the preschool section. Kaindio and Wagithunu (2014) in Kenya, found that more female teachers have ICT training than male teachers (p. 95).

Similarly, Pange and Toki (2010) in their paper "*E-learning activities for articulation in speech language therapy and learning for preschool children*" argue that the aim of their study was to investigate the possibility of creating computerized application software to be used for e-learning activities for Greek preschoolers, particularly to improve: (a) speech articulation problems, and (b) language learning. They claim that the pedagogical model of the application was based on social learning theories and especially the nearest neighbour learning method. The authors state that young children are growing up with technology and that they learn "with technology not just in the formal educational setting but firstly at their home environment, in an informal setting" (p. 4275). According to the authors, the role of the teacher is to be a "speech performer" (p. 4275) for the student to shift from dependent to independent practice. The results of the study revealed that the combination of using the e-learning activities and working with a friend or family member at home showed a four percent increase on the overall performance of articulation tasks. They conclude their paper by stating that the introduction of technology and e-learning can be a method that can be further developed with the ability to support the student at all times and situations.

Furthermore, according to Nilson and Sundqvist (2016), in their paper "*Technology education in preschool: providing opportunities for children to use artifacts and to create*" assert that in recent years, technology has been emphasized as an important area in early childhood curricula; and that research shows that "many preschool staff members are unsure about what teaching technology should include and how it should be taught" (p. 29). This study focused on what preschool staff include as part of technology education for preschoolers, both regarding technological content and how it is addressed, with the aim of contributing to the emerging field of research on the content for teaching technology in early childhood education. They argue that "Play is used by the preschool staff to facilitate learning about specific content in a fun and pleasant way" (p. 31). They state that play is a condition for learning, learning is processed and developed in play, as well as quoting Lillvist and Sandberg (2015), who note that "Integrating play and learning is

essential for high-quality preschool practice, and preschool staff should have an awareness of how to use play to support children in content learning and in developing their play competence" (p. 31). The authors declare that "the creating and construction part of technology is mainly addressed by providing children with materials and setting up the environment to inspire children and give them the possibility to be creative" (p. 47). Thus the results of the study can be apply to the Colombian context in which playing and integrating technology into the classroom could be of great improvement for preschool Colombian children.

## 2.2 Teaching preschoolers

One the one hand, Paule-Ruiz, Álvarez-García, Pérez-Pérez, Álvarez-Sierra & Trespalacios-Menéndez (2017), in their study, argue that "Mobile and game-based learning are novel approaches characterised by the use of mobile devices, enabling learning anywhere and at any time" (p. 95). In this paper, Paule-Ruiz et al. share an experience-based design and a pilot study to introduce music learning in preschool education. The authors share Koper and Van ES' work, in which they state that "E-learning and the enabling learning technologies aim at making learning experiences in all types of settings more effective, efficient, attractive and accessible for learners" (p. 95). Moreover, the authors quote previous studies which claim that "motivation, interest and engagement aroused by mobile technologies at all educational levels have enabled students to develop skills and abilities" (Klopfer 2008; Sotiriou and Bogner 2008; Liu, Tan, and Chu 2009; Martín-Gutiérrez et al. 2010).

Additionally, they assert that "Music learning is also an effective way to achieve broader educational benefits as it goes hand in hand with other developmental learning processes" (p. 95), as well as stating that "Touch-based interaction can be used to train motor skills and spatial learning abilities" (p. 96). They argue that Couse and Chen (2010) note that "the effectiveness of using new technologies as teaching tools has been largely attributed to their potential to engage learners" (p. 96). The experimental group of the study was made up of 43 third-year kindergarten children (5 years old), enrolled in 1 classroom. Paule-Ruiz et al. pointed out that the results of the investigation

were consistent with their observations as well as concluding that learning games fosters effective learning of musical notes and children's creativity. Although music learning was not the focus of this study, it does support the many advantages of including the new technologies in the preschool classroom in order to foster creativity and to engage learners in the learning process.

On the other hand, Preradović, Lešin & Boras (2017), in their paper "*The Role and Attitudes of Kindergarten Educators in ICT-Supported Early Childhood Education*" state that the aim of their study was to reveal the role and attitudes of kindergarten educators "towards the early ICT-supported education in countries that are still not required or expected to use ICT in the early childhood education classroom (such as Croatia, Belgium, Greece, Turkey and many other non-EU countries)" (p. 162). Preradović et al. assert that "ICT needs to be perceived as a mode of learning that should be embedded in the curriculum (p. 163). In addition to this, the authors highlight that the frequency of the ICT use by early childhood educators is of 57.14%, while only one uses a computer on a daily basis (2.38%). They also point out that 22.2% of educators expressed the neutral opinion regarding this issue, considering ICT neither mitigating nor aggravating factor at work. They conclude their paper by giving some recommendations, such as including ICT education in an early stage, to provide ICT training and professional development for all educators, to support the involvement of parents in the development of ICT education strategy (p. 170). This paper contributes to understanding of the many ways ICT tools can help educators to strengthen the link between child's home and early education institutions, as well as providing different settings for them to explore and learn.

## 2.3  ICT & Foreign Language Learning (FLL)

Joseph Samuel and Abu Bakar (2006)  in their paper "*The utilization and integration of ICT tools in promoting English language*" emphasize on the growing concern of Malaysia's "level of English proficiency at the workplace which if left unchecked could lead to the country losing its

competitiveness especially in the industry and technical fields" (p. 4). The authors highlight the way "ICT tools have now removed the time and space limitation found in traditional teaching" (p. 4) and that "the integration of ICT tools in the teaching and learning of English have found to bring other benefits too" (p. 4). They list the benefits of ICT tools in the English classroom, such as motivating pupils and raising self esteem and confidence, "ICT can enhance pupil interaction, verbalization and involvement in collaborative learning" (p. 4) The researchers chose three schools in Kuala Langat District in Banting on the basis of accessibility. They conclude their paper by calling for an ongoing commitment by the part of the teachers in order to "fully realize the benefits of ICT integration" (p. 10). This paper supports the use of ICT in the EFL classroom, given its collaborative nature.

Moreover, Lazar (2014), in her paper "*Pre primary educators to raise early foreign language awareness*" she claims that the "use of digital resources to raise pre-school children's awareness for foreign languages needs to follow the existing model of Language Awareness-raising or Exposure approach, where digital technologies, e.g. personal computers, tablets and smartphones have become ubiquitous in our everyday lives" (p. 842). Her literature review showed that "digital resources can also help to improve children's abilities in problem-solving, communication, collaboration, creativity, and to develop civic and cultural awareness as well as a sense of social responsibility" (p. 842). Similarly, she asserts that "the use of these technologies through targeted, age-appropriate games and resources can increase children's ability to understand reading, writing and narrative" (p. 844) and that "digital resources also encourage children to learn about the world around them and to become active digital citizens and tolerant of other cultures" (p. 844). She concludes that "the emergence of these technologies into early education has meant that children now have access to information and learning opportunities at any time and in any place" (p. 846). Lazar's results back up the need of including ICT tools in earlier stages in which language awareness, in my case, identifying vocabulary and pronunciation can be developed by means of technological resources.

In addition to Lazar, Lockiewicz, Sarzała-Przybylska and Lipowska (2018) also joins the conversation of using ICT in the ELF preschool classroom. In their paper "*Early Predictors of Learning*

*a Foreign Language in Preschool – Polish as a First Language, English as a Foreign Language"* the authors state that "when a foreign language (FL) acquisition begins in preschool, at which time young learners are particularly linguistically sensitive, it allows for a higher FL competence in future" (p. 1). Moreover, Lockiewicz et al. point out that In Poland, according to Kubiak (2003), learning English as a foreign language (EFL) combines sequential and subordinative acquisition (p. 1). They argue that "an EFL instruction begins before or simultaneously with literacy instruction in L1" (p. 1), and that Awramiuk and Krasowicz-Kupis, (2014) claim that Polish orthography, as compared to English, is more transparent, regular, and consistent in its grapheme-phoneme correspondence (p. 2).

Furthermore, Lockiewicz et al. highlight that "the preschool environment is an artificial condition for learning a FL in a culturally influenced social context" (p. 2). The results showed that "preschool teachers may successfully conduct and expect communication with their students in L2 only even if all of them share the same L1 that is used for other instruction and in everyday life" (P. 9). The authors found that "in Polish pre-school children, at a pre-literacy level of education, emerging letter identification and phonological awareness, in their L1 were related to the achievements in learning English as a FL, despite the differences in transparency between the two languages" (p. 9). The authors conclude the paper by quoting Yeung and Chan (2013) who underlined the importance of the L1 phonological awareness in L2 phonological awareness development that is a crucial building block for future reading development (p. 9).

Finally, Kenning (2007) in the chapter "*ICT and language learning"* of her book, the author argues that the beginning of "the exploration of the specific ways in which ICT has impacted on language learning is by examining why people learn languages and whether and how this is influenced by technological progress" (p. 136). Moreover, she points out that:

Following the rise of English as an international language, and with other pressures on the curriculum, the study of a modern language has recently been demoted in England, losing its status of core subject after age 14 in complete disregard of the

interrelatedness of language learning and citizenship in a multilingual Europe (Kenning, 2007, p. 137)

Kenning acknowledges the nature of English as a Lingua Franca by stating that "English allows communication not only with a large number of native speakers, but also with a larger and increasing number of second language users" (p. 138). Similarly, the author asserts that "from a language use point of view, the case for integrating ICT into language education rests on the pivotal role of ICT in everyday communication" (p. 158) and that "two factors in particular must be borne in mind. The first is that exposure to, and communication in, a foreign language no longer entail travelling to the extent that they used to do. The other factor is, paradoxically, the high mobility of an increasing proportion of the population" (p. 159). She concludes the chapter by declaring that "one of the main implications for the use of ICT in language learning is the need to be discriminating and to build on what has gone before, on the findings of second language research, and on the ecological relevance of different options" (p. 169); and that "only then will teachers be in a position to use their knowledge of the learning context in all its aspects to deliver language learning experiences that cater for the diverse, multi faceted nature of language learning needs in what is a continually evolving communication landscape" (p. 170).

In preschool, these language learning experiences that Kenning mentions can be targeted through language awareness activities, which promote vocabulary acquisition via engaging technological ways. Language learning should not be a static boring process, it should be collaborative and fun for kids, in which ICT tools can be of great use.

## 2.4 Categorization of websites

According to webpage Expert Market (2017 ) the websites are classified into three main groups by their usage and specific characteristics, and each group contains categories, like this:

| Functionality | Content | Responsiveness |
|---|---|---|
| *Brochure*: Brochure websites typically only have a few pages, and will be used by small businesses that need a simple online presence. | *Blog*: A blog is a website or web page that is regularly updated. Typically, a blog will be run by an individual or a small group. It can be on any topic, but will often be written in an informal or conversational style. | *Static/ Fixed*: A fixed website is not well-optimised for different sized screens. It is built to be a fixed width of pixels. If you open a website which is static/fixed on a mobile, you will have to zoom in to see what is written on each page. Again, static websites may load slightly faster due to their simplicity. |
| *e-commerce*: An ecommerce website is a website through which users are able to pay for a product or service online. | *Corporate*: Businesses are waking up to the fact that they must have at least a basic website to ensure they appear credible and professional. Businesses may not sell directly through these corporate websites, but they will use the site to provide information about themselves and let people know how they can get in touch. | *Fluid/ Liquid*: A website built with a fluid or liquid design ensures that the site looks the same in terms of proportions no matter what the screen size. Each element of the website, such as the navigation bar, will take up the same relative amount of space on every device. |
| *Portal*: A portal website brings together information from lots of different sources on the web. Early examples include Aol and Yahoo, who offer emails, forums, search | *Crowdfuding*: In the past, funding a new business venture or project involved seeking large amounts of money from only a few people (think Dragon's Den). | *Responsive*: A website with a responsive design goes one step further than one which is fluid or liquid. A website with responsive design is one |

| | | |
|---|---|---|
| engines and news all through their homepage. | Crowdfunding is the practice of funding a project or venture by raising small amounts of money from lots of people. It involves creating a pitch video for your project, setting a target and hoping to reach it by your set deadline. | which is completely optimised for mobiles and tablets, to the point where the website will actually look different on each device. |
| *Wiki*: A wiki website is one which allows people to collaborate online and write content together. The most popular example is Wikipedia itself, which allows anyone to amend, add and assess the content of their articles. | *Educational*: 'What are the different types of websites?', 'How to boil an egg'… chances are that typing these into a search engine will produce a selection of websites that are informative or educational. Their aim is to provide the user with the information they are looking for. | |
| *Social media*: Social media websites are platforms which allow the sharing of images or ideas. They encourage online interaction and sharing. The most popular social media website is Facebook, with a staggering 2.07 billion active users. Other social media sites include YouTube, Twitter, Instagram and LinkedIn. | *T.V or Video Streaming*: Video streaming sites have soared in popularity in recent years. Netflix and similar sites have revolutionised the way the world watches TV. Catch-up sites such as iPlayer and All 4 are more traditional examples of this popular type of site. | |

The chosen websites had the following characteristics, according to the criteria mentioned above:

- **Functionality:** Portal
- **Content:** Educational
- **Responsiveness:** Responsive

## 2.4.1 Web Pages for kids

According to the previous classification of web pages, educational web pages for kids belong to the  content group, specifically to the educational category. There are two interesting web pages for kids that were used in the didactic sequence to complement the teaching strategy as ICT tools, these are: British Council – Learn English kids and Sheppard software. These webpages have the followings content in common: the world, animals, vocabulary, health , science and math, and to learn and practice the English language the topics are: Animals, alphabet, colors, numbers and shapes.  When the user clicks on any of the resources of the  webpages, the screen will be divided into five columns, those are: look, create, play, learn and find and count, according to the topic that the user wants to learn or practice. The user will find useful resources for preschoolers, such as: games, videos, pictures, stories,  songs, etc. The specific resources for teaching English in a didactic and dynamic way are flashcards, movies, games, and create to practice the seen topics and enhance the creativity in kids.

## 2.4.2  Apps for kids

Recent research made by Douglas (2017) shows the potential of digital games to support learning through conceptual understanding, process skills and practices. The study also showed that typical educational games, when carefully coordinated with learning goals, do support significant

learning and increased engagement. There are three particular apps that were developed specifically for toddlers, that would help them to learn English vocabulary by their own. The apps are the following: *English for kids* by Mrdoanalec, *Education kit for kids* by Dunia Anak Indonesia and *Learn English for kids* by Gizpark. In particular these apps contain numerous meaningful topics in common to learn the language such as: colors, animals, flowers, fruits, vegetables, parts of the body, clothes, food, vehicles, school, country sports, jobs, prepositions, shapes, musical instruments, months of the year, transportation, , bathroom and living room, school objects and quizzes of these topics etc. These apps are highly useful to engage the learners with the language.

## 2.5 Studies in Australia

Bird and Edwards (2015) claim in their study about "*Learning to use technology through play",* the following main ideas, "technological play reduces the level of complexity evident in children's pretend and imaginative play" (p. 1151)).  The participants in this project included a class of 27, from 4 and 5-year-old children. The class involved children from African, Asia and Western-European cultural backgrounds. The class was located in a lower-to-middle socio-economic suburb in Melbourne, Victoria, Australia. The project ran for 5 weeks. The authors argue that "a benefit of the Digital Play Framework is that it provides a summarised description of children learning to use technologies through play that teachers can use to observe and assess children's learning" (p. 1153); and that "such knowledge is necessary to help teachers realise the learning potential of technologies within play-based approaches to pedagogy" (p. 1158). They conclude that:

> the Digital Play Framework articulates the evolution of digital indicators from epistemic to ludic play, and so allows teachers to identify children's learning to use technologies through play in terms of appropriate amounts of time, opportunity to access technologies and adult support in using technologies (Bird & Edwards, 2015, p. 1158).

## 2.6 Studies in Greece & China

Liu, Toki and Pange (2014) in their study state that ICT use in education can create new educational environments, provide new teaching methods, ICT can be considered as "potential tools for change and innovation in education" (p. 1168). The authors highlight that "the important barriers and difficulties of ICT usage in education stated by the teachers are: insufficient equipment in school, teachers' limited skills and subject unsuitable for computer teaching" (p. 1169).

Liu et al. claim that In *China*, "the introduction of ICT into preschool education began in the 1990s, quite later than other European countries. ICT-related research and practices are now at an early stage" (p. 1170). Moreover, the authors state that "although many teachers have interest to introduce ICT into classroom activities, it is very difficult for them to implement in real teaching practice (p. 1172). The main challenges and obstacles are summarized into: "lack of guidelines, lack of resources and technical support, lack of educational software in Chinese language, teachers' inadequate capacity of ICT use, ICT illiterate parents, insufficient time, heavy workload and pure organization environment" (p. 1173).

Liu et al. conclude that both Greece and China, reached a conclusion on ICT's benefits on preschoolers by preschool teachers:

children's early exposure to ICT in preschool settings had a positive contribution to their learning and development, which was confirmed in various learning fields and subjects. Finally, both in Greece and China, the teachers have to face several factors which affect ICT's effective usage for their teaching. So it is important to: Formulate and implement national and regional policies and project on ICT use in preschool settings, particularly in China. Policy guidance enables systematic and sustainable

improvement in infrastructure development, resource allocation, technical support and teachers' training (Liu, Toki and Pange, 2014, p. 1173).

## 2.7 Studies in Romania

Guran, Moldovan and Cojocar (2017) argue that "young children use digital devices to play games, watch television and replay their favorite videos on YouTube. Through these activities, young children acquire digital competences" (p. 183). Additionally, they state that "children benefit from computers usage in the classroom by learning basic skills and keyboarding, as well as enjoying programs that enhance their curriculum" (p. 184). For the goal of this study the authors focused only on the age range of 2 or 3 to 6 or 7 years old, called the preoperational stage. The authors point out that "the basic skills for digital competence are: the use of computers to retrieve, access, store, produce, present and exchange information, and to communicate and participate in collaborative networks via the Internet" (p. 187); as well as asserting that digital games" attract children and young people with imaginary worlds, fascinating stories, and shared experiences with peers" (p. 187). They conclude their paper by declaring that "the pedagogical use of digital games has been found to potentially intensify a more critical use and understanding of varied forms of media"(p. 195).

The studies and reports mentioned above backed up the study in the importance of including ICT tools since the earlier stages of language learning process. Bearing in mind that there isn't enough data collected from the Colombian context, this report is aimed at joining the conversation on one of the many ways a teacher can start the learning process in the early development stage.

# 3. RESEARCH METHODOLOGY

## 3.1 Background of study

This study took place in a private bilingual school located in the north of the city, it is a mixed school (boys and girls), was founded in 1975. The profile of the students that make part of this institution belong to a high socio economic level. The bilingual approach implemented by the school makes possible to the student to master the English language, speaking fluently, recognizing different accents, as well as reading and producing different types of texts. The preschool program is supported by different theories and studies of recognized linguists and specialists in the area. The Thresholds Theory (Lasagabaster, 1998), argues that the acquisition of a second language occurs in a stepped process.

Robinson (2006) states that ICT tools have now removed the time and space restraints found in the traditional teaching. Classroom interaction between teacher and student can now be extended beyond the time and space constraints of class. The integration of ICT tools in the teaching and learning process of English has found to bring some benefits. Besides motivating learners and raising their self-esteem and confidence, ICT can enhance learners' interaction, verbalization and involvement in collaborative learning. The ICT skills of teachers need to be addressed first. The In-house training on ICT skills should be intensified in all schools and in higher education institutions ( p.13).

## 3.2 Type of study

The present study is descriptive qualitative study. It is an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. The process of research involved emerging questions and procedures, data typically collected in the participant's setting, data analysis inductively building from particulars to general themes, and the researcher

made interpretations of the meaning of the data. The final written report had a flexible structure. Those who engaged in this form of inquiry supported a way of looking at research that honors an inductive style, a focus on individual meaning, and the importance of rendering the complexity of a situation (Creswell, 2014).

In this scenario, the researcher analyzed the data collected to determine how the use of ICT tools that promote the learning of specifc vocabulary in preschoolers. A didactic sequence is used in which the learning of the vocabulary in preschoolers is assessed both before and after the application of the didactic sequence. The data are collected on an instrument that measures the learning of the vocabulary, and the information is analyzed contrasting the pre and post – test results obtained during the study and participants reactions and participation in the activities proposed.

### 3.3 Participants

This research was held in Gimnasio La Colina, a private bilingual school located in Cali – Colombia, a convenient sample of kinder students were chosen to participate in the application of a didactic sequence to teach a specific vocabulary supported on the use of ICT tools. The chosen grade was *Kinder – Tigers*. This group has a total of 13 students, with ages between 5 and 6, the students belong to a high-social strata. The participants were 5 boys and 8 girls.

To have the possibility of applying this didactic sequence, the main step was to ask for an informed consent from their parents. This requirement is important because the participants are children and as an ethical issue, it is a mandatory requirement to fulfil. After having this approval, the kids were ready to start participating in this project.

## 3.4 Data colletion and method instruments

The chosen instruments for this study were a pre-test and a post – test and a journal. These procedures allowed the researcher to gather information related to the previous knowledge with the application of a pretest; the application of the didactic sequence in order to give to students the input of knowledge needed to learn some specific vocabulary and measure knowledge gained by students applying the post – test.

**Pretest:** Merriam Webster Dictionary defines pretest as a a test to evaluate the preparedness of students for further studies. This tool was chosen to identify the previous knowledge of the students about the topic selected for the research. This pretest allowed the reasearcher to recognize the vocabulary words that the students already knew, and which vocabulary was unknown to make more emphasis on it, to achive the goal of teaching the whole set of words prepared (*see appendix 3*).

**Didactic sequence:** the National English Program for Basic Education (NEPBE, 2011) defines didactic sequence as the process of designing appropriate activities in order to achieve a specific purpose or objective ( p.44). It is necessary to specify the objective, the activities to be carried out, the materials needed, the way the students will be organized and the way the learning process will be assessed. To teach the specific vocabulary to preschoolers using ICT tools and at a pace that was right for the students a didactic sequence was designed. It was developed in five sessions of 40 minutes each (*see appendix 2*).
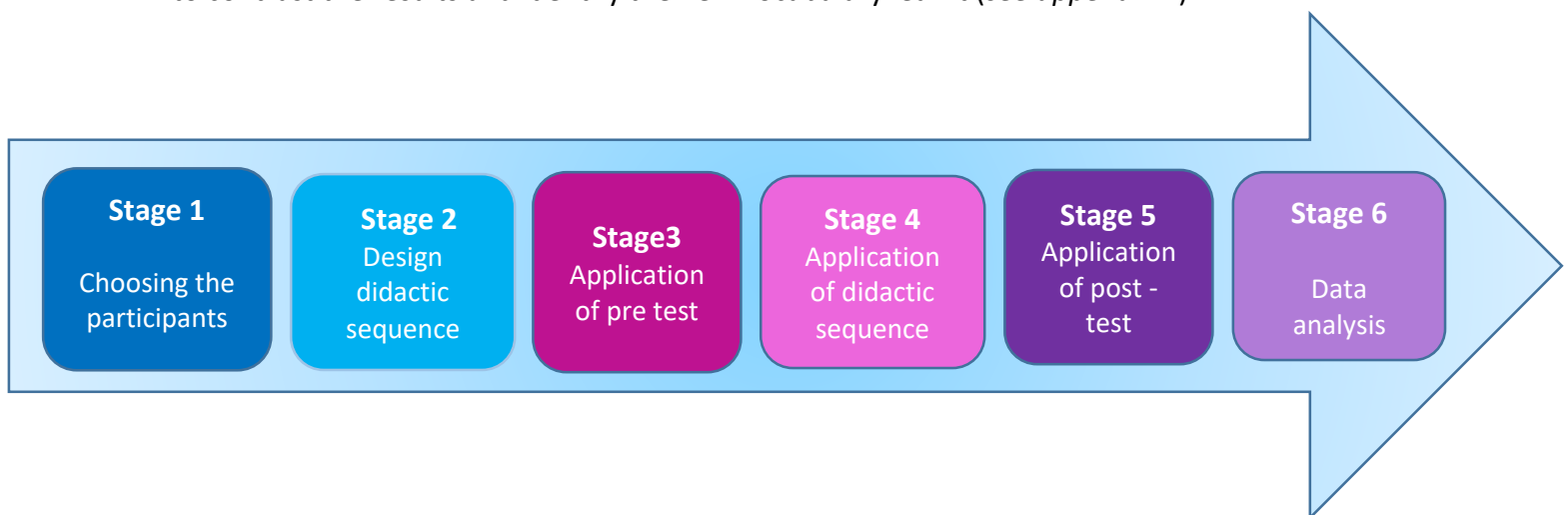
**Post test:** Merriam Webster Dictionary defines post test as a test given to students after completion of an instructional program or segment and often used in conjunction with a pretest to measure their achievement and the effectiveness of the program. The application of the post test had the purpose of assessing the learning of the vocabulary taught after the pretest through the didactic sequence to preschoolers. To following analyze the performance of each one of the

participants with the ICT tools and the complement of the classroom activities to finally evaluate if the procedure enhanced their language learnging process (*see appendix 4*).

Journal: Merriam Webster defines academic journal as a periodical dealing especially with matters of current interest. The main purpose of using a journal in this study was to record the process of implementation, and to keep track of the progress of each student a journal was kept. In each moment of the didactic sequence there were key elements that helped to develop accurately the tools; due to its relevance, the journal helped to keep a close record of their performance in listening, pronuntiation, and recognition of a particular set of words; as well as the way students felt and their opinions about the ICT tools that were used to test their learning process. Data collected in the journal was later analyzed.

## 3.5 Procedure

Since the didactic sequence had the purpose of promoting the use of ICT tools to learn a specific vocabulary and improve listening, pronunciation and recognition of a particular set of words of farm animals, the vocabulary was taught in context, teaching kids about animals´habitat and habits. This didactic sequence was developed in five session of 40 minutes each. First, students took a pre-test to identify their previous knowledge about the target vocabulary. After analyzing the results, the didactic sequence was applied. Finally, the same pretest was applied again as a post test to contrast the results and identify the new vocabulary learnt (*see appendix 2*).

**Stage 1**
Choosing the participants

**Stage 2**
Design didactic sequence

**Stage3**
Application of pre test

**Stage 4**
Application of didactic sequence

**Stage 5**
Application of post - test

**Stage 6**
Data analysis

### 3.5.1 Stage 1- Choosing the participants:

The selection of the target group to apply the didactic sequence was made taking into account the related topics they were learning and the previous knowledge of word recognition in their mother tongue. The participant pool ranged ages between 5 to 6, the chosen grade was Kinder, the number of students in this classroom was 13.

*Ethical issues*: Even though this research study is not dealing with sensitive matters, ethical issues were taken into consideration. As Silverman (2014) states, the protection of the identities of the people in an investigation is common sense; therefore, the name of the participants was concealed, and informed consent and confidentiality agreements were signed to ensure the participants were not pressured into accepting to participate in this study (*see appendix 1*).

### 3.5.2 Stage 2 – Design of the didactic sequence:

The didactic sequence was divided in *5 moments*, each one took a class (40 minutes), for a total of 5 days of application. The number of the set of words selected to teach to preschoolers were 10: cat, dog, chicken, duck, pig, goat, sheep, duck, horse, rabbit. The type of activities were diverse: showing picture cards of the selected vocabulary to the kids to get familiarized with the name of the animal in the bottom of each picture, this activity was modeled by the teacher; drilling the pronunciation of each animal and then students repeated twice, for example: I pronounced /*duck*/ then the kids repeated the word, some of them pronounced [duk] others did accurately pronounce [dʌk]. Recast took place in this drilling exercise to make the participants aware of their mispronunciation " how do you say, [duk] or [dʌk]." Thus, the students could choose the correct way of pronunciation, the same was done with each of the words of the target vocabulary; ask students, individually to identify three random animals from the set of farm animals (10 words), to evaluate the learning of them. This particular activity was recorded, and later was analyzed by me;

singing nursery song from a video related to the topic *"Old Mac Donald had a farm,"* this song was played 4 times, with the purpose of familiarizing the kids with the sounds of the animals and their images. The kids were motivated, and learnt the choreography and the song; play a matching game in the classroom, dividing the students in two groups competing between them to match the animal with its name, the group with more matched animals won. These activities took place in the classroom.

The ICT tools used to support the learning process, were two webpages with interactive games related to the selected topic (farm animals), to engage students to the topic and make them interact with these meaningful tools.  This particular moment of the didactic sequence was essential to achieve the general objective of the study: to analyze the effectiveness of using ICT tools to teach vocabulary to preschoolers in a private school in Cali, and to link the process made beforehand in the classroom to the interactivity of the online games. When the kids were taken for the first time to the computer laboratory, they had the opportunity to experience a different learning process, they had audiovisual resources, that helped them to identify easily the animals with the sounds and their names, they practiced with each game for four times, and they had the chance to correct the mistakes when they matched the incorrect image with its name and at the end, had a successful performance.  (*see appendix 2*).

### 3.5.3  Stage3 – Application of the pretest:

In this stage the pre-test was applied to the kids, in order to identify their previous knowledge of the students of the set of words that is going to be taught (*see appendix 3*).

### 3.5.4  Stage 4: - Application of the didactic sequence:

The didactic sequence was developed with the chosen students, also a field journal was used to write down descriptions and key moments of the application of the didactic sequence. To teach the vocabulary to preschoolers through  didactic sequence designed, to be developed in five

sessions, each session was covered in a class each one of 40 minutes, it took five days (*see appendix 2*) to apply the whole teaching strategy. The sequence was designed with a number of activities according to their ages and that as a result students were engaged and motivated with the learning process.  It was essential to have a computer laboratory so students could use them and have Internet access.

### 3.5.5 Stage 5 – Application of the post test:

The application of the post test had the purpose of assessing the learning of the vocabulary taught through the didactic sequence to the preschoolers. It was applied after the last moment of the didactic sequence. The information collected which helped to analyze the performance of each participant with the ICT tools and the complement of the classroom activities to enhance their learnging process (*see appendix 3*).

### 3.5.6 Stage 6 – Data analysis:

The data gathered from the application of the pre test, didactic sequence and post test were analized in light of answering the research question and to fulfill the formulated objectives in this study.

### 3.6 Didactic sequence description

| | |
|---|---|
| **School:** Colegio Ginmasio La Colina | **Number of students:** 13 / **Ages:** 5 -6 years old |
| **Grade:** Kinder -Tigers  **Time of class:** 40mins. | **Subject:** English |
| **Topic:** Farm animals | **Teacher:** Viviana Giraldo Martinez |

**Didactic sequence goal:** Promote the learning of specific vocabulary using ICT tools to support the teaching process, while students were engaged and motivated.

**Moment one:** In this stage, the students were particularly motivated with the activities of the day, during the first twenty minutes of this session the teacher called individually each student to apply the pre test that was divided into two parts: the first part was about matching the picture of the animal with the correct word, and in the second part was about identifying and pronuncing the words. The teacher showed each of the 10 farm animals asking the students: What animal is this? To see how well did the students recognize the animals and their pronunciation.

During the second part of the session, twenty minutes, the teacher showed to the students picture cards with the pictures of the farm animals and below the names of each animal, then the teacher asked the students to pronounce each animal the way the thought it was pronounced. Then, the teacher modelled the pronunciation and the students repeated the words in group and individually. When pronuncing and identifying the animals the most difficult words for the kids were: *Sheep, Goat*, *Dog and Duck*.

From the first session the students worked with the teacher the pronunciation of the animals, the students have different moments during the session to practice the pronunciation of the different animals in the correct way by repeating with the teacher.

**Moment two:** the researcher started the session with a short review about the target vocabulary to activate the students' learning. Then, the teacher called individually student by student to show them the picture cards and asked them: What animal is it?, to keep a personalized report in the journal of the results to then analyze them, the teacher recorded each answer of the students. A total of 3 animals were showed to each student, to give them same opportunities of recognition of the animals and to avoid anxiety during the process.

**Moment three:** To start this session in a fun way, the teacher reproduced the video to the students of "*Old Mc Donald had a farm*", the students sang this song. The second part of this session involved a matching game to be played in the classroom, the teacher divided the class in two groups, then explained the rules of the game, placed in two different groups the picture cards and the cards with the names upside down,  the kids had to discovered from the group of the animals one animal and find the name of the animal correctly to obtain a point in the other group of cards. The students were very excited and motivated with this game.

**Moment four:** The teacher asked students to choose from a set of farm animals their favorite one to be colored by them,  after that they paste them in their English notebooks. Then, the teacher took the students to the computers laboratory to practice the vocabulary with an interactive online game from the website of  *British Council kids* to consolidate the learning of the target vocabulary. The interactive online game was a matching game where the students needed to find the pair of the same animal of a total of 12 given animals. When the kids were interacting with the game 50% of the participants liked this game and were very motivated. The kids played this online game four times, to practice  enough times the vocabulary to become familiarized with the game and as well to level their learning, taking into account the different paces of students, to finally as a teacher feel satisfied with the process and the obtained results of each student with the inteactive online games.

**Moment five:** In this final session, students were taken to the computers laboratory to interact with the second online game chosen by the teacher. This online game from *Sheppard software* showed the animals and also reproduced the sound of the animals when the user placed the mouse over the animal, the goal of the game is to identify the animal by clcking on it. The game has three levels, in each level the user needs to identify different animals.  The other 50% of the kids liked this game and were very motivated and curious. The kids played this online game three times, to practice enough time the vocabulary and become familiar with the game.

# 4. FINDINGS AND DISCUSSION

As mentioned before, there were six stages involved in the procedure of this study: *Stage 1*, involved choosing the participants; *Stage 2*, was devoted to the design of the didactic sequence; *Stage 3*, was the application of the pretest to the participants; *Stage 4*, involved the application of the didactic sequence; *Stage 5* was dedicated to the application of the post test; finally the *Stage 6* was dedicated to the analysis. The analysis will be divided in two levels: **didactic sequence**, in terms of determining its usefulness regarding its main objective and, the other level is the analysis of students' learning before and after the didactic sequence which is done through a **comparison of pretest and post-test**.

## 4.1 Didactic sequence

The purpose of creating the didactic sequence was to teach specific vocabulary (farm animals), to preschool students of a private school in Cali. ICT's as a learning strategy played an important role in connecting teachers and students with new technologies (Romina et al, 2006, p. 3). Particularly in early childhood stage, ICT plays an essential role, for a clearer understanding of how children learn to use technologies through play is therefore needed to help teachers realise the learning potential of technologies within play-based approaches to pedagogy (Bird & Edwards, 2015, p. 3).

Likewise, the activities presented in each of the five moments of the didactic sequence were created in a strategic way for preschoolers in order to enhance their learning of the target vocabulary by exposing learners to different kinds of activities that promote a meaningful learning on listening and pronunciation, in this way it gives structure to the sequence a path to follow.

As a result, five stages were put together with the aim of promoting the learning of specific vocabulary, including the use of ICT tools. These moments were chosen to be applied in this particular order with the purpose of teaching the vocabulary to the participants of the study.

The design of the didactic sequence also had its basis in Łockiewicz et al. (2018) who note that a foreign language (FL) acquisition begins in preschool, at which time "young learners are particularly linguistically sensitive, it allows for a higher FL competence in future" (p. 1). The five moments happened this way:

1. **Moment one:** From the beginning of the application of the teaching strategy there were 14 partcipants, due to the disapproval from the parents in the informed concent, one student did not continue in the process.

   The first moment of the teaching stategy was to apply the pretest, to assess the previous knowledge of the target vocabulary of the participants. The students were very motivated and they wanted to know the topic of the classes. The pretest was applied individually, I explained each point of the evaluation, *some kids asked, what happen if we don´t know all the vocabulary?* I told them that this was the purpose of my visit, to see what they already know, and teach them what they do not know yet.

   The pretest had two components, the first one was to match the picture of the animals with their equivalent words, the *cognitive load* (which refers to the total amount of mental effort being used in the working memory) of this first component implied for the student to have a previous mental image of the animals and to identify what the word that describes that image looks like, to finally match each pair in a correct way. The kids enjoyed this part and their performance is shown in a table below:

| Student | Score |
|---|---|
| Juanita | 5/10 |
| Samuel | 7/10 |
| Maria Antonia | 7/10 |
| Emiliana | 7/10 |
| Violeta | 9/10 |
| Maria Camila | 10/10 |
| Gabriela | 10/10 |
| Adelaida | 10/10 |
| Maria Alejandra | 10/10 |
| Juan Diego | 10/10 |

| Tomas | 10/10 |
|---|---|
| Sofia | 10/10 |
| Nicolas | 10/10 |

*Table 1: pretest matching exercise*

In general the students performed really well matching the word with the pictures of the animals (*see table 1*). The test had been previously discussed with the homeroom teacher. She made some assumtions about the possible performance of the kids with this first component of the pretest. She told the researcher that she was not very sure if the students were able to match the words with the picture of the animal, *but that I could try to see what happened?* Because of the amount of students, it was decided to divide students in two groups to apply the test, one group was assigned to her and the other to the researcher. When the time came to apply the first component, the homeroom teacher was amazed with the performance of the kids, while they developed the matching part.

During the second component of the pretest, I showed the pictures of the 10 target words of farm animal and asked the students to tell me *what animal was it?* In this component of the pretest the required cognitive load implied for the student to use the internal storage of the bank of images of animals in their working memory and identified the one that was being showed and say it aloud. The students in general had a very good English level, most of them recognized 4 or more animals, only one student indentified 2, and one student indentified 9 animals out of 10.

The next part of this moment was to teach the target vocabulary to the kids with its pronunciation. The animals that were more difficult to pronounce for the students were: sheep and goat.

2. **Moment two:** In the first 15 minutes of the class, I made a short review of the vocabulary and its pronunciation. In this part of the class, preschoolers were very motivated, I asked individually to any student to tell me what animal was the one that the I was pointing at on the board, the students raised their hands and wanted eagerly to participate. The cognitive load required in this

activity implied for the student to use the internal storage of the bank of images of animals in their working memory to identify the one that was being showed and tell it aloud.

In the second part of the class, I called one by one the students to ask them to discover randomly three picture cards of the animals and prononunce them aloud, while this was happening the teacher record the answers of the students, to analyze their performance in recognition of the target vocabulary, the homeroom teacher helped drilling the pronunciation of the other kids as they were waiting for the teacher to call them:

| Student | Identified animals |
|---|---|
| Maria Antonia | Cat – X – cow (did not recognize *sheep*) |
| Emiliana | Cat – dog - chicken |
| Maria Alejandra | Cow – rabbit - duck |
| Nicolas | Pig – goat – horse |
| Violeta | Pig – sheep - dog |
| Sofia | Horse – chicken - duck |
| Adelaida | Dog – rabbit – cow |
| Juan diego | Pig – goat - cat |
| Tomas | Goat – duck - pig |
| Samuel | Cat – dog – X (did not recognize *sheep*) |
| Gabriela | Sheep – horse – cat |
| Maria camila | Rabbit – goat - dog |
| Juanita | Dog -  X – horse (did not recognize *goat*) |

*Table 2: identification and pronunciation*

From the table above, it can be said that te participants identified accurately the given animals, there were three cases where students could not identified the animal.

3. **Moment three:** This moment of the didactic sequence had two important components: the first one was to sing a song related to the topic "*Old Mac Donald had a farm,*" the idea was to make this moment of the class fun and to incorporate the topic to a song, and that the students had the opportunity of making the sounds of the animals while singing.  The main purpose of the activity was to give context according to the topic taught. The identification of the farm in the the video favors students to associate the images, movement and sounds as a memorization strategy. As Maria del Carmen Fonseca & Sebastian Pulido (2015) claim, "special emphasis is given to ICT in early ages and to the contribution of multimodal teaching through the selection of music-visual interaction formats specially designed for the learning of foreign languages in early childhood education" (p.2). This happen as a result of the combiened senses that are activated during the reproduction of the video, these are: *Image* (visual learning style), *movement* (kinesthetic) and *sounds* (auditory learning style).

The previous warm up activity  helped to engage the students with the following activity, a matching game. In this game, the students could practice the learnt vocabulary in the classroom. I divided the class in two groups, the purpose of the game was to discover one animal that was placed in a group of picture cards and the name of the animals that were in other group  of cards that the student also had to discover. The group that discovered more animals with their correct matching name won.  The students worked in groups of girls and boys, the idea was that each member of the group participated. The studentes were very competitive, and both teams wanted to win, but the girls was the team that won.

It is essential to mention that there was a particular case of a student that had the lowest learning of the target vocabulary, she was Adelaida, she started with a previous knowledge of 2 words and ended the learning process with a total of 3 words, increasing her vocabulary knowledge in a 10% . This happened because the students started late the teaching strategy, in the third session.

4. **Moment four:** In the first 20 minutes of the class, the students had previously chosen an animal to color, I brought the animals and when the students finished they pasted the animals in their

English notebooks. After this activity finished, I took the students to the computers laboratory, and, there, they had the chance to interact with the first chosen online game, from the webpage from the *British Council – Learing English Kids*: The purpose of this game was to find the matching pair of picture and name of the animals, this interactive online game consolidates the learnt vocabulary because sincronize the senses such as: sound, image and movement to facilitates the learning of the vocabulary. The kids were familiarized with the mechanic of the game, because they did a similar matching activity previously in the classroom, it allowed to fix in their memory the recognition of the images related to the vocabulary. They played the game for 3 to 4 times so they could interact and get familiarized with the purpose of the game, as well as have the opportunity to identify the wrong matching picture and then correct it. they were really motivated and excited, because this was the first time they visited the computers laboratory to interact with an online game in the school context. 50% of the students liked this game, to the other 50% of the students I will refer in the moment five of the didactic sequence. Additionally, the activities done in class, plus the interaction with the online game, showed positive results in the learning process.

5. **Moment five:** In this last moment, I took the students to the computers laboratory, for their second session, to practice the target vocabulary with the second online game from *Sheppard Software*: The purpose of this game was to first identify the given animal (sheep, cow, pig and chicken), then click on all the target animals that appear on screen. They played the game for 3 to 4 times so they could interact and get familiarized with the purpose of the game, as well as have the opportunity to identify the target animal and recognized from the different given animals and finally click to the correct one. In this game, they had the opportunity to listen to the sound of each animal when the student put the cursor of the mouse over the image. The other 50% of the students liked this game. Additionally, the activities done in class, plus the interaction with both online game, showed positive results in the learning process.

The difference between using these interactive online games from using traditional classroom material, such as picture cards, is that picture cards give to the student an idea of how an image in real life could be, but it also triggers the visual input. In contrast to the online interactive games that stimulates in a higher level the cognitive demand of students as they have in one ICT tool kinesthetic, visual and auditory input that facilitate them to achieve their learning process in a fun and easier way.

The way these ICT tools help me in my teaching practice is to consolidate the learning of the vocabulary of the  farm animals. Because preschoolers had the possibility of interaction, and while they were interacting they can see, listen and notice the way how animals perform in their natural environment. The changes that I identified from the kids when they were at the computers laboratory playing the online interactive game were the positive attitude from them to this new practice, the way the kids were curious about the first contact with ICT tools and they were going to achieve the goal of the oniline game.

The last part of the class was dedicated to apply the post test, the same way as it was applied the pre test, it was done individually. The teacher called student by student to complete the component of matching the picture of the animals and its equivalment word, then the teacher showed the picture cards of the animals to the kids to identify and prononunce them.

Finally, it should be stressed that the work with the sequence faced the incorporation of the ICT tools smoothly, it wasn't designed to be 100% based ICT tools, but the moment in which the interactive online games were included it worked to consolidate the learning of the target vocabulary in preschoolers optimally. However, this important moment of the didactic sequence was possible thanks to the infrastructure of the school (two computers laboratories of 23 computers per lab) and stable internet connection. The webpages were selected with specific settings, where the kids feel comfortable while interacting with the online games as well as certain cognitive demands were required from students such as: memorization, identifcation and matching . The attitudinal process in the students from the beginning of the application of the didactic sequence was positive, the kids were always motivated, curious, participative, competitive while playing, etc.  It is worth to highlight that the didactic sequence

did make a difference in raising students learning of the target vocabulary, the percentage of knowledge increased  (52.23%). In the following analysis level the results will be explained in detail, which will allow to remark the significant particularities of the different moments of the study.

## 4.2 Comparison of Pre test & Post test

In the final level, both *pre-test* and *post-test* analyzed the learning of the target vocabulary (farm animals) by preschoolers; by exposing learners to different inputs (showing picture cards and colorful animals in both tests). The finidings of the research are summarized in the given chart below,  the results obtained from the *pretest* that assessed the previous knowledge of the kids of the target vocabulary (farm animals), the application of the whole *didactic sequence* including the incorporation of the *ICT tools (interactive online games)* to consolidate the learning of the target vocabulary in preschoolers, this is reflected in the *post test* results that helped to answer the research question and achieve the traced objectives of this study as well:

| No | Students' name | Pretest: Number of identified animals | % | Post test: Number of identified animals | % | % of increse of vocabulary knowledge |
|----|----------------|-----------------------|-------|-----------------------|-------|-----------|
| 1 | Nicolas | 8 | 80 | 10 | 100 | 25 |
| 2 | Sofia | 9 | 90 | 10 | 100 | 11.1 |
| 3 | Tomas | 8 | 80 | 10 | 100 | 25 |
| 4 | Violeta | 6 | 60 | 8 | 80 | 33.3 |
| 5 | Samuel | 6 | 60 | 7 | 70 | 16.7 |
| 6 | Ma. Camila | 5 | 50 | 7 | 70 | 40 |
| 7 | Juanita | 5 | 50 | 6 | 60 | 20 |
| 8 | Ma. Antonia | 4 | 40 | 7 | 70 | 75 |
| 9 | Gabriela | 4 | 40 | 9 | 90 | 125 |
| 10 | Emiliana | 4 | 40 | 9 | 90 | 125 |
| 11 | Ma. Alejandra | 2 | 20 | 7 | 70 | 250 |
| 12 | Adelaida | 2 | 20 | 3 | 30 | 50 |
| 13 | Juan Diego | 4 | 40 | 9 | 90 | 125 |
| | **Weigthed average** | | **51.54** | | **78.46** | **52.23** |

*Table 3: Percentages of pretest & post- test results*

*Note*: Both the pretest and the post test had a total of *10 farm animals* to be identified by the participants.

Following are listed the interpretation of the data collected:

- Students knew in average a 51.54% of the words when the pretest was applied, and after the application of the post test the knowledge of the vocabulary of students increased a 52.23%. Reflecing the benefits of the incorporation of the ICT (*See table 3*).

- An alternative way of analyizing this data is that 8 students out of 13 did not have the minimum of the previous knowledge, it means less than 5 words, that is the half of the target vocabulary that is the 61.5%.

- After applying the post test and fininishing with the application of the whole didactic sequence only 1 from 13 students didn't have the minimum knowledge of the vocabulary (at least 5 words), that means the 7.7% (*See table 3*). This percentage is calculated from the division of the total of students that participated in the study, 13 from the number of students that did not reach the minimum of knowledge of the vocabulary, in this case 1 student.

- In the pretest application none of the students reached the 100% of the previous knowledge of the target vocabulary; in contrast after applying the post test 3 of the participants reached a 100% of the learning of the target vocabulary, this represents 23% from a total of 13 students participating in the study (*See table 3*). This result reflects how the incorporation of the ICT tools in the last moments of the didactic sequence helped in a siginificant way to consolidate the learning of the target vocabulary, thanks to the extra cognitive demand from the kids present in the interactive online game, such as: auditory, visual and kinesthetic.

- It caught the researcher's attention a student who obtained only 20% (the lowest percentage) in the application of the pretest (first stage of the didactic sequence), while in the application of the post-test (last stage of the didactic sequence) the same student reached 70% of the knowledge of the vocabulary taught, increasing the learning rate in a 250%, as a consequence showing the benefits of the incorporation of ICT tools (*See table 3*).

**Students with less than 5 words identified of the vocabulary**

Total students: 13
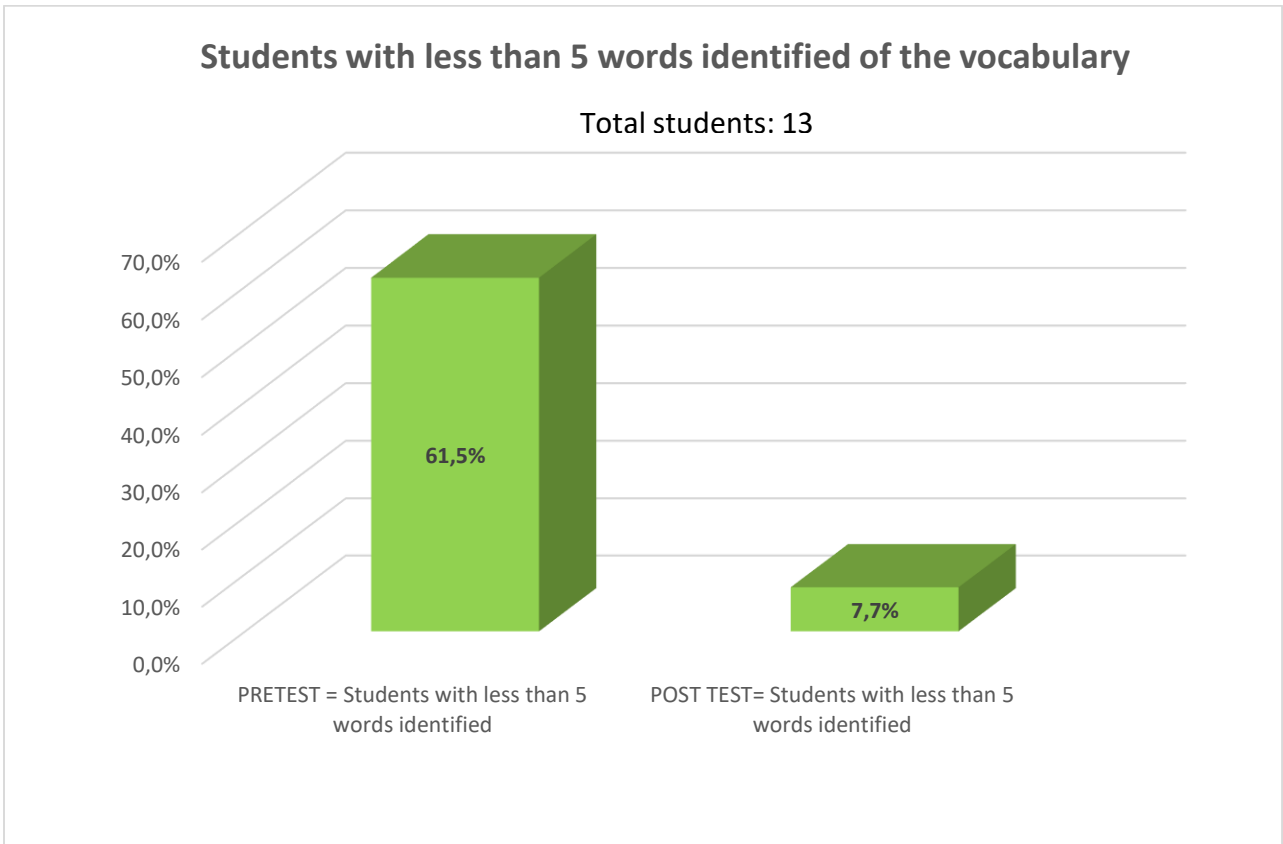


*Graphic 1: Pretest & Post- test contrast*

- It was found a particular case of a student that had a previous knowledge of the 90% of the recognition of the vocabulary and in the pronunciation, after the application of the didactic sequence and the ICT tools in the learning process, she achieved the 100%.

- The participants showed a high amount of curiosity and an active desire of getting involved in the variety of activities, they also showed motivation while they were participating in the project.

- The participation of the students in the diverse activities were always high, the students raise their hands to give an answer, and interact constantly during the activities with their classmates.

- The students from the beginning of the application of the sequence were very motivated, always trying to perform their best, and always asking: What is the next activity teacher? or "Let´s do more of these exercises next class."

- An interesting issue happened when it was the time of taking the participants to the computers laboratory, this was the first time of the kids interacting with the ICT tools such as and this webpages in an academic environment. The kids liked this new experience, and ask for a next time at the computers laboratory to work in similar activities.

- The ICT tools helped to trigger in a significant way the learning process in early childhood students, because of the different resources that are available for them such as, online games, videos of nursery songs, etc. that make them feel that the learning process is a fun experience.

It is needed to mention once again the specific objectives and then analyze if they were achieved in the results:

The first objective was *to design and implement a teaching strategy based on the use of ICT tools to teach specific vocabulary to preschoolers in a private school in Cali*. This objective was the first to be accomplished, since this was the point of departure of the study, the teaching strategy was reflected in the construction of the didactic sequence, which then was applied to the selected course. The second objective was *to assess the knowledge of specific vocabulary of children before and after implementing the teaching strategy.* This objective was the next one to be accomplished, when the application of the pretest and the post test occurred the knowledge of the specific vocabulary was tested in different moments of the study. And the last objective was *to assess whether the teaching strategy based on ICT tools was effective to teach vocabulary to preschoolers*. The results showed that this objective was satisfactorily accomplished as well, as it can be seen in the *table 1,* where it is presented a contrast of the pre test and the post test, and the last column showed the percentage of increase knowledge, this column reflects the effectiveness of the teaching strategy.

It is worth concluding that the extent to which the incorporation of ICT tools helped the participants to consolidate the learning of the target vocabulary in kinder "tigers," was important. Taking into consideration the results and discussion of the instruments used in the research (pretest and post test) it is evident that there were significant differences related to the results obtained in the students performance before and after the work with the didactic sequence. Nevertheless, it is not advisable to generalize results given the limitation of the study to only one preschool course. This group has its own characteristics which may or may not be replicated in the other courses. Nevertheless, the invitation is to conduct a longer study with a larger group, and to compare results.

There are aspects to take into account that may helped to trigger  the learning process of the target vocabulary to this particular preschool group, such as the novelty of going to the computers laboratory for the first time, as well as the design of the interactive online games which were colourful with realistic sounds, and movement, these resources made it meaningful for the participants. Each moment of the didactic sequence was designed with a particular purpose, this means that the first three moments had the objective introducing the target vocabulary by interacting with traditional material in a classroom environment, developing activities such as: interacting with picture cards while identifying the farm animals, coloring animals, singing a song while watching a video realted to the topic and participate in a matching game to practice the vocabulary with the classmates.

Another meaningful advantage of incorporating ICT tools is that the students had the opportunity to practice many times with the same exercise, gave them the chance to correct what they may had wrong.  Another aspect that is important to highlight was the specific feedback that each kid got with the pronunciation and the additional support of the teacher when they were just starting the animal recognition, each participant had the chance to practice in a computer each student and they did not have to wait for other classmate to finish  so they can start playing the interactive online games one.

# 5. CONCLUSIONS

The findings of the current study can shed some light to researchers in the field with regards to seek to include in the curriculum the work with ICT tools with the early childhood groups in the private sector in the Colombian context, and also to train teachers in the use of the ICT tools and how to incorporate it in the classrooms.

Additionally, it is important to stress how the findings answered the report's research question: *How can ICT tools help to increse the learning of specific vocabulary in preeschool children in a private institution in Cali?* The way ICT tools help to increase the learning in preschoolers is noteworthy, since ICT tools proved to trigger in an important way the learning process in early childhood students, because of the different resources that are available for them such as, games, videos, etc. that make learners feel that the learning process is a fun experience. What makes it fun about learning while using ICT tools is the design of the online games, the extra resources that are involved, such as: realistic sounds, colorful images, movement of the characters, extra points when the kid answers correctly,  also the possibility of practicing many times, etcetera. Students knew in average a 51.54% of the words when the pretest was applied, and after the application of the post test the students the *increase* of the knowledge of the vocabulary reached a 52.23%. Reflecing the benefits of the incorporation of the ICT.

After applying the post test and fininishing with the application of the whole didactic sequence only 1 from 13 students didn't have the minimum knowledge of the vocabulary (at least 5 words of the target vocabulary), that means the 7.7%, this student had the lowest learning of the target vocabulary, she started with a previous knowledge of 2 words and ended the learning process with a total of 3 words, increasing her vocabulary knowledge in a 10%, she started late the teaching strategy, in the third session. In the pretest application none of the students reached the 100% of the previous knowledge of the target vocabulary; in contrast after applying the post test 3 of the participants reached the 100% of the learning of the target vocabulary, this represents 23% from a total of 13 students participating in the study. It caught particularly the attention a student who

obtained only  20% (the lowest percentage) in the application, while that in the application of the post test this student reached 70% of the knowledge of the vocabulary taught, increasing this way the learning in a 250%, thanks to the incorporation of the ICT (*See table 3*).

After the application of the didactic sequence and both tests, students showed particular interest in the topic taught, and wanted to continue having classes as the ones that the researcher applied, but understanding the worth of a regular class, it has to exist a balance and a purpose of including in the lesson ICT tools. It is meaningful as well to have the techcnological resources in the school, such as computers laboratory, and enough computers for students, and a good and stable internet connection.

There are some recommendations that the reasearcher would like to include in this document: Teachers shouldn't be afraid to involve preschoolers  in the use of ICT because previous research demonstrated that ICT tools highly trigger the assimilation of  knowledge, or in other words triggers their learning, in this particular subject of English as a Foreign Language. Moreover, it can be concluded that if this didactic sequence had been developed for a longer period of time, more vocabulary could have been taught and a various ICT tools could also have been included. It would also be meaninful if more teachers would like to include this type of resources, seeing this positive learning results, that it can work not only with language learning but as well with another disciplines. It would be interesting to develop this kind of studies related to the incorporation of the ICT in the classroom, because in Colombia there are no studies being held in this field.

Finally, the future research direction would be to conduct a medium-scale study,  with a larger number of students, to see how applying this sequence to different courses would draw similar results or if they would be dfferent.

# 6. REFERENCES

Andrews, R. (2003). *Reasearch Questions.* London: Continuum.

Baker, S. J. (2006). The utilization and integration of ICT tools in promoting English language teaching and learning: Reflections from English option teachers in Kuala. *International Journal of Education and Development using Information and Communication Technology*, 1-11.

Bingimlas, K. A. (2009). Barriers to the successful integration of ICT in teaching and learning environments: A review of the literature . *Eurasia Journal of Mathematics, Science and Technology education*, 1-11.

Bird Jo, S. E. (2015). Children learning to use technologies through play: A Digital Play Framework. *British Journal of Educational Technology*, 1149–1160.

Creswell, J. W. (2014). *Research Design. Qualitative, quantitative and mixed method approaches. 4th edition.* Lincoln, Nebraska: SAGE.

Dictionary, M. W. (2019). *Merriam Webster*. Retrieved from https://www.merriam-webster.com/

*Expert Market*. (2017). Retrieved from https://www.expertmarket.co.uk/web-design/different-types-of-websites

Fandiño-Parra Yamith José, J. R.-J.-V. (2012). The Challenges Facing the National Program for Bilingualism. *Universidad de La Sabana*, 363-381.

Fonseca Maria del Carmen, S. P. (2015). Enseñar Inglés en Educación Infantil: Materiales y Recursos. *Revista Electrónica de Estudios Filológicos*, 1-22.

Guran Mihaela Adriana, A. M. (2017). On Game-Based Learning Support for Early Childhood in Romania. *Revista Romana de Interactiune Om-Calculator*, 183-196.

Jamieson Romina- Proctor, P. C. (2006). ICT integration and teachers' confidence in using ICT for teaching and learning in Queensland State schools. *Australian Journal of Educational Techology*, 1-20.

Kabaday, V. (2018). Exploring the Preschool Teachers Views on Professionalism, Quality of Education and Sustainability: International Study in Estonia and Turkey. *Journal of Teacher Education for Sustainability*, 5-18.

Kenning, M. (2007). *ICT and Language Learning.* New York: Palgrava Macmillan.

Lasagabaster, D. (1998). The Threshold Hypothesis Applied to Three Languages in Contact at School. *International Journal of Bilingual Education and Bilingualism*, 119 - 133.

Lazar, A. (2014). Pre-primary Educators and the Use of Digital Resources to Raise Early Foreign Language Awareness. *Frontiers in Psychology*, 1-6.

Locklewicz Marta, Z. S. (2018). Early Predictors of Learning a Foreign language in Pre - School- Polish as a First Language, English as a Foreign Language. *Frontiers in Psychology*, 1-11.

Ministerio Nacional de Educación. (2004-2019). *Programa nacional de bilinguismo.* Bogota, Colombia: Ministerio de Educación Nacional.

National English Program for Basic Education, N. (2011). Didactic Strategies and Class Planning. *NEPBE- Professional Development Workshop*, 1-49.

Nilsson Tor, P. S. (2016). Technology education in preschool: providing opportunities for children to use artifacts and to create. *Springer Science+Business Media Dordrecht*, 29-51.

Notebook, E. (2000). Data Analysis in qualitative research. *EBN Notebook*, 1-3.

Nunan, D. (1992). *Research Methods in Language Learning.* New York: Cambridge Univeristy Press.

Pange, E. I. (2010). E-learning activities for articulation in speech language therapy and learning for preschool chlidren. *Procedia Social and Behavioral Science* , 1-5.

Pelgrum, W. J. (2001). Obstacles to the integration of ICT in education: results from of a worldwide educational assessment. *Computers & Education*, 1-16.

Preradović Mikelić, G. L. (2017). The Role and Attitudes of Kindergarten Educators in ICT-Supported Early Childhood Education. *TEM Journal*, 162-172.

Ruiz Paule, V. Á.-G.-P.-S.-M. (2017). Music learning in preschool with mobile devices. *Behaviour & Information Technology,*, 95-111.

Silverman, D. (2014). *Interpreting Qualitative Data. A Guide to the Principles of Qualitative Research.* London: SAGE Publications Ltd.

Wagithunu, K. M. (2014). Integrating Information Communication Technology Skills in Kenya. *Mediterranean Journal of Social Sciences*, 2039-2117.

Xia Liu, E. T. (2014). The Use of ICT in Preschool Education in Greece and China: A Comparative Study. *Procedia - Social and Behavioral Sciences*, 1167 – 1176.

# 7. APPENDIXES

In this chapter there are included three appendixes that helped to reach the objectives in the different stages of the study. The *appendix 1*, was sent to the parents of the students to informed them and have the authorization of the participation of the students in the study. The *appendix 2*, consists in the didactic sequence, where it describes what was going to be developed each session. And finally the *appendix 3*, the pre and post test that was applied to the students in the different moments of the study, the pre test was applied before starting the application of the didactic sequence, and the post test in the last part of the study, after applying the didactic sequence.

## 7.1 Informed Consents



Estimados Padres de Familia de "Tigres" Kinder

Les informamos que Viviana Giraldo, estudiante de Maestria en Enseñanza del Inglés en la Univesidad ICESI y exalumna de La Colina, va a realizar secuencia didáctica con los niños de kínder.

Por lo anterior, les solicitamos autorizar la participación de su hijo (a) en la actividad.

_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Autoriza la participación de su hijo (a) _____

Si _____ No _____

Firma de quien autoriza: _____

Gracias por su apoyo, Equipo Tigres Kinder.

7.2 Didactic Sequence

| | |
|---|---|
| **School:** Colegio Ginmasio La Colina | **Number of students:** 14 / **Ages:** 5 -6 years old |
| **Grade:** Kinder -Tigers    **Time of class:** 40mins. | **Subject:** English |
| **Topic:** Farm animals | **Teacher:** Viviana Giraldo Martinez |

This didactic sequence has the purpose to promote the learning of vocabulary, while students are engaged and motivated with this English topic with the help of ICT tools. Kids from 5 to 6 years old that study Kinder. This sequence will be developed in five sessions:

**Didactic sequence goal:** Promote the learning of specific vocabulary, while students are engaged and motivated with the learning process and strengthen it with the help of ICT tools.

| STAGES | DESCRIPTION | DATE |
|---|---|---|
| **Moment one:** (first session) | Before starting this session, the teacher will apply a pre-test, to check the previous knowledge of the students. After the pre-test the teacher will show picture cards of the chosen vocabulary (cat, dog, chicken, duck, pig, goat, sheep, duck, horse, rabbit) to the students, to make them get familiarized with this specific vocabulary and their pronunciation, like this: <br> 1. The teacher will model first the pronunciation of each word. | May 6th |

| | | |
|---|---|---|
| | 2. Then the teacher will ask students to repeat each word out loud.<br><br>3. The teacher will ask one by one to the students to pronunciate individually the given word, to check their pronunciation performance. | |
| **Moment two:**<br>**(second session)** | Before starting the activity of this session the teacher will make a short review to activate the students' learnt.<br><br>During this session the teacher will make students take turns and discover a picture card individually, then the teacher will ask:<br><br>What animal is it? To verify if the student recognize it and pronounce it accurately.<br><br>The teacher will record audios as evidence of each student's answer to analyze them. | May 7th |
| **Moment three:**<br>**(third session)** | Before starting with this session, the teacher will sing the song "*Old Mc Donald had a farm*"with the students, then teacher will explain to the students the instructions of the match game that will take place in the classroom with picture cards, like this: the students are going to match the picture of the animal with the correct word. Students will take turns to complete the whole set of animals and words. | May 8th |
| **Moment four:**<br>**(fourth session)** | Before starting this session, the teacher will give to each student their favorite animal to color it as a complementary activity to continue the familiarization of the topic.<br><br>Students will practice the learnt vocabulary with an interative online game in the computers laboratory. | May 9th |

| | Resource: https://learnenglishkids.britishcouncil.org/es/archived-word-games/find-the-pairs/farm-animals | |
|---|---|---|
| **Moment five:** (fourth session) | Students will practice the learnt vocabulary with another interative online game in the computers laboratory. **Resource:** http://www.sheppardsoftware.com/preschool/animals/farm/animalfarmgame.htm After this activity the teacher will apply to the students a post-test to check if students learnt the whole set of vocabulary after applying the didactic sequence. | May 10th |

**Online Games information:**

1. **British Council Learn English Kids– Farm Animals game:**

**Learning Objective:** To practice the word recognition skill and matching the words of the **farm animals** to the correct picture that represent them.

**How to play:** Click on a tile to reveal the hidden word. Click on another tile to make the match. Once a correct match is made, the word and the picture will have a green frame and a check mark on the top of the tiles. If the word and the picture is not correct it will have a red frame and a check mark on the top of the tiles.

**Farm animals**

Click on the cards to match the words and pictures.

**Farm animals**

Click on the cards to match the words and pictures.

2. **Sheppard Software Animals:**

**Learning Objective:**  To practice the listening skill and the recognition of the **farm animals**.

**How to play:** Click on the play arrow to start, listen to the instructions and click on the arrow to continue. Click on the animals that the audio indicates until the audio says "well done." Follow the same instructions for each of the animals of the game.

7.3   Pretest / Post test

**KINDER –  (FARM ANIMALS)**

**Name:**_____

**A.** Match the **word** with the correct <u>picture of the animal</u>:

**1.**   Cat

**6.** Horse

**2.**   Dog

**7.** Duck

**3.**   Cow

**8.** Pig

**4.** Chicken

**9.** Rabbit

**5.** Goat

**10.** Sheep

**B.** The teacher will show some images of farm animals to the students, to identify their previous knowledge of this vocabulary. (*pre test*)

**C.** The teacher will show some images of farm animals to the students, to identify if the student learned the set of vocabulary taught previously (*post test*)

| Number of identified animals | List of identified animals |
|---|---|
|  |  |