

**THE USE OF LANGUAGE LEARNING APPS AS A DIDACTIC TOOL FOR
VOCABULARY BUILDING**

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**Research project in partial fulfillment of the requirements for the degree
Master in English Didactics**

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DEDICATION

To God

I dedicate this entire project to God and to the Lord Jesus Christ. I do not find words to describe my immense gratitude for being a strong light in my path every single day and for blessing me with the Saint Spirit by providing me wisdom, humility and peace.

To My Family

Everybody has an inspiration to reach goals, and this challenge was another project I have done inspired by my Family. My mother is the pillar of this achievement; thank you for your encouragement, help and support every single day. I will not forget everything you have done for me since I had the chance to participate in this program; your words, actions and love have been the energy that pushed me to work.

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GLOSSARY

APPS: an application, especially as download to use in mobile devices as tablets, phones and so on.

DIGITAL NATIVE: a person who was born during the age of digital technology and who is familiar with computers and the internet from an early age

DUOLINGO: it is a free language learning platform which includes a language learning website and app as well as a digital language proficiency assessment. It offers the chance to practice most of the language skills especially vocabulary and grammar.

EFL: English as a foreign language. Refers to students whose first language is not English and who are learning the language in country where it is not spoken.

ELL: English Language Learner. Refers to students who are unable to use language effectively.

ICT (information and communication technology: it is an umbrella term that includes any communication device or application.

KAHOOT: it is a set of questions on specific topics. It can be created by teachers, students, business people, and social users. The questions are asked in real time to an unlimited number of participants with a specific time frame; creating fun, and game as a learning environment. It provides fulfilment feedback to all the participants.

LANGUAGE LEARNING APPLICATION (LLAS): those are applications to learn or master a language.

LEXICAL SKILLS: words that have independent meaning of a language; or relating to

mastering words and vocabulary.

MEDIA: the main means of mass communication such as: newspapers, T.V, radio, internet, direct e-mail.

TECH: Technology

TECHNOLOGY DEVICES: any item, piece of equipment or product that is used for entertainment, communication, learning, teaching and so on.

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ABSTRACT

A reflective educator's thirst for knowledge, inquiry and ways to better his teaching practices can never be quenched. Research, as the best method to soothe such desire, has allowed me to find a way to ease my students' English language learning process. For this reason, this study explores the use of language learning apps as a didactic tool for vocabulary building, allowing me to not merely help them learn a few words, but to have a better attitude towards learning, through a tool that is at hand. It was developed through a mixed-methods approach, with a concurrent design in order to collect, analyze, triangulate and validate qualitative and quantitative data. Although there is controversy on the use of technology in the classroom, this study advocates for practices that go beyond the classroom boundaries and that are part of students' lives and social realities. The data collection tools included an Initial Diagnostic and a Final Achievement Test, eight lessons and eight assessment sessions, eight entries to a research journal using Language Learning Apps and a Final Survey; all aligned to the research objectives. In the end, it was possible to provide evidence of the way technology and classroom practices can be allied to effectively foster vocabulary building.

Keywords: Language learning apps, high school students, vocabulary building

RESUMEN

La sed de un educador reflexivo por el conocimiento, la investigación y las maneras de mejorar sus prácticas de enseñanza nunca puede ser saciada. La investigación, como el mejor método de calmar tal deseo, me ha permitido encontrar una manera de facilitar el proceso de aprendizaje del inglés en mis estudiantes. Por esta razón, este estudio explora el uso de aplicaciones de aprendizaje de lenguas como herramienta didáctica para el desarrollo de vocabulario, permitiéndome ayudarles a aprender no sólo unas palabras, sino a tener una mejor actitud hacia el aprendizaje, a través de una herramienta que está a la mano. Se desarrolló a través de un enfoque de métodos mixto, con un diseño concurrente, con el fin de recolectar, analizar, triangular y validar datos cualitativos y cuantitativos. Aunque hay controversia sobre el uso de la tecnología en el aula, este estudio aboga por prácticas que van más allá de los límites de la clase y que son parte de la vida y las realidades sociales de los estudiantes. Las herramientas de recolección de datos incluyeron una Prueba de Diagnóstico Inicial y una Prueba de Desarrollo Final, ocho lecciones y ocho sesiones de valoración, usando Aplicaciones de Aprendizaje de Lenguas, ocho entradas a un diario de investigación y una Encuesta Final; todas alineadas con los objetivos de investigación. Al final, fue posible proporcionar evidencia de la manera en que la tecnología y las prácticas de clase pueden estar aliadas para fomentar efectivamente el desarrollo de vocabulario.

Palabras clave: Aplicaciones para aprendizaje de lenguas, estudiantes de secundaria, desarrollo de vocabulario

INTRODUCTION

There has been much controversy and advances in the discussion of the benefits that the use of technology and online resources bring to foreign language teaching and learning. Different authors have agreed on the advantages of including technology for personal, social and educational purposes Brown, (2014); Davis, (2006); Diaz, (2015); Jarvis and Achilleos, (2013). Nevertheless, there are still many challenges to face when it comes to using this tool in the classroom. Teachers on the one side, often have to persuade their colleagues and supervisors of the academic purposes behind technology, and on the other side face connectivity problems, overall in a rural setting as the one that was the context for this research project.

Notwithstanding, it is essential to consider that limited resources in our classroom, make it challenging, but not impossible to innovate our teaching practices; moreover, the latent need of students to find a purpose for learning the language and a good means to do so, trigger on teachers the possibility to rethink their practices, make them more appealing, and bridge that generational gap among them and their students. As Kumaravadivelu, (2001) suggests, there is a need for language education that is context-sensitive, as we understand the linguistic, sociocultural and political particularities of our population. In this regard, one of the most remarkable aspects of this work is the particularity that it embraces, as little research has been done in the rural area, even less taking technology as its main tool. "Language teachers can ill afford to ignore the sociocultural reality...nor can they afford to separate the linguistic needs of learners from their social needs" (Kumaravadivelu, 2001, p. 544).

In effect, in order to refresh my teaching practices and find new and better ways to help my students enjoy and succeed in their foreign language learning process, this study aims at investigating the effects of using language learning apps (LLAs) as a didactic tool for vocabulary building. The first step was to do a state-of-the-art of the different publications on the topic in question, in order to construct a solid theoretical framework.

Although I found many studies that shed light upon the advances in research and publications in the field, there was nothing specifically mentioned about rural contexts; nevertheless, the publications found helped me nourish and reshape the direction of my research.

After that, I examined students' vocabulary skills, through an initial diagnostic test, which uncovered their real needs, and provided statistical evidence of individual and group members' abilities, which could be compared and contrasted with the results obtained after the intervention. Once I noted their strengths and challenges regarding this skill, I moved to implementing some vocabulary lessons through two language learning apps (Duolingo and Kahoot) in order to help students learn, practice and assess their vocabulary development. Parallel to this process, I took notes of every event that occurred during each lesson and assessment session, through a research journal, in order to reflect upon my students' process and learn by means of their experience, which is what Kumaravadivelu, (2001) considers to be the role of the teacher researcher, "keeping one's eyes, ears and mind open in the classroom to see what works and what does not,... and assessing what changes are necessary to make instruction achieve its desired goals". (p. 550)

In the end, based on the process developed by students, it was necessary to contrast findings revealed prior to the intervention with the final outcomes, in order to uncover potential progress on students' vocabulary development, as well as their own perception of the process lived. The findings present a positive panorama on students' vocabulary building, as well as the development of a better attitude for language learning, which bring benefits to their current as well as future educational experience.

1. OBJECTIVES

1.1 GENERAL OBJECTIVE

- To determine the effects of using language learning apps as a didactic tool to foster vocabulary building in tenth graders at a rural school. (Is it the preposition that should be changed here?)

1.2 SPECIFIC OBJECTIVES

- To examine students' vocabulary skills in order to gain understanding of the level of intervention needed.
- To explore the use of language learning apps as a didactic tool for vocabulary building.
- To uncover the academic benefits behind using language learning apps for vocabulary building in a rural school.

1.3 RESEARCH QUESTION

- To what extent do language learning apps used as a didactic tool foster English vocabulary building in 10th graders at a rural school?

2. RATIONALE

The context and population of this study gave me reasons to think of exploring new innovative ways in which a foreign language could be studied in a rural community. Students' little interest and low motivation to foreign language learning, reflected in little progress after years of instruction, and therefore low results in standardized exams, were the reasons which triggered this study. Taking advantage of a new computer lab with internet access brought to the school, my love for technology, and my students' interest in technological tools, such as cell phones and computers, I was motivated to find a means to bridge the gap between traditional classroom instruction and students' likes.

Certainly, the advances in Information and Communication Technologies (ICTs) have made mobile applications, wikis, blogs, second life etc. commonplace in schools, and I firmly believe that we as educators cannot ignore this phenomenon and should support our teaching on them. In my school context, connectivity is not always fast and it does not work at times, but I noticed that it kept my students engaged in any activity proposed by means of cell phones or computers. Additionally, the two and a half hours of classroom instruction were not enough to achieve the goals set at the beginning of the school year, and I hypothesized that giving students extra class responsibilities in which they had to use technology would motivate them more.

Additionally, students' apathy to language learning was partly due to the fact that the school's emphasis is aligned with students' social reality -agroindustry and dairy production; they saw no need to learn a foreign language, nor hope to enter a university because of their parents limited economic resources. Most of them finish high school and start their own farms and business related to what is produced in the zone.

Given the low results in *Pruebas Saber* did not worry them much, they needed additional motivation to find a real use for the language. Thus, the design of this project needed to include strategies in which students saw immediate results, as a way to start preparing

them for better long term achievement. For this reason, the intervention was key to give students the opportunity to have an engaging meaningful and fun process and to challenge them to compete against each other to excel among group members. This made them want to work outside the classroom to achieve the weekly goal set, what provoked that a strong reason to use technological resources outside and inside the classroom was having good scores during the competence in class, no matter if this meant coming back to school in the afternoon to get Wi-Fi connection.

As a result, this strategy had positive side effects for their learning in general, and for the development of vocabulary skills, as would be evidenced in the following chapters. Although thought for this specific group of students, it would certainly add to the literature on language learning in other similar populations, as it presents strategies that can be used to motivate students and to take advantage of the resources at hand to improve the teaching and learning practices.

3. METHODOLOGY

3.1 RESEARCH DESIGN

This study was developed through a mixed-methods approach with a concurrent design in order to collect, analyze, triangulate and validate qualitative and quantitative data to thoroughly approximate and illustrate the phenomenon under study. Due to the nature of this work, the concurrent design was adopted because it allows for the combination of both qualitative and quantitative approaches at the same level of hierarchy for a more systematic and reliable analysis. Figure 1 exemplifies the design followed.

Figure 1. Concurrent mixed method design



Source: Hernandez, Fernandez and Baptista, (2010)

Hernandez, Fernandez and Baptista, (2010) assert that the mixed-method approach represents a set of systematic, empirical and critical processes of research, and imply the collection and analysis of quantitative and qualitative data, as well as its joint discussion and integration, to make inferences, product of all the information gathered

(meta-inferences), and get a better understanding of the phenomenon under study. Additionally, Johnson, Onwuegbuzie and Turner, (2007) consider the mixed-method approach to be the systematic integration of quantitative and qualitative methods in one single study, in order to obtain a more thorough figure of the phenomenon.

Hernandez, Fernandez and Baptista, (2010) suggest that in this kind of design, there is no real mixed process, but a hybrid study where different processes concur. They agree that pragmatism is the foundation of mixed designs, which means that context-based research is the most important element to consider when designing a project –elements that work for the population being intervened. Therefore, this research project was thought for a rural population that with limited resources and little access to technological devices took advantage of every single opportunity to use technology, which would become an opportunity of motivation and a means for language learning.

On the other hand, Onwuegbuzie and Leech, (2006) assert that both methods are applied and analyzed simultaneously and that this type of design implies four conditions: 1) Qualitative and quantitative data are collected separately; 2) Neither qualitative, nor quantitative data is constructed on each other's basis; 3) Not until both sets of data are collected and analyzed separately can conclusions be drawn; 4) After collecting and analyzing data of both components one or more meta-inferences can be made, converging both quantitative and qualitative inferences.

Moreover, Creswell, (2014) establishes that using a mixed method approach has several advantages, which include findings grounded in participants' experiences, building on multidisciplinary teams through the interaction of quantitative and qualitative researchers and methodological flexibility; all of this to enrich data analysis and results, which will bring more benefits and meaningful outcomes for the population being studied.

The design described above contributed to the collection and analysis of both quantitative and qualitative data that could be analyzed separately as Hernandez, Fernandez and Baptista, (2010) would suggest, in order to integrate both data and make strong

inferences afterwards. The instruments chosen, which are explained below, drew on data such as the following: The level of vocabulary that students reached is presented in tables based on a test given, then explained lexically to better understand and give more sense to the analysis. So forth, every quantitative evidence is also analyzed qualitatively and vice versa.

It is important to mention that Content Analysis was used for this research to examine the data instruments in order to see those patterns or differences among them. Fraenkel and Wallen, (2009) believe that in content analysis, the researcher must first plan how to select, order and code the contents that are available for analysis. Pertinent categories emerged that would allow to identify what occurred during the implementation of the project, then compare the different instruments in order to get those patterns, commonalities or differences among the instruments applied. From this analysis, 25 categories among the various instruments object of the study emerged for instance cellphone use, social networks, attitudes, tolerance in class, self-regulation, among others. Then all those categories were grouped into related categories such as: vocabulary knowledge and practice, assessment rules, teacher reflection for improvement, vocabulary development, students' reflections, self-regulation and so on. From Fraenkel and Wallen's, (2009) perspective, pertinent categories must be developed that allow to identify what is important to compare. From this perspective, the final categories were: from the IDT and FDT weaknesses and strengths in students' vocabulary, from Duolingo and Kahoot applicability of vocabulary through technological tools and from the teacher journal and learners' survey the categories were students' reactions and teacher-research reflections of the learning process.

3.2 CONTEXT AND PARTICIPANTS

This study was conducted at *Voz de la Tierra* school in Roncesvalles (Tolima) with tenth graders. There were 13 girls and 7 boys from 14 to 17 years old. This is a rural school in Tolima whose children have to face several social problems such as violence and low economic conditions. There are limited resources in the school, including no good access

to ICTs and no much material available for students to work outside the school. Students have two and a half hours of English instruction every week, but many of them do not like the language because they do not see a real use for it.

Students' little exposure and reluctance to learning English were my biggest challenges. Then, my goal was to find didactic alternatives that would encourage them to use the resources available to learn the language. Even though there is no good internet connection, students see technological devices as their friends and want to be using them all the time. All of them like to interact with devices such as cellphones and desktop computers, so they have good abilities to use these technological tools; therefore, this project was designed taking students' strengths and needs into account, in order to foster vocabulary building to trigger their desire to continue learning the language.

Voz de la Tierra school is located seven hours away from Ibague through very bad road conditions. (I decided to omit the phrase you highlighted because it did not fit properly in the text) This institution has 255 students in its main campus and 800 students in the different headquarters. Their educational philosophy is aimed on agroindustry, intellectual knowledge and community service for elderly people. Students have special preparation on sophisticated dairy products processes, on agricultural crops such as potatoes, beans, and strawberry.

Rural settings suffer from many social problems such as violence and extortion, which make life more difficult than in urban zones -facts that people and policy makers often forget. As in many rural settings in Colombia, there are many connectivity problems, but with the program "Vive digital plus" which was recently installed, it was possible to successfully develop this project. Nevertheless, some of the difficulties encountered were to change teachers' beliefs toward ICTs and technological devices as a learning strategy. Other teachers of the school who knew about my project were very skeptical because they thought it was just gaming and not learning. I also had to help students self-regulate the use of these devices for pedagogical purposes and make them believe that technology could become a transformative tool to amuse them and help them learn

English at the same time.

It is relevant to mention that this project was carried out in order to enhance students' English level and motivate them to learn. Their English learning process had not been successful so far because they did not perceive this one as an important subject; moreover, very few students considered the possibility of entering college. Other variables considered included the little resources and time dedicated to studying the language. All students had a very basic English level, which based on the results of the Initial Test, on my observation, and interaction with them as the homeroom teacher could be described as A1 in the Common European Framework of Reference (CEFR).

3.3 DATA COLLECTION INSTRUMENTS

This project was carried out during a six-month period, using the following data collection instruments designed to facilitate the reaching of the research objectives. There was an initial diagnostic test (IDT) and a final achievement test (FAT) (see appendix I), aligned to the first and third specific objectives, respectively. Although testing students has often been associated to grading, classifying, and in the worst case, punishing, Roediger, Putnam and Smith, (2011) suggest that testing can serve other purposes in educational settings, including, but not limited to identifying gaps in knowledge, providing feedback to instructors, and encouraging students to study. For the context of this research, the main purpose behind testing was to examine in detail students' initial vocabulary level and to compare it to their level at the end of the intervention. Additionally, there were eight lessons and eight assessment sessions with LLAs (Duolingo and Kahoot), which had the purpose of helping students learn vocabulary at a faster pace and being tested afterwards. These two LLAs are part of cutting edge features and gamification to increase motivation. Brown, (2014) agrees that no learning environment is static or monolithic, therefore, teachers need to adopt different stances and find a connection with students' lives outside the classroom for learning to be more meaningful. There were also eight entries to a research journal, taken by me as a researcher, based on every implementation, which contributed to reaching the second objective, and a final survey

to evidence students' perceptions about the process in a more explicit way, to provide further evidence on the reaching of the third objective.

3.3.1 Initial Diagnostic Test and Final Achievement Test. This test was given to students at the beginning and at the end of the project. The purpose was to assess their level of vocabulary before the implementation with LLAs, in order to objectively measure their gains in this process. The test included 10 sections for students to identify vocabulary in context. Students were asked to answer two reading comprehension exercises, with multiple choice of vocabulary; match word and image; answer true/false; fill in the blanks; circle the correct word; and match word and definition. This test also served to raise students' awareness on the importance of building their vocabulary. I designed the test taking as basis the vocabulary that would be taught in the units of Duolingo; I explored the different units and took the list of words used and the context in which they were presented. This test was useful to know students' level before the implementations in order to identify who had more knowledge of the language and who needed to work harder to reach the goals set. Giving the same test at the end of the implementations facilitated the assessment of students' progress.

3.3.2 Language Learning Apps -Duolingo and Kahoot. Two English LLAs were selected according to a needs' analysis done in the seminar on ICTs during the master's program (see appendix II). The first one is Duolingo which provides a set of lessons to increase different language skills. It has two major components: grammar and vocabulary exercises and an interface to translate articles from the web.

Duolingo was used as an alternative to help students learn vocabulary of eight topics chosen at the beginning of the project. The use of this interface was a way to find didactic options which students could enjoy, as they expanded their vocabulary.

Duolingo is a free language-learning app, as well as a digital language proficiency assessment exam because it exposes students to language items that are later on assessed through different exercises provided. Duolingo was created in 2009 by

Professor Von Ahn from Carnegie Mellon University, as a way to help language learners develop skills in a fast and free way. It now offers the opportunity to learn 23 languages. Once students sign up, they are sent a daily reminder to practice the language they have chosen. They are also encouraged to practice for at least 10 minutes every day and are given extra points if they persevere.

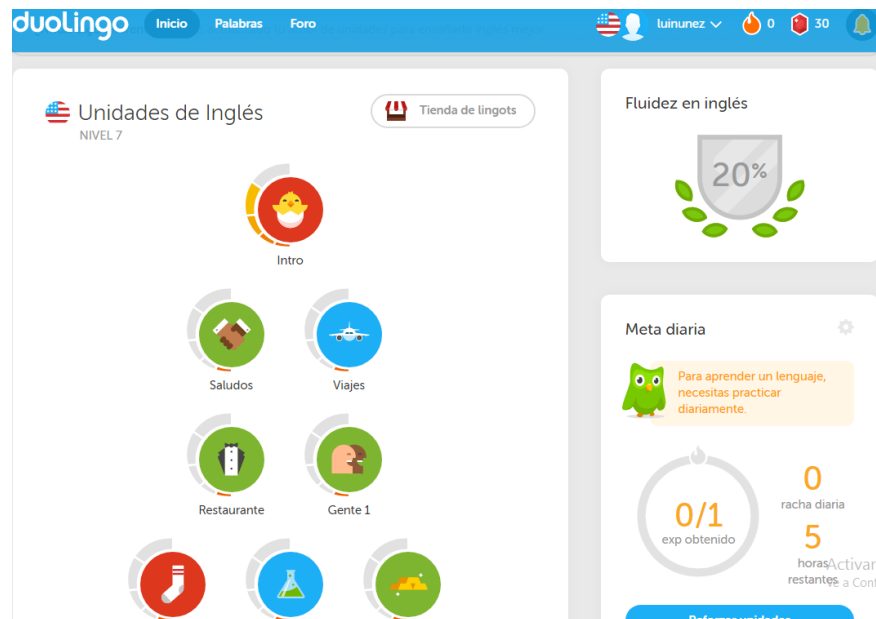
Figure 2. Duolingo symbol



Source: Duolingo, (2017)

The green owl in figure 2 is the symbol of the app and learners must practice frequently to keep it happy. The bonus points they receive are called *lingots* and can be used to buy the owl clothes or gifts, or for learners' own learning challenges, to learn additional expressions or to bet and gain more lingots if they practice more than a lesson a day.

Figure 3. Duolingo layout



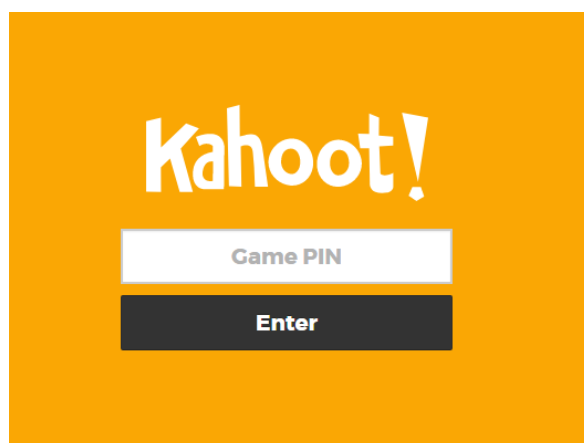
Source: Duolingo, (2017)

Figure 3 illustrates the layout of a unit. Learners see the list of topics to be studied and click on a specific unit to start practicing. They can move back and forth and review the units they have already practiced, but they cannot skip units. When learners encounter new words, they have the option to deduce meaning from context or see the translation of the word. The app also offers the pronunciation of the word and different uses of it in a series of sentences for learners to become familiar with it. The topics presented go from common everyday language to more complex specialized vocabulary. The vocabulary list of the eight units studied in this project is presented in the Data Analysis and Results chapter.

The second app is called Kahoot, which provides the opportunity to design an instrument to assess students' performance during a lesson. Kahoot is a free game-based learning app that gives students fun and engagement while learning. It can be used to practice any subject or language and it is for all ages. There should be a host to feed the app with the desired content. In the case of this project, I signed up and became the host so I could administer the game. The vocabulary of the lessons that had been previously practiced through Duolingo were uploaded to the app and assessed through Kahoot.

Opposite to Duolingo, Kahoot encourages team work and competition because everyone's results are displayed on a screen (smart TV or Video Beam projector) in a list from higher to lower score.

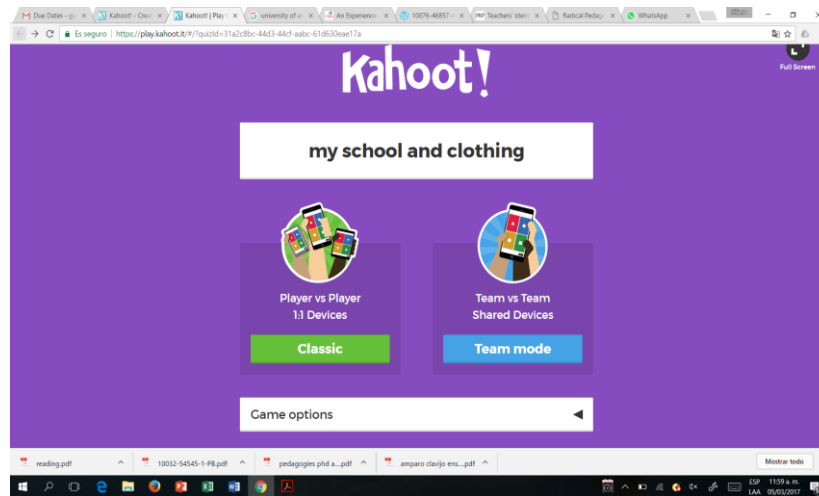
Figure 4. Kahoot layout



Source: Kahoot, (2017)

Figure 4 portrays the layout that is presented to learners when they want to start using the app for assessment. Since the host has previously signed up, he provides everyone the pin and they all connect in an interface as players of the same game. Figure 5 shows the way one of the lessons was presented to students in this project. The title of the unit or topic to be assessed is on the top of the screen and there are two options –classic and team mode; afterwards, the names of the players start appearing on the screen, and once players have chosen an answer for the question posed, their scores appear as well. This is a very friendly app for novice hosts and players, which makes it accessible and helpful for classroom use.

Figure 5. Kahoot assessment



Source: Kahoot, (2017)

As of this project, all students used Duolingo to practice the lessons during class time. Once they learned how to use the app, they seemed to be at ease. As homework, they were asked to practice the lessons one more time and were given workshops to use the vocabulary learned. The week after each lesson had been studied through Duolingo, students were assessed through Kahoot. In this application the students and I created a free account where we could interact with tasks and challenges. One of the strengths of this app is that every teacher can adapt already existing public material to their own needs and purpose and give it a learning use, or design his own material based on the lessons being studied. To play the game, the class needs internet access, a projector and a screen where students can visualize the activities. The participants give their answers using mobile devices, such as smartphones, tablets or laptops.

This app is a way of language learning gamification. Gamification is the use of game features and game design techniques in non-game contexts (Werbach, 2015). Gamification is a way to encourage intrinsic motivation and autonomy, that is why, it is essential to use it in regular classes. Through awakening the sense of competition, Kahoot encourages students to come prepared for classes and to be more involved in the lessons. In this regard, the assessment of the vocabulary studied each week was

carried out right after the students had finished playing the game; this was the final component of the game and was generated by the system. Giving specific feedback to students was a way to nurture self-confidence and motivation. Students also had the opportunity to rate the quiz they had just taken, in terms of level of enjoyment and learning. They mostly rated quizzes with 4 or 5 stars because of the level of satisfaction they had experienced while playing. After that, I also received students' comments orally and took them into account for the next implementation. Each test was designed based on students' background knowledge, needs and expectations. The vocabulary list of the eight units studied in this project is presented in the Data Analysis and Results chapter; additionally, it is important to mention that the implementation and assessment of each lesson done through the language learning apps allowed to develop the project with students and to draw the results expected.

3.3.3 Research Journal. The research journal provided me with a context for reflection and a way to collect data that would help me give count of those moments during the interventions that as a teacher researcher were difficult to recall, unless written. There were eight entries to the journal, one after every intervention, which helped me understand and analyze the processes my students were living, as well as to improve ways to approach the next intervention. As a matter of fact, Burgess, (1981) highlights the importance of keeping a research journal as it provides a detailed description of research actions and activities and gets you close to the data. Thus, my notes included comments and feedback provided by students as well as my own reflections of the process, which can be evidenced below in the data analysis chapter.

3.3.4 Final Survey. The final survey provided information to recall aspects of the process lived during the research project with regard to the use of technology in general, and LLAs in particular. It was a questionnaire with three open-ended questions that allowed students to express their thoughts about their experience during the project and which added to the categories of analysis of the results obtained (see appendix IV).

3.3.5 Ethical principles. I explained the project to students and parents to have their permission to develop it. Parents signed an informed consent form (see appendix III) and were told that their participation was voluntary. Students were encouraged to participate because of the learning benefits expected to be derived from the project, but were also informed that not participating would not affect their class grade or performance. Confidentiality and anonymity were guaranteed during the research project. All group members assigned themselves nicknames to register to the LLAs, to which I assigned codes for data analysis. This was done to protect participants' identity and to make the process ethical and comfortable for all of them.

4. THEORETICAL FRAMEWORK

Vocabulary building, technology and language learning apps were the main theoretical constructs that supported this research study. The following chapter depicts the views of different authors who have added to this ever-growing field in an international, national and local context.

4.1 VOCABULARY BUILDING

Without grammar very little can be conveyed, without vocabulary nothing can be conveyed (Wilkins, 1972)

Among the language skills that any learner needs to be able to develop a linguistic competence, vocabulary is foremost a key component, which Easterbrook, (2013) defines from two perspectives, the orthographical and the phonological. I find this distinction to be relevant in the English as a foreign language (EFL) context where this study took place because of the challenge that it gives learners when comparing English to their first language spelling and pronunciation.

Additionally, Multicultural & ESOL Program Services Education Department, (2007) an organization dedicated to finding strategies for language learning, asserts that vocabulary development refers to the knowledge of stored information about the meanings and pronunciations of words necessary for communication. Although they recognize the many possibilities that language learners have for expanding their vocabulary, including television, the internet, newspapers, audio recordings, among others, they acknowledge the benefits of effective vocabulary instruction, which include: definitional and contextual information about a word, multiple exposures to a word in different contexts, and encouragement of students' active participation in their word learning. The different views of vocabulary learning have interaction, real-language use, teaching strategies and real purpose for using the new vocabulary learned as

commonalities because besides having a goal in mind for learning, there should be moments for using the new knowledge for it to be meaningful.

Other publications include the use of different strategies for vocabulary learning; they are: the use of flashcards for sentence construction and for building cultural background (Hoffman, 2008); deepening on L2 vocabulary by using word families, which highlights the importance of derivational morphology to aid L2 vocabulary acquisition (Morin, 2006); re-purposing TV ads for building vocabulary (Alm-Lequeux, 2004), that presents the need to enhance language achievement and proficiency and remarks that a good strategy is not a recipe for success, but can be adapted taking into account each learner's situation.

Other studies have underlined different advantages of vocabulary development, and the two-sided effects contained within. For example, reading as a way to learn vocabulary and vocabulary learning that allows for better reading skills. Remarkably, Herman and Dole, (1988) state that teachers often assume that vocabulary is an important part of a comprehensive reading program because they believe that students who understand words in a selection will comprehend what they read. Also, the importance of contextualized and meaningful use in vocabulary learning, instead of long lists of meaningless words is suggested. All the studies above provide a conceptual framework for this research as they remark the need to contextualize, build upon existing knowledge and use strategies for students to learn in a more meaningful way.

Thus, our teaching strategies are to include a variety of experiences with vocabulary learning, encouraging students to learn by themselves, and as aimed at in this project, giving students tools for further language development, through the combination of technology and independent work, always making connections between existing and new knowledge. As a matter of fact, this is an invitation that we as teachers must accept in order to foster better long-term learning –context-related vocabulary teaching whose search for strategies occupies a primary position in our course planning.

In the national context, the foreign language research field has grown, likely because of the implementation of language policies that have contributed to clear goal setting and also because teachers are better prepared and more aware of their significant role to improve language education in the country; nevertheless, policies are never enough to improve quality of education, and more investment is needed to offer teachers' development programs, improve schools' infrastructure and reduce the number of students per class, guaranteeing coverage of all the student population, among other aspects needed to have better foreign language education in the country. Notwithstanding, in that search for improving, there are studies that explore the topic in question.

Regarding vocabulary teaching, Diaz, (2015) examined the effects of metacognitive strategies to help beginning young learners with difficulties increase and retain vocabulary. The purpose was to provide students with metacognitive strategy instruction for them to become aware of learning strategies, and afterwards, train them in the use of the metacognitive strategies for planning, monitoring, and evaluating their learning process. This study gains relevance for my research as the conclusions drawn suggest that working with specific strategies contributes to vocabulary acquisition skills, which adds to the creation of innovative solution to better our classroom practices.

Moreover Restrepo, (2015) analyzes the incidental learning of vocabulary in second language acquisition. He presents a state-of-the-art of different publications related, in order to understand vocabulary learning through incidental means, the relationship of reading and incidental vocabulary learning, and the strategies and tasks that promote the incidental learning of vocabulary. He concludes that L2 learners develop much of their vocabulary by incidental means, but such means can be enhanced by reading, and through multimodal glosses. Certainly, there are several language features that we pick up spontaneously through contact with different language sources, nevertheless the role of the teacher, the material and the strategies used cannot be underestimated in any learning process.

Additionally, a study carried out in our local context by Contreras, Charry and Castro, (2016) attempted to uncover the way the implementation of multimedia projects could help the speaking skill development in sixth graders, a population that was in need of other didactic alternatives to boost their language learning skills. The authors assert that there is a notorious need for more vocabulary instruction at all levels to gain English proficiency because the process of communication in students is frequently measured based on the number of words that they can use to express their ideas. Therefore, this is not only a matter of exposing students to sources of vocabulary, but about finding strategies that motivate, engage and foster long term and meaningful learning.

Another study carried out was developed by Devia and Garcia, (2017) in order to illustrate the impact of using podcasting, language learning strategies and collaborative work in the development of tenth graders' oral skills. This project exemplified the way students advanced in the development of the different components of the speaking skill, including vocabulary building, through the use of specific strategies, such as cognitive, metacognitive, and social language learning strategies. Therefore, more evidence is presented on the importance of planned vocabulary teaching for the reaching of specific language goals.

4.2 TECHNOLOGY IN LANGUAGE LEARNING

The development of tools and strategies to have successful foreign language learning processes has been a continuous concern in our field. Since its birth, Information Technology (IT) has contributed to the exploration of new and innovative approaches to facilitate such processes. Although it has been difficult to provide one single accepted definition, given the advances that IT has experienced over the years, Thong and Yap, (1995) defined it as computer software and hardware solutions that provide support of management, operations and strategies in organizations. This definition has no specific liaison with education, nor does it consider other types of devices, apart from computers, that serve similar purposes.

Afterwards, Attaran (2003) defined IT as the capacities that computers, software applications and telecommunications offer to organizations to deliver data, information, and knowledge. The definitions as well as the ways IT is regarded have been evolving as it reaches and is more accessible to different populations. In any case, it is a means that, if properly used, can bring benefits to the language education field.

More recently, Clavijo, Quintana and Quintero, (2011), while trying to inquire the pedagogical potential of ICTs in the Colombian context to promote new ways of collaborative learning through other learnings and bring students and teachers closer to the use of digital tools, discuss how ICTs have evolved in the Colombian school context, going from mere computer classes to having sophisticated labs that use internet and share their space with other forms of technology, such as smart boards and digital tablets. This study uncovers the educational role of technology and acknowledges the need to use students' reality to promote learning that is meaningful and contextualized.

Izquierdo, De la Cruz Villegas, Aquino, Sandoval and Garcia, (2017). developed a research study in public schools in Mexico to find out the connection between foreign language teaching and ICTs. They identified specific technological tools that teachers use in their classes, but also acknowledged that there are several hindrances related to the public school context that make teachers use their own resources, such as personal computers and cell phones, more than those available in the institutions. They also call for better technological training for teachers that allow them to maximize the resources available for their own educational contexts.

Davis, (2006) highlights the role of technology in different settings, influencing our lives and educational contexts. Thus, there is no way we can deny that the current and future context of language learning is to be mediated by computers, the internet and mobile devices. Nonetheless, the strategies used to integrate these in our classrooms will be the basis to have a successful learning experience. Moreover, the resistance many teachers have to using technology in the classroom might originate in the preconceptions driven from the idea that it makes students lazy and little creative. Given electronic

devices are part of our classrooms, instead of regarding them as our enemies and confiscating them, we should create well-designed plans that allow technology to facilitate learning.

In regards to teachers who are supportive of practices mediated by technology, Firat and Serpil, (2017) did a comparative study of internet usage in different groups of teachers. They assert that teachers need to be internet literate so as to help their students gain internet competency. Adding to this, I consider that more than helping students gain competency, teachers and their classes are to be mediators between students and technology to help them make the best out of this tool. Another study that examined the role of technology as well as teachers' attitude toward it was conducted by Cirit, (2015); she explored the perception that pre-service teachers had towards different kinds of assessment, including traditional, online and using web 2.0 tools. After experiencing all the alternatives, teachers concluded that the technological tools used for assessment enhanced learning, increased interaction, provided detailed feedback and improved critical thinking.

Classrooms around the world as well as our Colombian classrooms, no matter the location, are also part of this technology wave; some with better connectivity than others, but most of them present this challenge for us to take it as an opportunity. In this line of thought, Clavijo, Quintana and Quintero, (2011). reflect upon the school today and its digital literacy needs. They discuss that the overgrowing use of ICTs by students at all levels outside the school context is a challenge for teachers who should find pedagogical ways to successfully integrate ICTs in the school curriculum. This is thus a call to rethink our practices in order to cater for the needs of our students who have grown using technology and deserve to have it as a natural part of their academic environment.

4.3 LANGUAGE LEARNING APPS

Using LLAs is a potential progress generator in the language classroom and in students' language learning experience. Janssen, (2013) defines a mobile application as a type of

software designed to run on a mobile device, such as a smartphone or tablet. She also states that Apps frequently serve to provide users with similar services to those accessed on PCs. They are generally small, individual software units with limited set functions.

Likewise, different teacher researchers report their attempts to integrate Mobile learning or LLAs in their language classes. Golonka, Bowles, Frank, Richardson and Freinek, (2014). developed a review of technology use in foreign language learning and teaching by examining 350 studies that include the use of newer technologies; they aimed at uncovering the types of technology and their effectiveness. Their findings revealed that although evidence of efficiency is limited, technology has made a measurable impact on foreign language learning, helping the development of different skills. Also, Hwang and Wang, (2016) implemented a situated computer game in six graders in order to test the effectiveness of different guiding strategies in helping students acquire vocabulary. The results revealed that students had significantly better learning achievement with higher cognitive load and it engaged them more than traditional classes.

Additionally, Chen, (2016) developed a study that evaluates LLAs for second language learners in order to know their benefits for adult learners. She studied eight LLAs including *Duolingo*, *Shanbay Vocabulary*, *Speak English*, among others, and described them based on content quality, pedagogical coherence, feedback, motivation, usability, customization and sharing, and she concluded that this review allows teachers to make informed decisions. This study is a good model to understand the need to do in depth research, adapt and customize the tools to be integrated in our classrooms in order to provide a meaningful learning experience for our students.

Terantino, (2016) examined the effects of independent mobile assisted language learning (MALL) on vocabulary recalling and listening comprehension. He analyzed the characteristics of the apps preferred by the population studied and concluded that due to established goals and guidelines for playing as a means to provide language learning opportunities, students could have moderate gains in their skills development. Similarly, Almasri, (2013) studied the use of mobile technology in education to uncover foreign

language learners (FLL)'s perceptions regarding LLAs. She argues that although user interface designers and App programmers compete to develop the most effective LLAs, students should be able to decide the ones that work for them.

Furthermore, Ionita and Asan, (2016) recognize the advantage of using technology in our classes as an inherent part of the contemporary digital society where the digital natives have technology as part of their daily activities, given this enhances learning autonomy and helps develop language skills. They invite teachers and methodologists to consider the changes experienced in society that inevitably affect the ways we learn and teach.

On the other hand, there are authors who present their positive views about technology, as follows: Kukulska-Hulme, (2009) affirms that technological devices create a potential for significant change in teaching and learning practices because they can be engaging and relate more closely to students' social reality. This assertion goes in line with Dewey's (1933) contributions to education as he argues the need for a pedagogy at the level of the student because students learn in activities where reality is present. He affirms that it is not enough to prepare students for life, but to see school as life itself, with meaning during its realization. Then, all learning strategies that are the result of a process of inquiry and thought with our students' context in mind are valuable input to reach humanizing goals in our classrooms that will derive in more motivated and engaged learners.

Moreover, Brown, (2014) supports that using cell phones in the classroom helps to connect learning to students' immediate surroundings; they are particularly effective in supporting collaborative learning in small groups. He stands for Jarvis and Achilleos', (2013) idea of evolving from CALL (computer assistance language learning) to MALU (mobile language use), as our current students are more in contact with other electronic devices. Notwithstanding, Herrera, Cruz and Sandoval, (2014) consider the importance of helping students self-regulate the use of cell phones, yet not seeing them as foes because they are part of students' lives. They explain that educational interventions should seek innovative approaches to problematic concerns, having teachers be agents

of change who accommodate to learners' preferences and styles.

In the Colombian context, Salinas Vacca, (2014) reported a descriptive study that analyzed the construction of a collaborative class project in a virtual environment. This study describes the opportunities that technology brings to work with peers, as they develop language skills. Cote Parra (2015) also explores the types of interactions that FLL experience while using a wiki as a supporting tool for a face-to-face research course. The results back up the notion of using technological tools as support for regular classroom practices.

The previous studies presented an overview of the state of the art of the use of technology for language learning. A few studies were found that address the specific issue of using LLAs to foster vocabulary development; nevertheless, the theory studied highly supports this research given it provided insights into what teachers are doing in different academic contexts. The advice given in many of the studies explored is the importance of seeing technology as an allied, and also the relevant role of the teacher as a channel between technology and students. It is therefore the teacher the one who plans and makes decisions that benefit his own learners, in student-centered classes where learners' active roles are evident. The drawbacks of technology are also to be considered because there should be a balance between the benefits it brings and the potential harms; that is why the teacher's role keeps being relevant no matter how advanced technology might be.

5. DATA ANALYSIS AND RESULTS

In order to examine the extent to which the use of LLAs fostered vocabulary building in EFL tenth graders, it was necessary to analyze all the events that took place in the different implementations; to observe students' reactions, limitations, constraints, misconceptions about the use of technology in the classroom, cellphones use regulation, as well as students' attitudes and level of commitment during the lessons. The data collected was then analyzed, and the most common findings grouped in categories to triangulate how all the instruments provided elements to create the results obtained.

5.1 INITIAL DIAGNOSTIC TEST

This initial test was essential to have a clear idea of the level of vocabulary students had at the beginning of the project. It was designed to explore students' strengths and weaknesses and allowed to identify specific areas that needed to be addressed during the intervention. Given vocabulary facilitates understanding and language use in general, students' limited vocabulary knowledge caused them many difficulties at the beginning to fill in the gaps or to find the best choice to complete a sentence. Table 1 illustrates the score obtained per participant in this test, within a scale of 100.

Table 1. IDT

Student	Score	Student	Score	Student	Score
F1	32	F8	24	M2	31
F2	36	F9	42	M3	16
F3	58	F10	29	M4	47
F4	45	F11	34	M5	26
F5	46	F12	28	M6	48
F6	18	F13	65	M7	34
F7	22	M1	53		
Group average: 36.7					

Source: Author

The average score for the group of 20 students was 36,7 out of 100, which means that, as a group, they did not get the minimum passing grade, had they been evaluated taking into account school guidelines, which require students to score at least 60 points to pass.

When grouping students by the score obtained, it could be evidenced that only one student score was above 60, and seven students scored 30 or below. Based on the guidelines established by the National Ministry of Education, tenth graders should have an A2 level in the CEFR, going to B1, which is required by the time they finish high school. The low scores obtained by the majority of students reveal that they are far from reaching these objectives, which would also affect their standardized test results (Saber 11) when they are in 11 grade.

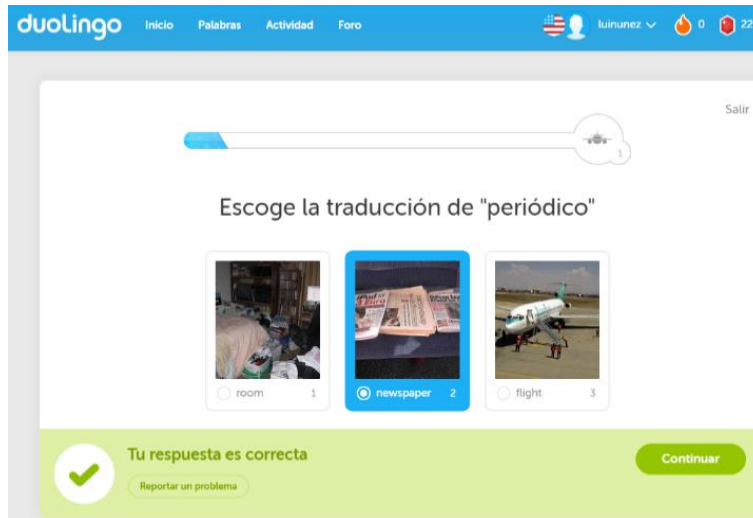
Among the different categories evaluated, students had more strengths in vocabulary related to familiar entities, such as personal information, numbers and family members. Their weaknesses included vocabulary related to food, travelling and clothing. The previous data confirmed the alarming situation lived not only in rural schools, but also in many other schools nationwide, in which the English learning process has not reached the expected goals; therefore, the need to continue searching better alternatives to remediate the current panorama is latent.

5.2 LESSONS, ASSESSMENT SESSIONS AND RESEARCH JOURNAL

Following is an analysis of the data collected based on the lessons studied through Duolingo, the assessment sessions done through Kahoot and the Research Journal entries, which describe my perception as a teacher researcher. The eight moments experienced will be described in order to create an understanding of the way the intervention was developed. It was deemed necessary to create a parallel among these three instruments (Duolingo, Kahoot, and Research Journal), as the three were the components of each one of the eight interventions, as follows: First the vocabulary was presented through Duolingo, the week after students were assessed through Kahoot and during both the lesson and the assessment I took notes in my journal to analyze the

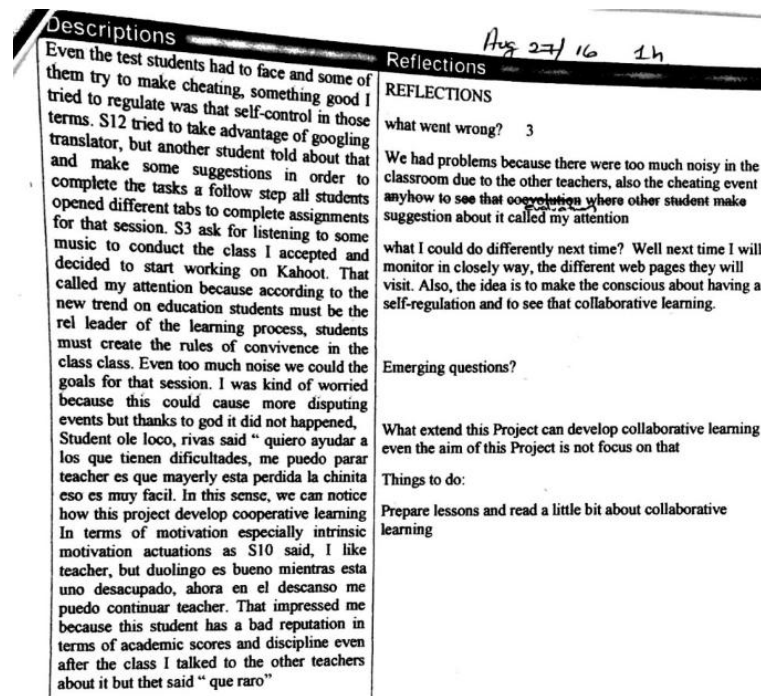
experience.

Figure 6. Duolingo lesson



Source: Duolingo, (2017)

Figure 7. Research Journal



Source: Author

The tables presented below reflect the process carried out during each implementation. This was repeated eight times in order to do a thorough process that would help my students expand their vocabulary.

5.2.1 Intervention 1

Table 2. Lesson 1

Vocabulary Lesson 1 - Duolingo (Greetings)		
Good	bye	speak
morning	goodbye	please
Hello	Spanish	sorry
Night	English	welcome
Thanks	how	and
Thank	do	very

Source: Author

Table 3. Assessment 1

Assessment session 1 - Kahoot					
Student	Score	Student	Score	Student	Score
F1	76	F8	72	M2	82
F2	90	F9	69	M3	46
F3	82	F10	86	M4	73
F4	62	F11	65	M5	83
F5	74	F12	70	M6	85
F6	65	F13	92	M7	98
F7	65	M1	84		
Group average: 75.95					

Source: Author

During the first lesson, students were introduced to the two LLAs and to the generalities of the topics that would be studied during the following weeks. There was a mixture of feelings of excitement, fear and anxiety, since for most of them English was not an easy

language to learn, nor their favorite subject. Once they created an account and began to practice with the two LLAs, the panorama changed for the better, as they started to realize the positive role that technology could have in their learning process. They started to regard their cell phones as learning friends, and not only as a tool that could be confiscated if they misused it. They now had the opportunity to use them in class and had to portray a sense of responsibility, which although more challenging at the beginning, was adopted afterwards.

Greetings was a topic familiar to them, nonetheless, the review helped them better the pronunciation of some words such as *night*, *please* and the [th] in *thanks*, as well as to remember some other such as *speak* and *welcome*. The results of the first assessment made some students uneasy, and gave confidence to most of them. They were all motivated during the test and eager to see their final score. A score of 75.95 as group average was satisfying for me as a teacher, but I also knew that I wanted more from my students. Only M3 scored below 60 and, on the opposite, three students scored above 90 points. The sixteen remaining had an average score, which was good for their first assessment.

5.2.2 Intervention 2

Table 4. Lesson 2

Vocabulary Lesson 2 -Duolingo (Travelling)			
Passport	there	reservation	now
Where	room	can	you
Flight	have	help	when
Going	here	stop	hotel
To	It	newspaper	need
Taxi	fine	today	luggage

Source: Author

Table 5. Assessment 2

Assessment session 2 - Kahoot					
Student	Score	Student	Score	Student	Score
F1	65	F8	34	M2	60
F2	68	F9	68	M3	35
F3	80	F10	60	M4	67
F4	77	F11	70	M5	69
F5	68	F12	68	M6	70
F6	68	F13	89	M7	86
F7	56	M1	67		
Group average: 66.25					

Source: Author

During the second intervention, 17 students scored above 60 points while only three were below. The topic presented a great challenge for many students because of words such as *newspaper* and *luggage*. No student had more than 90 points and the total average lowered to 66.25; the lowest of all interventions. I knew that more needed to be done in order to continue encouraging students to review at home and to take advantage of time at school to do so as well.

Subsequently, I designed an additional lesson with the vocabulary studied for students to practice using their computers. It was rewarding to hear them using expressions such as '*que vacano, que chevere, me gusta esto,*' as this was a signal of them getting more engaged. Also remarkable was the fact that they concentrated on the task and did not attempt to open facebook or youtube during their work that day.

5.2.3 Intervention 3

Table 6. Lesson 3

Vocabulary Lesson 3 -Duolingo (Clothing)				
shirts	wear	hot	outside	suit
wearing	clothes	cold	inside	coat
buy	new	old	because	underwear
buying	selling	small	skirt	socks
shoes	dress	it	wash	washing
pants	button	hat	black	scarf
jacket	big	mine	white	sweater

Source: Author

Table 7. Assessment 3

Assessment session 3 - Kahoot					
Student	Score	Student	Score	Student	Score
F1	50	F8	45	M2	75
F2	65	F9	71	M3	45
F3	84	F10	54	M4	63
F4	60	F11	63	M5	78
F5	72	F12	69	M6	84
F6	47	F13	96	M7	95
F7	68	M1	81		

Group average: 68.25

Source: Author

Clothing was one of the most challenging topics during the IDT, therefore, I provided additional practice for students in order to facilitate the learning of vocabulary related. I cleared doubts students had during the lessons and also explained meaning and usage of words that they did not understand from context or from the meaning provided by the app. In fact, the results of five students were below 60, and only one them above 90. Although not that much, students were advancing little by little. Students such as *M3* kept being a concern during the process because although they attended every class, their

progress was not as evident as that of other students. I talked to students who had low results, offering them more support, such as tutorials or additional practice if they needed it. Nonetheless, for most of them English was still a big challenge, and additionally they did not dedicate enough time to practice. They promised to work harder in order to continue improving.

Given the assessment sessions were competitive, students were doing their job, but also reporting other students who tried to cheat using translators. I raised awareness on the importance of self-regulating their learning and reviewing at home. This situation bettered in the following interventions. Nevertheless, there were also positive situations of students trying to collaborate with peers during the lessons. They asked for permission to go help others saying ‘¿me puedo parar teacher?, es que X está perdida.’, or ‘yo quiero ayudar a los que tienen dificultades.’

5.2.4 Intervention 4

Table 8. Lesson 4

Vocabulary Lesson 4 -Duolingo (School)			
Class	tonight	six	this
study	do	ask	school
studying	write	learn	question
read	writing	pen	professor
reading	working	paper	teacher
book	four	idea	raise
books	five	hand	us

Source: Author

Table 9. Assessment 4

Assessment session 4 - Kahoot					
Student	Score	Student	Score	Student	Score
F1	96	F8	66	M2	64
F2	82	F9	76	M3	86
F3	85	F10	60	M4	67
F4	77	F11	72	M5	85
F5	92	F12	82	M6	94
F6	68	F13	89	M7	100
F7	78	M1	84		
Group average: 80.15					

Source: Author

This unit was appealing to all students as they could appropriate the terms easily. We put into practice the knowledge gained, then when assessment time came they were all excited and prepared. The group average of 80.15 was the highest of all interventions, which encouraged students much more. No student had below 60 points and four of them had over 90 points, highlighting *M7* who had very high scores in all interventions and this time had a perfect score of 100. The vocabulary learned this time gave students tools to continue using words such as *pen, learn, study, class, school and idea* in other classes. Some of them reported their like for Duolingo saying '*Duolingo es bueno mientras esté uno desocupado para practicar más,*' and '*me ha gustado esta aplicación porque yo práctico y me califica.*'

5.2.5 Intervention 5

Table 10. Lesson 5

Vocabulary Lesson 5 -Duolingo (Animals)			
cat	spider	mouse	our
dog	elephant	chicken	walk
bird	crab	cow	eat
duck	turtle	fish	walk
horse	bear	its	swim

Source: Author

Table 11. Assessment 5

Assessment session 5 - Kahoot					
Student	Score	Student	Score	Student	Score
F1	75	F8	48	M2	81
F2	81	F9	89	M3	65
F3	94	F10	93	M4	73
F4	73	F11	75	M5	75
F5	82	F12	80	M6	98
F6	67	F13	92	M7	95
F7	72	M1	86		

Group average: 79.7

Source: Author

The topic of intervention five is one students are familiar with because of their context. Thus, talking about vocabulary related to animals and their environment was a good way of localizing knowledge or having 'context-sensitive language learning' (Kumaravadivelu, 2001). Only one student scored below 60, while five scored above 90. It was great to see students enjoying the lesson and asking additional questions to expand their vocabulary. They wanted to learn not only the names of the animals, but also vocabulary related to agricultural processes, such as milking cows, dairy products and coffee growing. This was an opportunity to go beyond the vocabulary suggested in Duolingo and work with students' goals, needs and interests in mind.

5.2.6 Intervention 6

Table 12. Lesson 6

Vocabulary Lesson 6 -Duolingo (Friends)			
I	house	sleep	ready
we	tomorrow	feel	weekend
they	come	friend	boyfriend
seven	we	Sunday	girlfriend
eight	tomorrow	Saturday	out
nine	party	uncle	aunt

Source: Author

Table 13. Assessment 6

Assessment session 6 - Kahoot					
Student	Score	Student	Score	Student	Score
F1	71	F8	48	M2	71
F2	69	F9	86	M3	48
F3	82	F10	77	M4	75
F4	62	F11	65	M5	78
F5	74	F12	72	M6	99
F6	53	F13	96	M7	98
F7	65	M1	82		

Group average: 77.55

Source: Author

During this lesson students work was not outstanding. The group scored a total of 77.55 points, which is just above average compared to the different interventions. Three students were below 60, while other three above 90. Learning about days of the week, dating and going out with friends did not awaken any special interest in students. This is probably not a relevant aspect in their lives and context, nonetheless, they worked and kept committed to the practice in the classroom and at home.

5.2.7 Intervention 7

Table 14. Lesson 7

Vocabulary Lesson 7 -Duolingo (Food)				
fish	orange	wine	chicken	plate
cheese	dinner	breakfast	lunch	sugar
pasta	fruit	juice	beer	beef
oil	lemon	strawberry	tomato	soup
dinner	meal	pork	vegetarian	apple
plates	cook	tea	sandwich	milk
pay	apples	rice	egg	bananas

Source: Author

Table 15. Assessment 7

Assessment session 7 - Kahoot					
Student	Score	Student	Score	Student	Score
F1	78	F8	34	M2	74
F2	66	F9	77	M3	46
F3	83	F10	45	M4	67
F4	58	F11	76	M5	82
F5	69	F12	84	M6	80
F6	57	F13	98	M7	92
F7	66	M1	80		
					Group average: 70.6

Source: Author

The vocabulary presented here was expanded with different products that students have in their farms. They wanted to learn words such as *strawberries*, *beef* and *potatoes*, which were not included in the Duolingo list. They gave examples of what they usually have for every meal and practiced the numbers and times studied in previous units. They enjoyed the assessment session as much as the lesson, and even though five of them obtained results below 60, they did not feel discouraged because they felt they had

learned a lot. Only *F13* and *M7* obtained scores above 90, but it was because of their extra dedication and commitment displayed since the beginning of the interventions.

5.2.8 Intervention 8

Table 16. Lesson 8

Vocabulary Lesson 8-Duolingo (The human body)				
if	or	legs	fingers	toes
knee	heart	but	when	arms
body	elbow	hospital	while	eyes
whenever	head	hair	nose	ear
that	face	teeth	mouth	lips
back	stomach	shoulder	tongue	skin

Source: Author

Table 17. Assessment 8

Assessment session 8 - Kahoot					
Student	Score	Student	Score	Student	Score
F1	48	F8	46	M2	79
F2	87	F9	65	M3	46
F3	79	F10	76	M4	91
F4	54	F11	89	M5	69
F5	85	F12	72	M6	87
F6	32	F13	97	M7	96
F7	77	M1	78		

Group average: 72.65

Source: Author

This last intervention about the human body showed students' mastery of the process, good work along the lesson and great performance in the assessment session. Even though the group score was below average compared to all interventions, students learned many new words and had a better attitude toward the language, which gave them

tools to study and improve on their own after the interventions. Five students scored below 60 and three of them above 90. My constant observation and reflection of the process allowed me to notice positive changes in my students, as they enjoyed the classes more and were not worried about being assessed. They saw assessment as a natural part of the learning process and felt more motivated to improve because of the additional practice they could have with the use of their cell phones or computers at school.

5.3 FINAL ACHIEVEMENT TEST

The final achievement test was a way to remember our starting point. Students faced it with confidence and no fears. The different lessons studied and assessed boosted their vocabulary progressively as can be observed in table 18 that provides a comparative of all assessment sessions (AAS). Students started with an average of 36.7 in the IDT, then bounced back and forth in the study of different topics.

Some lessons such as *personal information*, *school items* and *animals* were learned at a faster pace, while others such as *travelling*, *the human body* and *clothing* gave them more difficulty. Additionally, topics such as *food*, *animals* and *school* provided more real interaction as they could be easily experienced in their own lives.

Table 18. AAS

Assessment sessions	
IDT	36,7
Assessment 1	75.95
Assessment 2	66.25
Assessment 3	68.25
Assessment 4	80.15
Assessment 5	79.7
Assessment 6	77.55
Assessment 7	70.6
Assessment 8	72.65

Assessment sessions	
Assessment average	73.89
FAT	73.45

Source: Author

Table 19 presents a detailed description of the scores obtained by students during the FAT. Compared to the IDT, all students gained more vocabulary as expected. The experience was successful in terms of vocabulary learning, language attitude, confidence, and use of technological resources available.

Table 19. FAT

Student	Score	Student	Score	Student	Score
F1	62	F8	59	M2	65
F2	80	F9	72	M3	32
F3	89	F10	82	M4	84
F4	67	F11	76	M5	63
F5	78	F12	80	M6	86
F6	65	F13	92	M7	94
F7	72	M1	71		
Group average: 73.45					

Source: Author

The results depicted in table 19 illustrate how only two students had scores below 60; *F8* had a score of 59, 25 points above her IDT, and *M3* a score of 32, 16 points above his IDT. It is worth highlighting that eight students were above 80 points, including 2 who were above 90 points. *F13* scored 92, 37 above her IDT, and *M7* who usually had a leading position in all the interventions scored 94, 64 points above his IDT. *M7* was a great example for his partners because he excelled from an IDT of 34 points to an FAT of 94. The outcomes presented in the FAT allowed me to infer that the means adopted to help students improve their vocabulary was successful for most of them who took this as a learning opportunity.

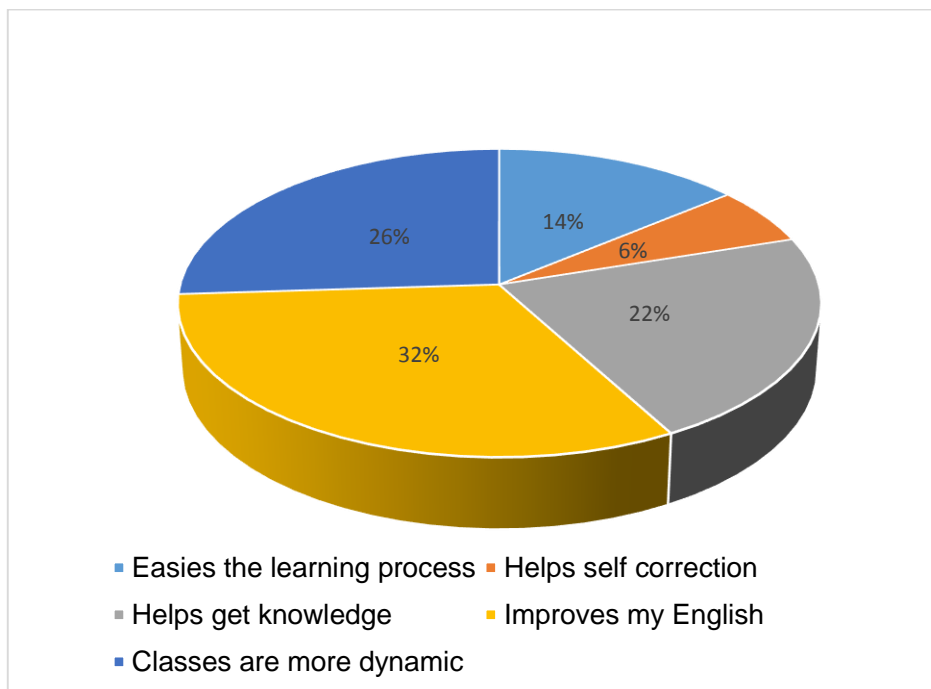
(Based on your previous comments, I explained the lessons and the test in a more detailed way in preceeding chapters)

5.4 FINAL SURVEY

At the end of all the interventions, after noticing that students' attitude toward the language was better, and knowing how much they had expanded their vocabulary, a survey was administered in order to have a better understanding of their perceptions toward LLAs for English learning. They were asked three open-ended questions (see appendix IV), in which they could freely express their experiences lived during the project. Students' answers were categorized by the most common terms expressed; thus, five categories were derived from question one, five from question two, and four from question three.

- Question 1: Do you think the use of technology contributes to your learning? How?

Figure 8. Technology for learning

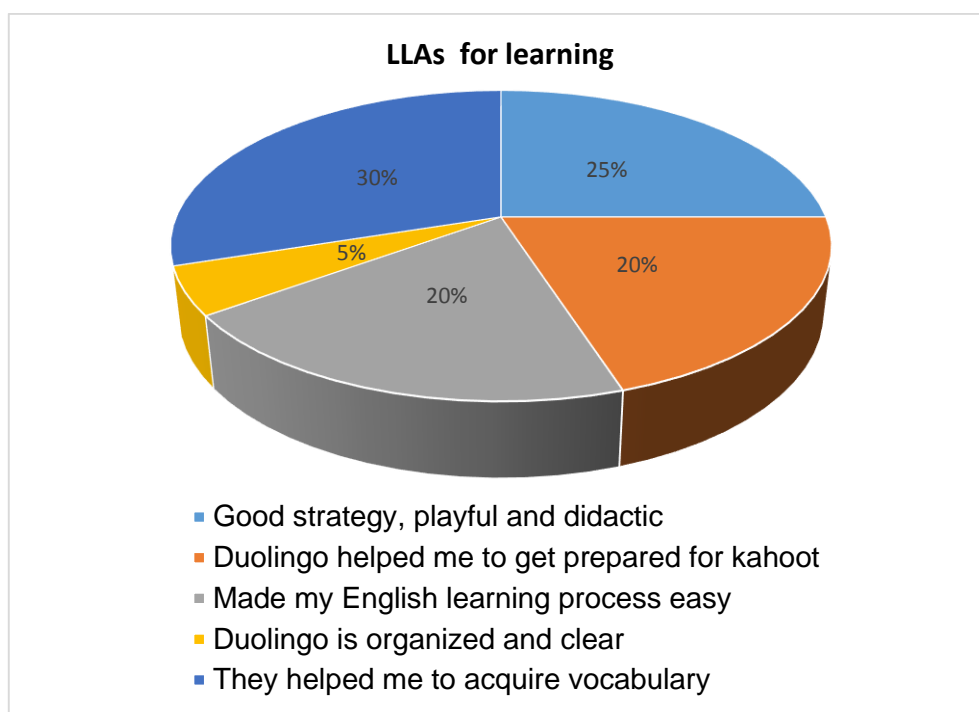


Source: Author

The five categories portrayed in figure 8 reveal that most students (32%) consider that technology brings good opportunities to improve their English, while another high percentage (26%) acknowledges that classes were much more dynamic when it was included. The other perceptions were all positive as well, adding to the many benefits that LLAs bring to language learning.

- Question 2: Describe your experience with the use of Duolingo and Kahoot as English learning strategies

Figure 9. LLAs for learning

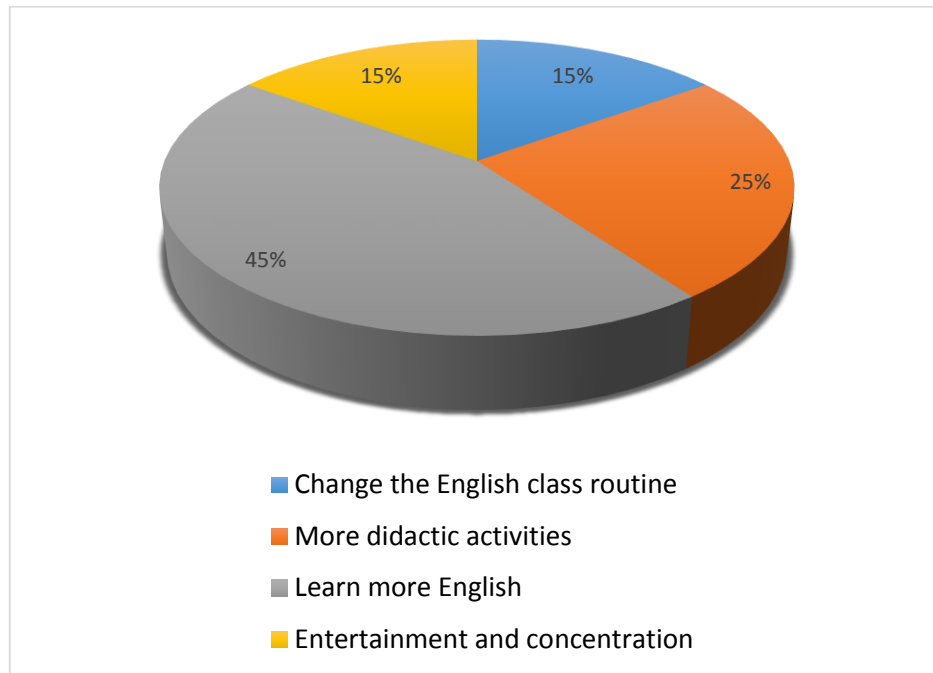


Source: Author

Students' experience can be described as positive because of their comments, given no drawbacks were expressed or observed during the intervention. Many of them (30%), as seen in figure 9, agree that LLAs are good for vocabulary learning because they in fact increased their knowledge. Additionally, students described a list of advantages derived from their use, such as: didactic, organized, clear and a facilitator of the learning process.

- Question 3: How has the use of technology inside and outside the classroom changed your English language learning experience?

Figure 10. Technology for a language experience



Source: Author

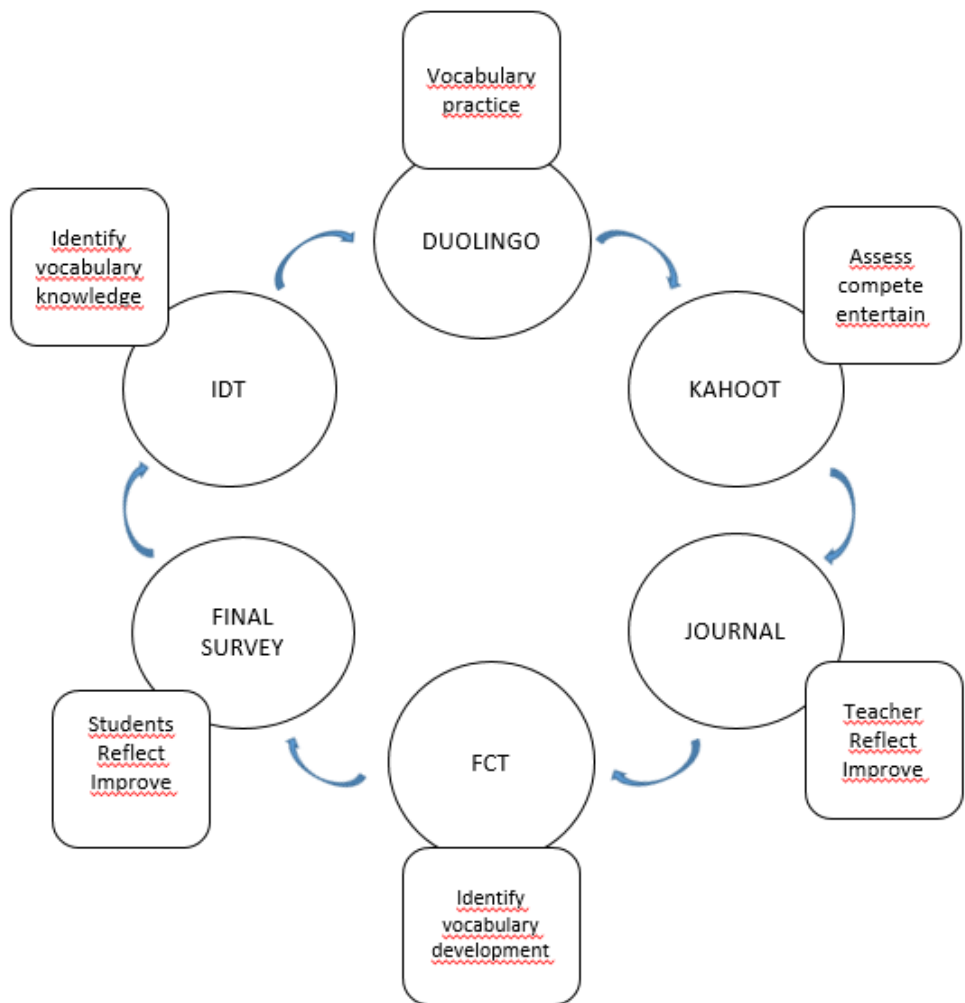
Regarding the overall experience students had with the use of technology, 45% expressed that it helped them learn more English, while the other appreciated the change it provided to their English class routine, the use of more didactic activities, and the possibility to have fun while being concentrated in learning activities. In sum, this project gave students the possibility to see the positive side of technology to improve their English now and to gain strategies for future learning on their own.

5.5 TRIANGULATION

The six data collection instruments used were key elements to reach the objectives set in this research study. Figure 11 depicts their order and reciprocal relationship. Although the ICT (the ICT has been considered an instrument throughout the whole document.

Shouldn't I consider it one?) was the first instrument and the Final Survey the last to be administered, they were all part of one entity of analysis that brought them altogether as they contributed in one way or another to the success of this project.

Figure 11. Triangulation



Source: Author

It was essential to find commonalities among the results drawn from the different instruments. Figure 11 shows how no instrument was more important than the other, but how they were all part of a whole to provide categories of analysis. The commonalities found were because of the reciprocal relationship existent among the instruments, which could be paired as follows: IDT and FAT; LLAs Duolingo and Kahoot; Research Journal

and Students Survey. Below is an explanation of how the data was triangulated following the categories found.

The IDT and FAT allowed the identification of vocabulary knowledge at the beginning of the project in order to create strategies to gain more vocabulary, and also to uncover the new knowledge acquired at the end of all the interventions. Some of the common problems identified were *vocabulary related to food, travelling and clothing*, while most students did better in *vocabulary related to personal information, numbers and family members*. The analysis suggests that students' basic knowledge allowed them to identify some vocabulary which had been previously worked in other classes, nevertheless, the other word categories needed more time to be appropriated.

Moreover, Duolingo and Kahoot were paired up as they provided vocabulary practice and gave opportunities for students to evaluate their knowledge and identify the need to continue improving. Students' desire to participate in the project was beneficial, however, they had a lot to learn in the process. Once they understood how it all worked, they became good at practicing the lessons and competing in the tests. Some of the common aspects derived from these two instruments were students' interest in both the lessons and the assessment sessions.

At the same time, the Research Journal and Students Survey were moments of reflection that spinned around the vocabulary practice and assessment as a way to understand and improve the process and systematize the benefits derived from it. Some of the most common occurrences in these two instruments were:

- Students were fearful and lacked of confidence at the beginning of the project.
- English was not their favorite subject and they considered it a difficult language to be learned.

- Students use of technology was limited to opening their Facebook account, YouTube content and other non-academic activities.
- They did not know about the existence of LLAs.
- Their behavior changed as they understood LLAs' benefits and level of enjoyment.
- They gained confidence and assurance that they were improving every day.
- The process of feedback provided by the LLAs and by the teacher gave students a sense of relief and guaranteed a continuous learning process.
- Students wanted to collaborate with others to help them reach the goals set.
- Students visited the school in the afternoon to access Wi-Fi and continue practicing.
- Parents became involved in the projects; although most parents are not usually involved in their children's academic matters, this project made them want to help them as they saw kids practicing at home and coming to school in the afternoon.
- There was meaningful learning derived as students found the process to be attractive and related to their own lives.
- Students better attitude is expected to help them develop other skills, such as Reading comprehension, which will also help them better their results in *Pruebas Saber 11*.

Figure 12 to 15 portray moments in which students were engaged, while being assessed through Kahoot.

Figure 12. Students working with Kahoot 1



Source: Author

Figure 12 and 13 show how students interact with their cell phones and computers while answering the questions posted. Students worked individually and became more engaged in the process as time went by.

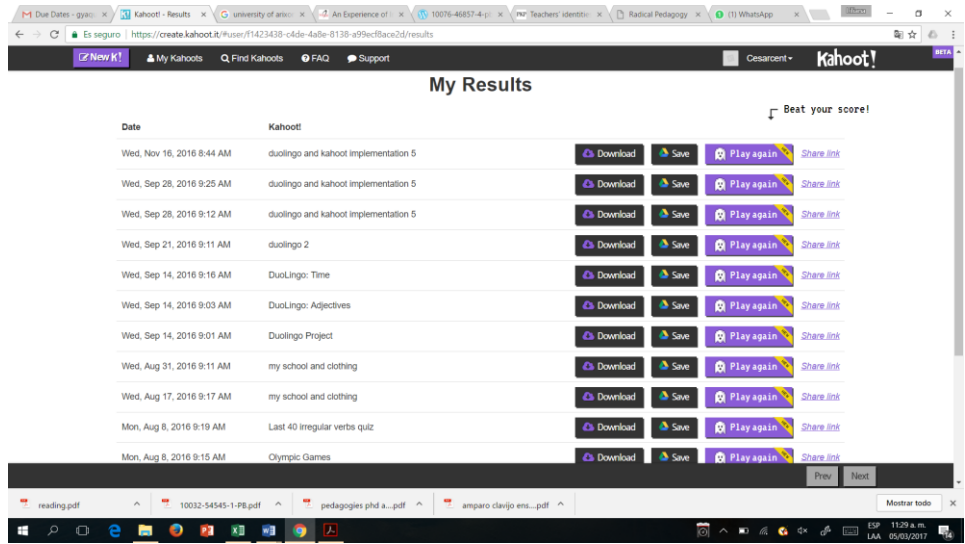
Figure 13. Students working with Kahoot 2



Source: Author

Figure 14 below is evidence of students' results listed on the screen from higher to lower. During each assessment session results were presented this way, which facilitated the analysis of each student's performance.

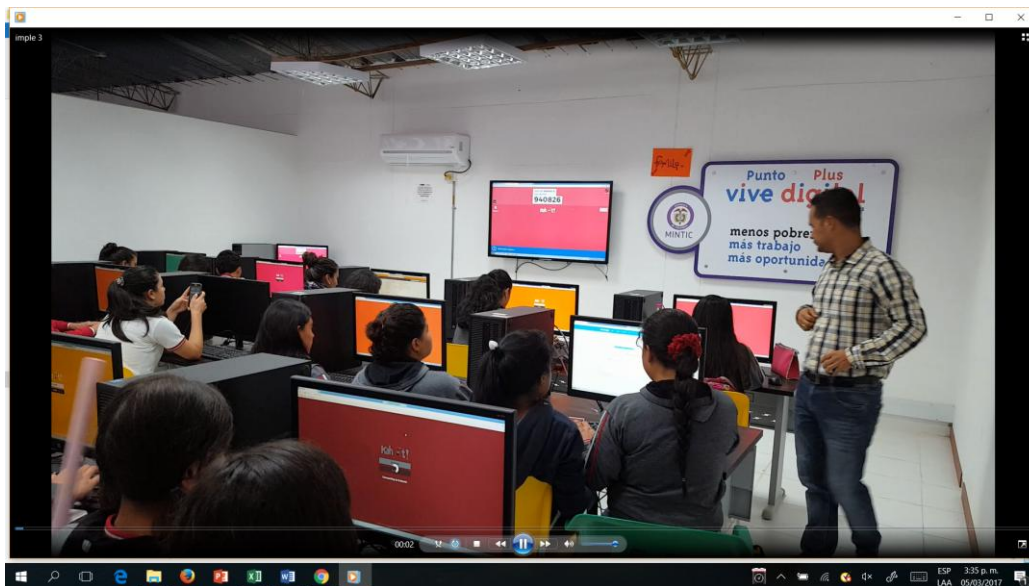
Figure 14. My results in Kahoot



Source: Author

Figure 15 portrays a session in which I give students feedback at the end of an assessment session. They were all attentive and receptive and provided comments that were written in my Research Journal for further analysis.

Figure 15. Students working with Kahoot 3



Source: Author

6. CONCLUSIONS

Because today's classroom represents increasing diversity among students, a teacher has to accommodate to this range of differences -developmental, motivation to learn, and achievement (Larrivee and Cooper, 2006). These authors' call for reflection is what every practitioner should aim at; reflecting upon our practices makes us be in a continuous process of inquiry that allows us to make informed decisions based on our students' needs and realities.

In this way, this project was born from a needs' analysis done with my student population, in order to uncover their feelings, attitudes and likes toward English; done in such a way because changes are to be implemented with teachers' experience and expertise in mind, but always considering the target population that is to benefit from them. This study was developed in a community whose social problems interfere with the desire for learning, so the biggest challenge was to accommodate my practices to the specificities of the group, in an era where there are no magic recipes to teach, where teachers have general guidelines, but are to be tailors of their own classrooms, and where no student is to be left behind.

It was essential to consider Kumaravadivelu's, (2001) proposal of having a pedagogy of particularity (relevant and sensitive to a particular group), practicality (bridging the gap between theory and practice) and possibility (social practices to empower students). With all of this in mind and the decision of helping my students improve and gain tools that would accompany them once the project was over, I anticipated that the use of technology as a didactic tool would foster vocabulary building. Although I knew the challenges to be faced, such as connectivity problems and students' reluctance to practice the language, I also knew that using appropriate strategies would allow me to achieve great results.

As a matter of fact, vocabulary development was the starting point for students to enjoy

English learning as they improved their language skills and gained strategies to work on their own in the future. Although this was a rural area, students have access to computer and internet at school and have cell phones to practice outside the classroom, then this was an opportunity for them to use all these resources in an academic way. It was satisfying to see students taking advantage of these tools and appreciating the moments of language practice and assessment. Students were positively surprised at their evolution in vocabulary development and acknowledged what these practices were providing for them.

The ICT was an alarm for them to know where they were at. Doing an in depth examination about their level of vocabulary was frightening at the beginning, but it also made students aware of all they had to do to improve. When the time to implement the lessons came, they were eager to know how the LLAs worked and to start using them. Students progressed at a different pace, which was determined based on several variables such as the heterogeneity of the group (student's level was different at the beginning), the level of commitment portrayed, and the level of motivation to work with the LLAs. Some students practiced them over and over again, inside and outside the classroom, while a few just used them during class time.

The analysis of students' assessment with Kahoot provided evidence of the level of progress all students had. Among the most remarkable aspects to note is the group evolution from 36.7 points in the IDT to 73.45 points in the FAT. Also, the individual differences addressed in the data analysis revealed those specific changes perceived in students along the process.

My reflective role as a participant observer and leader of the process made me inquire about the best way to conduct the project; therefore, whatever did not work well in an intervention was improved in the next one. For example, students' reliance on translators or desire to cheat during the assessment sessions was improved as I talked to them at the end of each session and helped them understand their role as fair players of a team. Also, talking to students who were behind or still reluctant to make the best out of LLAs

boosted their interest and involvement in the lessons.

At the end, students' perceptions were highly evidenced through the final survey. Their answers provided positive feedback for the project and no negative reactions were evidenced. All students agreed that their participation in this process was beneficial for their current and future learning of English. They also manifested to be interested in studying other topics using LLAs because this was a much more dynamic and fun way to learn. They agreed that they now see English as a subject that is more integrated to their lives because they can study topics they like in this language.

In addition to helping students develop their vocabulary, a side effect of the project was to see them motivated to read more in English because they could understand better. This is positive as *Pruebas Saber 11* have presented a big challenge to students of this school whose results are below the national average in English and other subjects. Therefore, as further research I plan to design and develop a project that helps students improve their reading skill.

Based on the process carried out by students and on the analysis done of their performance, I consider that the initial research question which inquired to what extent language learning apps used as a didactic tool fostered English vocabulary building in 10th graders at a rural school was answered in a satisfactory way. Given the question was specific to vocabulary building, all the interventions were aimed at working on this sub-skill; therefore, the development of other skills such as listening, reading, writing, and speaking was out of the scope of this specific project; nevertheless, students' low results in *Pruebas Saber 11* was a major concern from the beginning of the project, and learning vocabulary and strategies to improve their language skills was the starting. Now that learners are better prepared and more engaged in their learning process, the development of reading skills is considered for further research.

In fact, the decision to delimit this research to vocabulary development allowed to do a thorough work which will contribute to students' English learning skills, to the teaching of

English and to education in general because it will now be part of the literature to study and will give teachers insights on how to approach and take good advantage of LLAs to encourage students to learn not only vocabulary, but also to change their attitude towards the language.

In sum, with limited resources, challenges ahead, reluctant students, but a potential for improvement, this project was a good opportunity to take advantage of the resources at hand to help students improve their vocabulary. The results were all positive and encouraging to continue bettering my teaching practice.

RECOMMENDATION

Yes it has an introduction, and describes the type of study. Moreover, the election of a mix-approach did not follow one of its main purposes that is the triangulation of data to validate it. It lacks of methodological rigor, since it is not only to present data but to wisely analyze it, to put the data and the researcher to talk about for example the effects of those apps in constructing meaning. To examine, to explore, to uncover as the objectives of this research stated. You said in one of them: to examine (it means: to look at or consider a person or thing carefully and in detail in order to discover something about them) after discovering that the students did not have a good level of vocabulary, you as researcher implemented the apps to help them to learn vocabulary, so what for??? Only to say that they learn words? What do they do with those words? It is not evident in the work and I consider it could be the most important insight in this research.

On the other hand, and about the research question, I hoped to see a wise description (qualitative) about the extend of LLAs in learning vocabulary as well as an analysis of quantitative data. We know without making a research that through the use of technological devices students can learn better and obviously they are didactic tools we teachers can use to motivate and learn. So what is the contributions of those apps you use to the process of teaching and learning English especially on a contexts like yours? I do not find any difference among your case rural students in front of urban. What was the importance of those tools with those specific students? (you said they have computers, the were connected...) so show in your work how differently was this didactical methodology for them and make evident the way the students use the new vocabulary on reading, writing, speaking, listening....otherwise, it would be learning using traditional methods, ie: learning list of vocabulary per se.

In addition and according to Hernandez, Fernandez and Baptista, (2010). "Cabe destacar que el enfoque mixto va más allá de la simple recolección de datos de diferentes modos sobre el mismo fenómeno, implica desde el planteamiento del problema mezclar la lógica

inductiva y la deductiva. Como señalan Teddlie y Tashakkori, (2003) en (Hernández, Fernández and Baptista, 2010, p. 755), “Un estudio mixto lo es en el planteamiento del problema, la recolección y análisis de los datos, y en el reporte del estudio”

Good election and use of authors.

I like a lot the way your use local research! Good!

But I do not see direct quotations!!! But paraphrasing, and sometimes I was confused if the words were from the authors or your own interpretation.

For me it is necessary to work more on this part since it is the heart of the work. See previous comments on the research design. Validate the data: triangulation, or using quantitative data to validate qualitative one, member checking, peer debriefing, prolonged engagement, thick description, external auditory...

It is necessary too to better analyze the common categories of analysis at the light of the instruments used to collect data, Why are they common? how did you take them? Where? How did they relate each other? How did the students evaluate their learning? What did they do with the new vocabulary?

In page 60, you presented some pictures which did not have any explanation, description or interpretation!!! Each picture should be explained.

Apart of the conclusions got, it is necessary too to say, which are the contributions of your research to the education, to the teaching and learning of English, and of course to be clear in stating the answer to the research question. What was the extent of those apps in fostering vocabulary building in that population? Establish a discussion of the findings in the light of the theory. What are your recommendations???.

Sometimes It is necessary to introduce the part you work, as for example in page 56.

Why are those categories, where do they come from? How are them related and interconnected throughout all the work?.

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APPENDICES

Appendix A. IDT/ FAT 1

Name _____ Date _____ Grade _____

1. Read the passage and choose the correct answer.

Anita and her Family



Anita is ten years old. She is from Roncesvalles. She has long and black hair and brown eyes. She has two dogs at home. Their names are Bruno and Choco. The dogs have a house in the garden. She says hello to her pets in the morning and good night when she goes to bed. She lives in a big house with her parents. Her mother is Janet. She is a teacher. She is thirty-six years old. Her father is Pedro. He is forty-two years old. He is a bus driver. He takes people from Ronces to Ibagué every day. He does not work on weekends. Anita has one brother. His name is Pablo. Pablo is 6 years old. The family goes to the park on Sundays. They also watch TV on Saturdays.

- Anita is 10 / 11 / 12 years old
- Anita has 2 cats / two dogs / one cat and one dog
- Anita lives with her mother / family / brother
- Pedro works on weekdays / weekends / Sundays
- On Saturdays the family plays / travels / watches TV

2. Read the passage and answer true or false.






Travelling around Latin America

One of my favorite vacation places is Mexico. I really like the weather there because it never gets cold. The people are very nice too. The food is really good. Acapulco is a very interesting place to visit. It has some great beaches and lots of fascinating places. Most hotels cost much money. I had too much luggage when I was travelling, and I forgot my passport. I was late for my flight. I was at the airport for two more hours waiting for the next flight. I read newspapers all that time. I was happy the rest of my trip.








- | | | |
|----------------------------------|--------------------------|--------------------------|
| | T | F |
| a. The food was delicious | <input type="checkbox"/> | <input type="checkbox"/> |
| b. People are serious | <input type="checkbox"/> | <input type="checkbox"/> |
| c. She was late at the airport | <input type="checkbox"/> | <input type="checkbox"/> |
| d. She had little luggage | <input type="checkbox"/> | <input type="checkbox"/> |
| e. She read books at the airport | <input type="checkbox"/> | <input type="checkbox"/> |

3. Match word and image

	Shirt
	Sweater
	Jeans
	Skirt
	Shoes

4. What time is it? Match the time with the corresponding clock

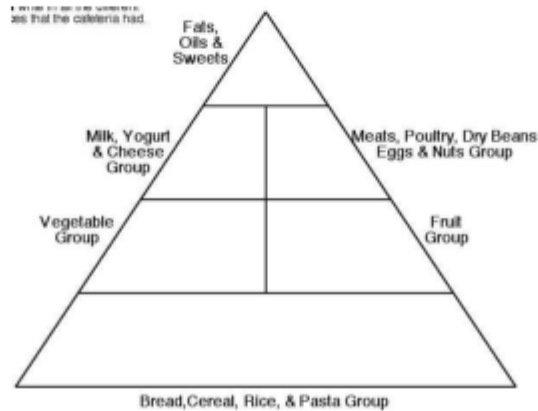
It is ten oh five	
It is three o'clock	
It is a quarter to ten	
It is a quarter past eight	
It is seven thirty	

5. Answer true or false

- We start classes at 6:30 in the morning
- We finish classes at four thirty-five in the afternoon
- Fifty-four = 54
- Ninety = 19
- Seventeen = 18

T	F
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

6. Complete the food pyramid with 2 items that go in each chart –draw and write the names








7. List 3 foods you usually have for:

Breakfast	Lunch	Dinner
_____	_____	_____
_____	_____	_____
_____	_____	_____

8. Write the names of the parts of the body



9. Circle the name of the animal

				
hen	pig	goat	sheep	chicken
cow	crab	octopus	horse	duck
horse	bird	fish	hen	rabbit

10. Match the word with the definition

You use it to enter the classroom	pencil
The teacher writes the homework there	table
I need them to cut the paper	scissors
The teacher has one to put his books	door
You need one to write	board

Reading passage 1 –Retrieved and adapted from <http://www.englishexercises.org/makeagame/viewgame.aspx?id=3013>
 Reading passage 2 –Retrieved and adapted from <http://www.grammarbank.com/reading-comprehension-test.html>

Appendix B. Needs' Analysis



Estimados Estudiantes: Esta es una encuesta que no es evaluativa, ni genera ningún tipo de nota en el periodo. Esta encuesta te da la oportunidad de expresar tus ideas sin ningún tipo de restricción. No hay respuestas incorrectas y correctas.

Objetivo: explorar las experiencias en el aprendizaje en el idioma inglés', gustos y experiencias en lectura en inglés

Recuerda: no hay preguntas correctas o incorrectas, debes dar respuestas verdaderas con el fin de mejorar las clases, responde todas las preguntas, cualquier pregunta es bienvenida por el tutor

A. Background

Nombre completo: _____

Celular / correo electrónico: _____

1. Te gusta leer Si ___ Cuales _____
No ___. Porque _____
2. ¿Con que frecuencia estudia inglés de forma autónoma durante la semana?



3. Relate de manera breve sus experiencias pasadas con el aprendizaje del inglés:
Me _____
Gustó _____
No me gustó: _____

¿Por qué está estudiando inglés?	Like	Dislike
Para viajar a otros países		
Para entender y cantar canciones		
Para entender y ver películas		
Para aprender sobre otras culturas		
para estar a la moda		
Porque me gusta aprender idiomas		
Como una oportunidad de empleo		
Porque mis padres me obligan		




Porque es requisito de grado		
No tengo ninguna razón particular		
¿Otra? Indique cual		

B. Learners' attitudes about Reading

Sobre que temas te gusta leer?	Yes  Like	No  Dislike
Cultura		
Comida		
Tecnología		
Medio ambiente		
Tiempo libre / hobbies		
Trabajos		
Personas famosas		
Música / cantantes		
Canciones favoritas		
Peliculas		
Deportes		
Literatura		
Otras, Cual?		

Como te parece la		Bad  Dislike
-------------------	--	---





Lectura?	OK  Like	
Es una buena forma de aprender y conocer del mundo que nos rodea		
Aburrida no entiendo lo que leo		
Leo porque me toca		
Leo porque me gusta		
Me interesa leer en otros idiomas		
Me toca leer varias veces para entender		
No leo porque no me parece importante		

B. Language needs

<p>Marque con una x el grado de destreza con que se siente más identificado en cada una de las habilidades y sub - habilidades. Escriba comentarios si lo considera necesario</p>	Sobresaliente	Bueno	Bajo	Muy bajo
Lectura				
Escucha				
Escritura				
Habla				
Gramática				
Vocabulario				



A. Learning styles / preferences

¿Cómo consideras que aprendes mejor?	Yes  Like	No  Dislike
Estudiando reglas gramaticales		
Realizando guías de completar		
Escribiendo / presentando ejercicios temáticos (mi rutina, mi familia...)		
Leyendo textos, historias		
Escuchando música		
Viendo videos		
Haciendo ejercicios de habla		
Realizando proyectos		
Realizando juegos que involucren el movimiento		
Leyendo en voz alta		

Appendix C. Informed Consent Form

Formulario de Consentimiento para Participar en un Estudio de Investigación Institución Educativa Técnica La Voz de la Tierra

Título del Estudio: El Uso de Aplicaciones de Aprendizaje de Lenguas como Herramienta Didáctica para el Desarrollo de Vocabulario

Descripción de la investigación y su participación

Su hijo(a) ha sido invitado(a) a participar en un estudio de investigación realizado por el docente de inglés **César Augusto Guaqueta**. El propósito de esta investigación es mejorar el aprendizaje del vocabulario con el uso de aplicaciones y tecnología de aprendizaje. Su participación implicará el uso de aplicaciones de aprendizaje para repasar y evaluar lecciones de vocabulario.

Riesgos e incomodidades

No hay riesgos conocidos asociados con esta investigación. Tal vez la conexión presente fallas en algunos momentos.

Beneficios potenciales

El desarrollo de este proyecto tendrá muchos beneficios como: mejora de la lengua, efectos secundarios como: autonomía, aprendizaje colaborativo, compromiso y motivación hacia el aprendizaje.

Protección de la confidencialidad

Se mantendrá la confidencialidad de los registros que identifiquen al participante. No se revelarán nombres y se asignarán códigos a cada estudiante para proteger su identidad.

Participación voluntaria

La participación de su hijo(a) en este estudio de investigación es voluntaria. Él/ella puede optar por no participar y puede retirar su consentimiento para participar en cualquier momento. Él/ella no será penalizado(a) de ninguna manera si decide no participar o retirarse de este estudio.

Información del contacto

Si tiene preguntas o inquietudes sobre este estudio o si surgen problemas, comuníquese con César Augusto Guaqueta, Docente de inglés e Investigador al 3214890301 o a IE Técnica la Voz de la Tierra. Si tiene alguna pregunta o inquietud acerca de los derechos de su hijo/a como participante en la investigación, comuníquese con la Junta de Revisión Institucional de IE Técnica la voz de la tierra.

Consentimiento

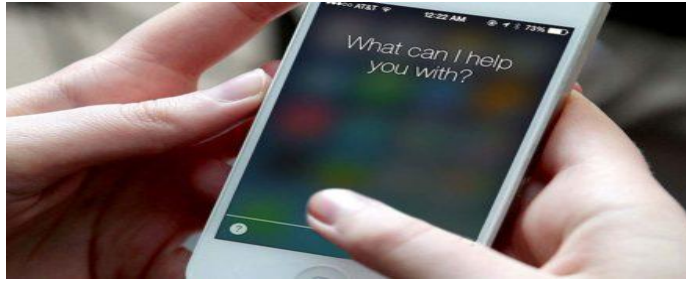
He leído este formulario de consentimiento y he tenido la oportunidad de hacer preguntas. Doy consentimiento para que mi hijo/a participe en este estudio.

Firma del padre/madre _____ Fecha:

Debe dársele una copia de este formulario de consentimiento.

Appendix D. Final Survey

STUDENTS' FINAL SURVEY




1. ¿Crees que el uso de tecnologías aporta a tu aprendizaje? ¿Cómo?

2. Describe tu experiencia con el uso de Duolingo y Kahoot como estrategias de aprendizaje del inglés.

3. ¿Cómo el uso de tecnologías dentro y fuera del salón de clases ha cambiado tu forma de ver el aprendizaje del inglés?

Gracias
MERC
ARIGATO
thank you

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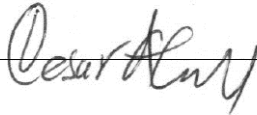
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