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DEVELOPMENT OF A MOBILE APPLICATION AS A DIDACTIC STRATEGY TO IMPROVE ENGLISH VOCABULARY IN ELEMENTARY SCHOOL STUDENTS

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DEDICATION

This thesis project is dedicated first and foremost to my father, Juan Miguel Palacios. I thank him for the immense love and support he has given me throughout my life as a person and even more as a student. Moreover, he has supported me in the challenges and decisions I have always proposed. I also dedicate my mother, Gladis Azucena Pérez, for her unconditional efforts in my formation as a good human being and her sacrifice as a woman. Finally, I dedicate my grandfather Augusto, and my brothers Richard and Anderson, who have been essential pillars in my life for my morale and achievements. I love them very much.

As a special mention, I also dedicate to those who, in their time of life, created inventions or contributed excellent knowledge for developing science and technology that I enjoy today.

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ABSTRACT

The present research work entitled "Development of a mobile application as a didactic strategy to improve English vocabulary in elementary school students" aimed to propose the use of a mobile application with worksheets as a didactic strategy to improve English vocabulary. A mixed study of quantitative and qualitative tools was applied, with surveys for teachers and students. The results justified that teachers and students of the Unidad Educativa San Roque need to integrate a teaching and learning model based on mobile applications. This analysis allowed the development of the application called "My First English App" and an activity guide in worksheets for teaching English vocabulary to 2nd-grade students. Finally, it is expected that teachers will benefit and see how important apps are in professional works with children.

Keywords: English vocabulary, mobile application, worksheets, didactic strategy, App Inventor, elementary school students.

RESUMEN

El presente trabajo de investigación denominada "Development of a mobile application as a didactic strategy to improve English vocabulary in elementary school students" tuvo como objetivo proponer el uso de una aplicación móvil con hojas de trabajo como estrategia didáctica para mejorar el vocabulario en inglés. Se aplicó un estudio mixto de herramientas cuantitativas y cualitativas, con encuestas para docentes y estudiantes. Los resultados justificaron la necesidad de integrar un modelo de enseñanza y aprendizaje basado en aplicaciones móviles para docentes y estudiantes de la Unidad Educativa San Roque. Este análisis permitió desarrollar la aplicación denominada "My First English App" junto con una guía de actividades en hojas de trabajo para la enseñanza de vocabulario de inglés en estudiantes de 2do año de primaria. Finalmente, gracias al desarrollo de este material educativo, se busca que los docentes se beneficien y vean cuán importante son las aplicaciones digitales en labores profesionales con niños.

Palabras clave: Vocabulario en inglés, aplicación móvil, hojas de trabajo, estrategia didáctica, App Inventor, alumnos de primaria.

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INTRODUCTION

Motivation

This project is motivated by my will to help children learn and my belief that mobile technology can be an effective tool for learning. I believe that this project has the potential to make a significant contribution to the field of modern education because it is evident that there is a great need for children to be immersed in the field of technology. By developing a mobile application to learn vocabulary, these children will have a tool that they can use to relate to the world around them. In addition, this app will help them improve their communication skills, which is essential for success in school and life.

Background

Recent research by Yıldız and Zengin (2021) shows the potential of digital applications to support learning through conceptual understanding, process skills, and practices. The same happens in foreign language teaching. Rao (2019) mentions that mobile applications are an excellent tool for teachers and students to improve their learning. They can help them make their work more effective and efficient.

In the same context, it has been evidenced that mobile applications in English learning have marked essential improvements in the educational process. In this way, mobile learning is becoming more prevalent in education as it allows foreign language learners to improve their skills. Its various benefits include: "the enhancement of the learner's cognitive capacity, the learner's motivation to study in both formal and informal settings, the learner's autonomy and confidence, as well as the promotion of personalized learning, helping low-achieving students to reach their study goals" (Kacetl & Klímová, 2019, par. 1). According to a study called "*Vocabulary Learning Through Picture-Viewing and Picture-Drawing on Tablets*", drawing and viewing pictures on tablets can help to improve the memory retention and motivation of foreign languages. It also said that this activity can transform their learning pattern by making the images more relevant to the target word (Ou et al., 2018).

Mobile apps can help students keep track of what is happening in the classroom and develop new vocabulary. They can also provide them with an opportunity to learn about things that they are interested in. This type of learning can make the process more comprehensive and encourage students to pursue lifelong learning (Kuimova et al., 2018). Besides, Rezaei and Pesaranghader (2013) revealed that using mobile apps in English vocabulary learning can help students improve their confidence and increase their class participation. This innovation in education has also been linked to a positive effect on students' overall academic performance. Another study revealed that learning through a smartphone app can be effective, although the app's content should be improved to motivate students (Klimova and Prazak, 2018).

Research problem

The English linguistic situation has become a concern since Ecuador has one of the region's lowest rates of English proficiency (Endara, 2020). According to Education First statistics (2020), Ecuador ranks ninth in Latin America and ninety-third of 100 nations worldwide in the English Proficiency Index (EPI). The results of this research are shown below in Table 1. This is a severely unfavorable scenario for the country as these statistics place Ecuador with a poor reputation in English language performance.

Table 1.

Regional trends of English Proficiency Index in 2020.

	Europe	Asia	Africa	Latin America	Middle East
Highest score	Netherlands 652	Singapore 611	South Africa 607	Argentina 566	Iran 483
Lowest score	Azerbaijan 432	Tajikistan 381	Rwanda 408	Ecuador 411	Iraq 383
Progress band (countries or regions)	8	2	1	2	4
Backward band (Countries or regions)	2	2	1	5	0

Note. The information was collected by Education First (2020).

In today's educational system, mastering English language skills is essential for students beginning as early as preschool. According to Medina et al. (2013), teaching the language at a young age is an important part of a child's cognitive development and helps to foster creative and critical thinking. However, many teachers lack the resources, such as innovative and technological tools, to keep students engaged, which can lead to a decrease in interest levels.

Children have shown a significant lack of interest in learning English. This is mainly due to the absence of something to motivate them in the classroom. This demotivation of the young students is due to different factors: teachers do not use new tools to make the language class more dynamic; the text materials are boring and have an obsolete structure. Therefore, implementing a technological resource such as a mobile application might be necessary to stimulate the interest and motivation of elementary students?

Consequently, this project is expected to have a profound impact on the Unidad Educativa San Roque academic community, with the implementation of mobile applications being a key resource for teaching English. Within a future vision, it is hoped that students will be better equipped to reach satisfactory levels of performance and achievement in this foreign language, and perhaps even exceed their own expectations, minimizing the standards of low academic performance in this foreign language.

Justification for the study

Education is becoming more digitalized today. New technologies have gradually replaced traditional working methods and are now available in the class. Many people have lost the ability to use conventional methods due to Information and Communication Technologies (TIC) growth and incorporation. Learners can concentrate on the most current elements, which can be used for more complex tasks and be significant support material.

The English language is a key tool in education today. The demands on English language learning are increasing. In this sense, the educational revolution proposed by the Government is focused on supporting academic centers based on the interests and expectations of the students that promote developing knowledge, critical thinking, coexistence, and interaction with others.

The new generations of students and teachers are taking full advantage of the technology available to them. By immersing themselves in the use of this technology, they have found that it has had a positive impact on the English teaching process. This has led to students having a more comprehensive understanding of the English language, and therefore they are better equipped to pursue academic activities and achieve higher grades.

Likewise, according to Marro et al. (2016), English oral and aural comprehension greatly benefits teaching from an early age. It favors individual work and promotes integration and communication with foreigners. In this sense, studying English early on through a mobile device is essential. Children have more interest in a digital screen, less responsibility, and a better brain for language learning.

During the linkage process carried out in the 2021 period, the importance of technology became evident for children's English language learning. Children, who were shown images and videos with animated cartoons and entertaining audios, paid more attention in class. Similarly, if young children are taught with mobile applications, they will be able to interact and be very attentive to the activities shown in these digital tools.

Students and teachers at the institution can both benefit from this project. For students, it provides a fun and interactive way to learn English through a digital application. For teachers, they can use mobile applications to create more effective teaching strategies. Both groups of people will be able to improve their language skills and make the learning process more enjoyable.

The individuals who can benefit from this project are both students and teachers of the Unidad Educativa San Roque. For the students, this project provides a unique opportunity to learn the English language in a fun and interactive way using digital applications. It also offers the teachers an opportunity to create effective teaching strategies with the help of mobile applications. Hence, this project intends to introduce an innovative and technology-driven initiative to help students learn the English language.

Impacts of the study

The development of this thesis will have linguistic, social, and technological impacts. Linguistic because, thanks to the vocabulary and interactive exercises of the worksheets with the mobile application, students will develop their ability to use new words in an English context. This will also allow them to maintain a vocabulary base for further English education. Using the mobile application to learn English vocabulary also has positive social effects. Children would likely interact with peers, friends, and even adults in English, in and out of class. This study will also have technological impacts. With the development of this research, it is expected that teachers and parents will see the importance of mobile applications in learning the English language in early-age children. The developed application will be open for anyone to download and interact with.

Beneficiaries

Direct beneficiaries

This thesis proposal can be of great benefit to both teachers and students. The teacher can provide guidance and feedback by providing a structure for the student to follow. This can help the student to create and expand their knowledge of it. The teacher can also use the proposal as an evaluation guide to check if the students are acquiring the correct vocabulary according to the English national curriculum. In addition, these proposals can help teachers to be easily replaced by others in case of any problem. For example, suppose the teacher has personal matters to resolve outside the institution. In that case, he or she can deliver this proposal to another English teacher to continue carrying out the activities in class.

Indirect beneficiaries

This thesis proposal's indirect beneficiaries are the institution, the parents, and society. For the student's institution, this successful thesis proposal means that the student is on track to complete their degree. This is good for the institution's reputation and can help attract other students. A successful thesis proposal can provide the student's parents peace of mind. They know their child is making progress. This can be evidenced thanks to students' grades throughout the educational process. And finally, for society. This proposal can help create new knowledge in teaching English vocabulary to younger students. This knowledge can solve problems and improve the quality of education in Ecuador.

Objectives of the study

General Objective

- Propose the use of a mobile application as a didactic strategy to improve English vocabulary in elementary students.

Specific Objectives

- Analyze salient research about the use of mobile applications in early childhood English education.
- Evaluate the use of mobile applications to teach basic English vocabulary to 2nd-grade students at Unidad Educativa San Roque.
- Elaborate didactic resources to include in a mobile application to improve English vocabulary in elementary students using App Inventor.
- Develop a mobile application as a didactic strategy to improve English vocabulary in elementary school students.

Structure of the research

Four chapters cover this research work. The first focuses on the theoretical framework, which contains information about the variables raised in the project. The second chapter addresses the methodology with the types of research and tools necessary to carry out the analysis. In the third chapter, the results are disclosed with their respective analyses and discussions of the information collected. Finally, the proposal is presented in the fourth chapter, intended to provide a new help tool in the class.

1 CHAPTER I: THEORETICAL FRAMEWORK

1.1 Learning

Different authors have defined learning by emphasizing the educational field. This term is defined as "changes in behavior that result from experience or mechanistically as changes in the organism that result from experience" (De Houwer et al., 2013, p. 2). Thus, this creates a highly reciprocal and beneficial environment for the individuals involved in the learning process. According to Papalia et al. (2001), learning is a behavior that can be objectively and scientifically observed and studied. Hence, it results from long-term behavioral changes based on experience and adaptation. Finally, Whitman (1975) explains that learning is the process of modifying behavior. This can happen through experience and brief training.

The child has played a more central role in teaching and learning throughout history. This is due to how methodologies have evolved and become more modern. Teachers and educators began to learn more about the child's physical, cognitive, and spiritual development. In this way, meaningful learning is increasingly promoted. However, the traditional is not left aside, as it has been evidenced that learning through repetition is essential for early learners (Sun and Révész, 2021). That is to say, with the implementation of conventional methods, children increase their vocabulary.

1.2 English as a Second Language

In recent times, the need to learn a second language has become essential for almost everyone because the world is becoming increasingly globalized, creating the need for a common language among people, also known as lingua franca. Another essential factor for learning a new language is the job market, which, due to the increasingly fierce competition among professionals, requires them to be more and more qualified to communicate effectively with a growing number of people from all over the world.

Today, English is considered one of the most spoken languages worldwide. This has not always been the case, of course. At different times in history, other languages have occupied that position. However, English has become the default language for international communication, and it is estimated that nearly 1.5 billion people worldwide speak it as a second language (Kaur, 2020). Thus, more and more people travel abroad, are exposed to English, and often learn it as a second language.

Many foreigners who immerse in English-speaking countries to learn the language often find themselves in a difficult situation. They are not familiar with the culture or language and can feel relatively isolated. However, there are several ways that they can learn English in a different country. One of the most effective ways to learn English is to enroll in an ESL (English as a Second Language) course. These courses are designed specifically for

foreigners, and they can be very helpful in learning the language. In addition, other foreigners in the class can often relate to English learners' experiences in understanding the language.

Another of the most effective ways to improve English is by finding a language exchange partner. This individual is interested in learning the language and would help an English practice. This can be done online or through local organizations. Students can also immerse themselves in the language by listening to English radio, reading English newspapers, and watching TV. Doing this will gradually help them become more comfortable with the language.

1.3   English as a Foreign Language

A learner who studies English as a Foreign Language means that he or she may have grown up in a country where English is not the primary language or may have acquired the language as a second or third language. It can be a challenging experience, but it can also be rewarding because learning this language benefits students and teachers. In addition to being used for science, technology, and business, English is also the language of popular culture. This makes it an excellent choice for people looking to broaden their horizons. It is vital to consider learning from a very early age with a solid foundation in English vocabulary because of its necessity and more advanced requirement at higher levels. Ecuador has a very similar approach to teaching English as a foreign language. The most important aspects are described below.

1.3.1   Perspective of traditional and modern EFL education.

There are many different perspectives on traditional and modern EFL education. Some people may view a traditional EFL education as outdated, while others may see it as the more effective way to learn the language. There are pros and cons to both methods of instruction, and ultimately it is up to the individual learner to decide which method is best for them.

Some may see a traditional EFL education as outdated because it generally focuses on grammar and memorization of vocabulary. This can be seen as a tedious and time-consuming way to learn a language. However, others may argue that this method is more effective because it builds a strong foundation in the language. Modern EFL education generally focuses on communicative skills and real-world application. This can be seen as more fun and interactive way to learn a language. However, some may argue that this method is less effective because it does not provide a solid foundation in the language.

The current trend is to utilize information and communication technologies as teaching tools in order to innovatively improve and develop students' education. These technologies provide various opportunities to explore different aspects of language learning,

such as engaging activities and multimedia resources. Furthermore, they can be used to deepen the learning experience by allowing students to gain insights and skills that would not be possible through traditional methods alone.

Significant differences exist between the behavior and temperament in the minds of individuals who have witnessed traditional education and modern technological and digital teaching methods. While there is no consensus on the amount of knowledge acquired or developed through conventional or contemporary digital teaching, there is a significant gap between these generations when looking at past and present students. It is even more evident when looking at the daily routines of individuals within the classroom.

Language pedagogy focuses on developing complex language skills indispensable for a student's education. However, traditional teaching can result in a hostile environment in some cases. English conventional teaching methods can create frustrating and exhausting student learning experiences (Qin, 2016). Therefore, a cooperative teaching approach is needed, particularly in early childhood English education. In this context, mobile applications stand out. Tan-Hsu Tan and Tsung-Yu Liu (2004) say they are essential in language teaching because of their interactive and communicative nature. This way, mobile applications' linguistic, cultural, and educational potential in English language teaching is exploited.

1.3.2   English as a Foreign Language in Ecuador

English has been an essential part of Ecuadorian education for many years and continues to be so today. Education in Ecuador is mandatory and free for the first nine years. The Ecuadorian Constitution of 2008 mandates that there must be a school in every community. The country has more than one thousand colleges and universities, both public and private, but only about ten percent of college-aged students attend university. The English language is one of the most spoken languages in the world. It is also one of the most FL-studied languages in Ecuador.

English is the most widely used official foreign language in Ecuador. It is taught in both public and private schools. In 1992, through an agreement between the MinEduc and the British Council, a reform was carried out for public and private schools (British Council, 2015). Subsequently, the Ministry of Education promoted the project "Strengthening the Teaching of English" (Ministerio de Educación del Ecuador - MinEduc, 2016). This project was designed to improve the linguistic competence of English teachers, including developing an English curriculum that conforms to the Common European Framework of Reference for the Teaching Learning and Assessment of Foreign Languages.

Thus, the Ecuadorian EFL curriculum establishes English language level requirements according to the Common European Framework of Reference for Languages. These levels must be met by the end of primary, secondary, and university education. Figure

1 describes English Language Proficiency Levels in Ecuador from a basic to an intermediate category (A1 – B1).

Figure 1.

English Language Proficiency Levels in Ecuador: Branching Approach
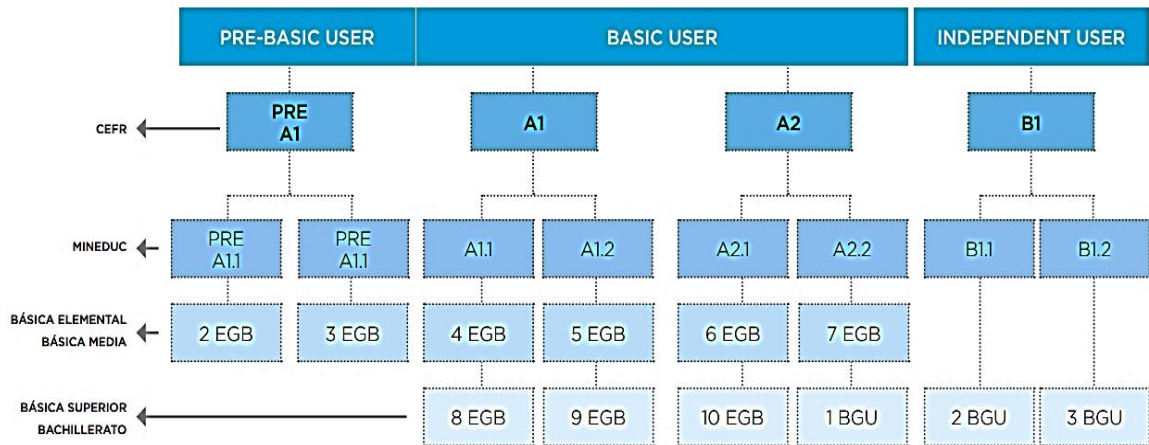
Source: Ministerio de Educación del Ecuador (2019).

The figure above points out that the levels of English that students must reach by the end of each period are distributed according to their abilities and linguistic skills. It is stated that the Ecuadorian EFL curriculum establishes English language level requirements according to the Common European Framework of Reference in order to meet these goals. This framework is divided into basic – intermediate categories that are described in Figure 1, which illustrate the levels of English proficiency in Ecuador.

1.4 Learning Theories in English as a Foreign Language

A theory can be interpreted as a particular way of looking at things, explaining observations, or solving problems. In this context, Thomas (2017) mentions that a theory describes a phenomenon and its interactions that can be used to predict it. Learning theories integrate explanations and descriptions of how humans and animals can acquire knowledge in an educational framework. To Heredia and Sánchez (2020), a learning theory is a collection of interrelated constructs that describe and explain the learning process of individuals. Therefore, it can be inferred that it involves different functions related to the scientific method, such as observation, formulation of hypotheses, experimentation, testing, and comparison of results.

1.4.1   Behaviorism

According to this theory, learning is a continuous behavior change. It is achieved through a repetitive and concrete process. In this theory, Ng'andu et al. (2013) argue that learning comes from observable behavior and is based on studies of learning through conditioning. This involves learning to respond differently to stimuli and achieving the desired response. In this sense, learning is forced through continuous practice to reinforce skills.

According to Jayne and See (2019), behavioral research was mainly carried out on animals. However, the results were also extended and applied to humans to discover learning processes. This theory also argued that children imitated the language of those they lived with and received a positive or negative response within language acquisition. This could be in the form of a greeting, ongoing communication, or a signal. These children could not imitate the sounds and patterns of the environment until they had established their language habits.

Thus, this perspective shows that the quality and quantity of the language children hear and the consistency of the feedback they receive are vital factors in defining verbal behavior (Hostinská, 2010). If it is considered that communication situations require responses, then the idea that any skill requires habit formation can be applied to language learning. Behaviorist theory within early childhood foreign language instruction integrates much of its principles. Learning would be possible if there were constant imitation and repetition of short words.

1.4.2   Cognitivism

Jean Piaget divides cognitive development into four major stages: sensorimotor, preoperational, concrete operational, and formal operational (Feldman, 2004). For Piaget, children create learning through their interaction subject and the object (Schrader, 2015). This is the fundamental idea of the constructivism theory. Every new idea is absorbed and incorporated into what the child knows about the world, becoming more extensive. As time passes, connections are established, and things become apparent in the child's brain.

The tools used in the construction process change with the person's age and depending on the environment and the stimuli. According to Mcleod (2021), Jean Piaget formulated the theory of how children and adolescents think, learn, and mature their child's logic into adult logic. Based on the observation approach to early schooling, he recognized that knowledge resides not in children or the objects they study but in their interaction. He realized a need to develop an experimental education system where the child is taught to consider and define the actual, not just copy.

According to Piaget's theories, for effective learning and developing pupils' awareness, the teacher should be mindful of the stages of cognitive development. In this way, education aims to encourage children to learn on their own. Thus, those stages in cognitive growth outline the work of the teacher, who can determine the right time to recommend a child to an educational support team.

1.4.2.1 Sensorimotor or exercise stage.

The sensorimotor stage is the first of four stages in cognitive development. Lefa (2014) argues that this stage begins in the growth in which the infant is exposed to the outside world and begins to understand itself. This understanding develops gradually according to the stimuli it receives. It begins to get an idea of its body by analyzing its limbs and slowly becomes aware of its movements. Thus, the acquisition of the whole practical world surrounds the child through perception and movement. At this stage, the baby will learn to organize the stimuli of the environment through the formation of sensorimotor systems. This will enable him to cope with most situations, even if only in a basic way. When babies become aware of their ability to move, they will begin to look for objects and try to reach them. They may fail but have an intention.

Exploration is a very significant aptitude at this age. Activities must be adapted to the child's ability to manipulate resources to improve concentration. This stage of English language instruction can include various activities and materials. These could include songs, stories, flashcards, skits, and puppets. This allows children to engage in the language and catch their attention.

1.4.2.2 Preoperational Stage of Cognitive Development.

Preoperational periods occur between the ages of 2 and 7 years. The child has carried over meanings from earlier periods and may confuse initial concepts while constantly constructing logical ideas. Osoje (2008) says that this phase of the child remains egocentric. He believes the world is just for him and focuses on his needs. Thus, children think that nature is alive and works together with them. They cannot have intellectual exchanges because they have no referents for dialogue. Animism is another characteristic of the child's egocentric thinking. They cannot have spoken conversations because they have no referents for discussion. In addition, the younger child does not know on what plane specific actions will occur. Therefore, some confusion about the facts will occur.

Babies learn a language twice as fast as they can speak it. Therefore, babies must listen to the language, even if it is not their native tongue. They are endowed with the stimuli around them, and they receive them in their entirety. A baby's brain can be twice as active at three years old than adults. They can understand and practice what they have to say up to seven years old. This is the most productive phase because the child is still open-minded and

enjoys learning English through sensory, curiosity, and play. Play is the best way for children to learn.

1.4.2.3 Concrete operational stage.

From seven to twelve years of age, concrete operations are a child's life. Heo et al. (2011) emphasize that the evolution of these aspects from egocentric thinking to structuring and reasoning can be examined. The child begins to consider all factors that can affect either good or evil. This creates a coherent structure of thought and concrete operations. In addition, the child acquires a greater spatial understanding and can locate themselves better in different places to link ideas of the distance between locations; therefore, it becomes easier to remember routes. The child can perform concrete operations and some types of seriations and classification. He is also able to make connections between objects around him. This stage is called transitive inference. The children begin to believe that others have different feelings than they do. This is due to a decrease in egocentrism.

When it comes to learning English, curiosity is key. A child who has fun learning English through interactive media will have a more meaningful learning experience than one limited to memorizing grammar, vocabulary, or syntax. Therefore, the best way to teach English to children is to use games to learn English. This is especially true for 10-12 year old, who are more prone to being distracted.

1.4.2.4 Formal operational stage.

Formal operations are the last stage in the child's development. It begins at age 12. Hypothetico-deductive reasoning generates outstanding achievements, such as "clarification, inference, evaluation, and application" (Osoje, 2008, p. 28). This is when the adolescent develops abstract thinking and has the most predefined cognitive development.

Adolescents at this stage can consider combinations of factors and not just hypotheses. As a result, they begin to be aware of the reason and can understand doctrines and theories. They also conceptualize terms and try to understand their meaning, leading to internal conflicts and searching for identity. This allows them to see the explanation of some activities that support or fulfill the great ideas of adolescence. This also helps them understand the many internal conflicts in their lives.

A teenager's English class should be enjoyable, keeping in mind some crucial aspects. It is essential to encourage and develop new ideas. The content of the class should keep students alert. To maintain high expectations, the teacher should expect learners to think critically and present coherent arguments. Moreover, although teaching should be focused on a non-traditional classroom, grammar should also be taught constructively. The student's progress will determine whether it is necessary to integrate higher-level grammar instruction.

1.4.3 Constructivism

Ertmer and Newby (2013) remark that constructivism is a psychological perspective that posits that humans form and construct much of the knowledge and understanding they acquire. Human development is one of the key influences that led to the emergence of constructivism theory. Schunk (2012) mentions that constructivism considers knowledge as a construction of the subject created daily through the interaction between cognitive and social factors. So, this process can occur in any environment in which the subject interacts. This paradigm views the human being as a self-managing entity capable of processing information from the environment. The subject interprets what he/she knows and perceives new information, then converts it into knowledge that allows him to learn. In this sense, the individual can learn new mental constructions from new experiences.

Constructivism and second language learning refer to building second language knowledge from what children know in their first language. The first language supports the individual in building second language knowledge. When individuals are introduced to a new language, they go through the adaptation process described by Piaget. He first recognizes the differences between the language he knows and then assimilates the information. Next, he finds a way to organize the data internally or creates new schemas.

As stated in this thesis, the children will acquire knowledge about the new language by absorbing what happens in the environment surrounding them. These can be schools, homes, communities, etc. This learning occurs in the context of the child's new experience and builds on what they know in the other language. Each learner's ability to adapt to a new language can vary significantly due to internal processes of assimilation and accommodation.

1.5 Pedagogical teaching strategies

Teaching strategies are techniques or methods that can improve teaching and learning. According to Nickols (2016), strategy is historically associated with military art, which involves planning actions to be developed in wars and is also widely used today in business. However, this term has a close relationship with the educational process. Teaching requires a great deal of creativity on the part of the teacher. Therefore, teachers must involve students and make them captivated by the knowledge. In this way, it helps the student learn, be curious, self-confident, and creative.

The didactic strategy is a term used to describe the methods employed by teachers in order to effectively communicate the teaching process and establish objectives. Nedzinskaitė-Mačiūnienė and Šimienė (2021) point out that strategies are designed with a specific outcome in mind. Therefore, it is necessary for teachers to know what they want to accomplish with their students during each activity. The teaching process also requires

creative thinking from teachers in order to keep students engaged and motivated while they learn. In this way, students are encouraged to become curious, self-confident, and creative.

1.5.1 Gamification

Gamification is a viable alternative that can engage learners in multiple ways. It stimulates curiosity and can lead to engagement, participation, and reinvention of learning. Al-Smadi (2015) argues that gamification is designed to make learning more enjoyable when used with other classroom strategies. It is based on learning techniques, engagement, and collaborative education. It uses multimodal elements such as challenges, specific rules, stimulating interaction, providing immediate, direct, and precise feedback, and quantifying results. In this way, gamification employs certain features of games to teach English as a foreign language in the classroom.

Gamification encourages people to interact digitally with their mobile devices. It aims to motivate them to learn and develop their skills and cognitive abilities through games. This means that a learner is assigned a mission when joining a game. However, the assignment must be perfectly adapted to the children's current level. Game designers ensure that each learner can complete the task tailored to their abilities. In addition, the phases require challenge, motivation, and collaboration. If linked to education, they can lead to quality learning for pedagogical purposes.

Gamification can help students develop communication skills that enable them to communicate, interact, make decisions, resolve conflicts and work in groups promoting and developing communication skills and fluency. This is because learners are more willing to share and perform different tasks. Thus, gamification generates motivation and interest and results in positive interaction among students.

1.6 Strategies to enhance vocabulary.

Learning strategies focused on foreign language vocabulary should be balanced. Teaching and learning activities should be evenly distributed in four areas. These areas are mentioned in the research of Noroozi and Siyyari (2019): meaning-focused input, meaning-focused output, language-focused learning, and fluency development.

First, **Meaning-focused input** is a learning method from comprehensible input through listening and reading. Noughabi (2017) claims that teaching and learning activities promote vocabulary learning using meaning-focused input. These include listening or narration, extensive reading, and interactive participation in speaking/reading activities.

Second, Noroozi and Siyyari (2019) argue that **meaning-focused output** is obtained by engaging in activities such as storytelling, lecturing, delivering speeches, having a journal, and providing instructions. There are shared conditions between meaning-focused

input and meaning-focused output that should be considered and emphasized. Such activities focus on the development of skills related to writing and speaking, which are essential for mastering a language.

Third, **language-focused learning** includes intentional or spontaneous learning, vocabulary study, and vocabulary learning strategies. Chan (2016) states that the best way to learn vocabulary is by using short word cards with the target word and native translation. Although the mobile application and the worksheets are entirely in English, the teachers must help the children translate these words verbally.

Finally, **fluency development** is the fourth. This should be present in all four language skills, including reading, writing, listening, and speaking. Acosta (2017) explains that this strand also focuses on meaning. Here, the learner's primary goal is to perform the communicative functions: receiving and transmitting meaningful messages that enable communication.

1.7   Enhance vocabulary with app images

A student who learns English vocabulary involves a complicated process. This is a complex operation that requires organization and repetition. However, the process can be repeated when an image is used, but the possibility of perpetuating the knowledge is more significant. Good visual material within a mobile application will keep pace with what is being studied in class and motivate the learner. In this sense, images are essential in processing information, observation, representation, and interpretation the vocabulary presented. They serve as clarification and allow for deeper study anywhere, anytime.

1.8   Kinds of Vocabulary

Vocabulary can be divided into two types: one is active, and the other is passive. Dakhi and Fitria (2019) distinguish the two types of vocabulary. The first category refers to the learners' ability to use the learned vocabulary. Maskor and Baharudin (2016) mention that this productive vocabulary is a category that includes words inferred from speakers and pronounced correctly by them. They then use these words in speaking and writing. This category enables learners to speak and write correctly at the right time. In this sense, vocabulary production can be considered an active process because speakers can generate words that enable them to communicate with others.

The second category describes words that learners will recognize when confronted but cannot say. The receptive vocabulary category allows speakers to understand and identify words in context. However, these words are not created by them. These words are identified by speakers when they see them in context, but they cannot use them in written or spoken form (Dakhi and Fitria, 2019).

1.9   Vocabulary's Impact on Fluency

Vocabulary is an essential part of learning English. It contributes significantly to the learner's receptive skills and productivity. Nation (2001) states that learning vocabulary is equally necessary for fluency in oral and written expression, starting at the earliest level of language proficiency. This means frequently used word learning can be an instructional tool or method that aids fluency and allows the learner to communicate orally with other language speakers.

1.10   ICT tools

Everyone recognizes the Information and Communication Technologies (ICT) 's revolution of the 21st century. Agarwal and Sastry (2022) emphasize that access to information was revolutionized by the generation of Web 1.0 applications, which became most prominently available in the 1990s. This describes that anyone can access it anywhere with a computer and Internet connection. Subsequently, Web 2.0 emerged as the second generation of ICT tools. It has influenced the adoption of new features in a relatively more computerized population. These tools go beyond just communicating. They allow people with similar interests from distant parts of the world to connect in real time and access, criticize, create and share information. Thus, Internet users can build their knowledge and not just receive it. This way, the teaching and learning process takes advantage of this Web 2.0 to engage in educational activities.

Web 3.0 is present due to the growing number of web tools. Children, youth, and adults have adopted this technology to achieve more significant interaction and professional and academic activities. Ramírez and Peña (2011) mention that students could benefit from programs that allow them to choose the learning units that correspond to their previous knowledge. Thus, it is inferred that diversity of interactions has created significant challenges and progress for teachers and students in and out of school, promoting active learning.

1.10.1 Influence of ICT on Early Childhood Education

Information and communication technologies have profoundly impacted society, including education. Using ICTs opens up new learning opportunities and makes the school a place that offers a new world vision. In addition, Murati and Ceka (2017) argue that integrating technology in the classroom helps transform the learning process, facilitating the construction of knowledge. This means that ICTs support the development of a meaningful educational process, thus putting an end to old paradigms and opening endless possibilities. For this reason, teachers must be prepared to use these technologies in the classroom and daily.

Early Childhood Education is a privileged space for children up to five years old. Therefore, teachers need to be attentive, discuss and reflect on children's practices and experiences based on digital technology. As a mediator, the teacher must understand that the challenge of the children using ICT to expand their knowledge and develop new skills is one they must face.

A new approach to teaching and learning in early childhood education is needed. The child is seen as both a historical and social subject and is actively involved in constructing knowledge. According to Martínez (2021), many psychologies and their studies, including Piaget, Vygotsky, Ausubel, and more, have shown that brain development results from integrating the subject and the social environment. Therefore, life experience influences brain development and learning in adult life from an early age. For this reason, Early Childhood Education institutions should aim to integrate different areas of knowledge and civic life. This will allow them to develop essential contents that can be used to construct values and expertise.

The educational process in the child's universe requires the Early Childhood Education teacher to possess skills and competencies beyond mastery of pedagogical and assistance content. It is essential to understand, master, comprehend and identify ICT as a pedagogical resource to support teaching and learning. This is one of the most significant challenges for early childhood education professionals today. Moreover, Oliveira and Marinho (2020) say it is well-known that ICT has the potential to change the educational environment for children positively. Therefore, this requires the use of new teaching and learning methods. Thus, Early Childhood Education adapts to social realities and needs to be of quality.

1.10.2 Mobile devices

The cell phone is a new technology constantly evolving but has sparked interest among young people. This is due to its many possibilities and the speed at which information can be accessed, and this innovation has intensified student life. Boca (2021) explains that the student is not the same person and does not act in the same way as before when faced with the influence of this digital and technological tool. The student leaves aside reading in printed materials and prefers to read on screens. Students would like to watch videos or online tutorials instead of attending a face-to-face class to understand an example.

Students access their smartphones or tablets and can often find information about what the educator is teaching. The teacher is no longer the focus of the learner's attention but on their interests. The traditional expository classroom is no longer relevant in this context. Instead, the learner can access the same information in an exciting and more detailed way, using visual resources that aid understanding. It is easy to see how digital technologies are essential and contribute to the learning of younger students. This is justified by their inclusion in transmitting information, primarily through the Internet. In addition, it is seen

that new applications are launched every day thanks to this technology, becoming a challenge for young people because they have the desire to learn to handle them.

The fundamental function of the school is to prepare students for the modern world, where technology is omnipresent. The school space is used to encourage and educate the use of this resource as an ally in teaching practices and educational projects. Therefore, a teacher must teach how to find the correct information in many data on the network. Using mobile devices in class is essential to establishing a bridge between the classroom and the outside world. The teacher's use of technology in education will determine its effectiveness. Thus, new learning and teaching methods go beyond just using the whiteboard. The student requires something more challenging, stimulates curiosity, and provides learning opportunities. This can be found on mobile devices.

1.10.2.1 *Mobile applications in the learning process*

Applications, also known as mobile apps, are digital tools that are developed to run on portable electronic devices such as smartphones, tablets, laptops, and tablets. These tools are created using a specialized language called code and are designed to meet particular user needs and objectives. With the help of these applications, users can carry out various actions and tasks in order to achieve their desired results.

Apps have increased as developers create applications for a wide range of users, from those with visual and hearing disabilities to entertainment-oriented games. Individuals can install as many of these apps as they want on a single device as long as it has storage and is a smartphone. This has opened up a variety of activities, including language learning.

Different studies have been conducted on using English as a foreign language. One of these studies explores the effects of learning English on the learners' ability to use it as a foreign language. Thornton and Houser's (2005) conducted a study on the use of email interfaces and SMS vocabulary in the teaching of English to Japanese students. The researchers concluded that the first strategy is more effective due to its active communication channels.

Chen et al. (2008) conducted a study to investigate the efficacy of using mobile messaging services (MMS) as a tool for improving visual and verbal learning skills in students. Four different annotations were used to measure the learners' ability to acquire vocabulary knowledge. The results of their study revealed that incorporating images into the learning environment could significantly increase the students' proficiency in both visual and verbal skills.

In 2010, a study by Akdemir and Baolu revealed that mobile phone vocabulary learning programs are more effective than paper flashcards in improving the student's ability to learn English (Başoğlu and Akdemir, 2010). This suggests that cell phone activities are

more effective than conventional flashcard learning tools due to their flexibility and portability, faster-received learning content, and low cost.

Macedo (2008) studied the educational potential of cellular messaging for his master's thesis. This study revealed that SMS messaging helped students increase their interest in learning English. According to the author, technological limitations restrict students' interaction and collaboration. His informants showed autonomy in finding learning strategies. Due to its extraordinary educational potential, the ease of use of cell phones, familiarity, and low cost of SMS were important indicators for a positive conclusion of the study.

1.10.2.2   *Some apps to improve vocabulary.*

Many language learning applications are available online thanks to the advent of cell phone technology (smartphone technology). Cell phones are part of our daily lives, and their inclusion in education was inevitable. This allows us to enhance teaching and learning in the classroom and beyond. On the other hand, apps can foster autonomy and help students achieve their goals in learning English. However, the effectiveness of these apps will depend on how students approach them. They can take independent initiatives to understand the target language and accept responsibility for their learning.

Apps provide an accessible and often cost-effective way of learning a language. They are perfect for those who have a limited budget or time constraints. Many language learning apps are free and have features such as interactive quizzes, audio lessons, flashcards, and gamification. Some of the popular language learning apps out there include Duolingo, Babbel, Busuu, Babbel, Drops, and Lingvist. With these apps, people can learn any language from the comfort of their own home. Some of them are described below.

Duolingo is the most widely used application for learning foreign languages. The application is entirely free and provides services for all proficiency levels. It offers the option to learn English, Spanish, French, Portuguese, and others (Siregar, 2019). This tool makes language learning fun and engaging by using games. There are versions for Android, iOS, and the browser website. The smartphone and web versions can be synchronized so the learner can use both. However, the web version offers more functionality than the mobile app.

Duolingo makes learning fun and interactive. The gamification elements of the application allow the learner to earn points for answering the right questions and timing the completion of activities. This will enable them to move to the next level. The app covers four essential language skills: reading, writing, listening, and speaking. Lessons include comprehension, translation, multiple-choice, and conversation. The learner receives feedback and can correct questions immediately. The game has an incentive program that counts time spent studying the language and gives feedback on how to improve.

Figure 2.

Duolingo-logo.

Note: Taken from Duolingo official webpage.

Busuu, a social network for learning new languages that connect the global community, offers courses in 12 languages (Saona, 2018). There are versions for Android, iOS, and the web. This app allows students to interact with native speakers of the language and correct mistakes. In his research, Winans (2019) displays that users can practice advanced grammar, improve their reading, writing, and listening skills, and practice with speakers of other languages. There is a limited free version of the application. The paid premium version offers many more advantages than the free version. It gives unlimited access to Busuutalk, Conversation Function, Audio of over 3,000 Phrases, Voice Recording Exercises, Videos, and Unlimited Access to Different Languages (Busuu Online, 2014).

Figure 3.

Busuu-logo.

Note: Taken from Busuu official webpage.

BABBEL provides all the resources needed to learn a language. This includes writing, listening, speaking, and comprehension through reading (Babbel, n.d.). The users determine the pace at which they learn. Vocabulary is built up gradually, and grammar is presented intuitively and naturally. There are several courses for beginners and intermediates, including grammar, verb training, and tongue twisters. Although available in a paid version, most of the learning can still be done with the free version. Although the

content is identical to the web application, its desktop version offers additional functionalities such as community contact, exchanging messages with other users, adding friends, chat rooms, murals, and many other options.

Figure 4.

BABBEL-logo.

Note: Taken from BABBEL official webpage.

Google Translate is the most used platform globally. People use it commonly for educational and job purposes. According to Aiken (2019), Brazil has the highest usage of Google Translate. This tool can translate into over 100 languages. Google Translate is not intended to teach foreign languages but can help students with its many resources, reinforcing their reading, writing, and pronunciation skills.

Figure 5.

Google Translate-logo.

Note: Taken from Google

Google Translate is available on both smartphones and computers. It has the following functions. People just need to use the keyboard to select the language they want to translate typing. Viewing, they can see the translated text using the smartphone camera. Typing allows them to draw letters and characters using their fingers. Its Offline mode performs text translations without an internet connection.

1.10.3 App inventor

Since the advent of smartphones, there has been a proliferation of apps that help people with tasks. One category of app that has seen particular growth is language learning apps. There are dozens (if not hundreds) of different apps to choose from if learners want to learn a new language. App Inventor is a programming tool for tablets and mobile devices that allows people to create apps using blocks-based programming for Android devices. The primary goal of App Inventor is to make it easy for anyone to go from discovering an idea or need to creating a working app in just a little time. This makes it effortless for anyone, regardless of experience or skill level, to create an app that can help improve their vocabulary skills in English or any other language.

There are many reasons why to use App Inventor to develop mobile applications. First of all, it is very visual. This means that users can see the results of their code immediately, which can be very motivating. Secondly, App Inventor is very easy to use. Even people with no prior programming experience can quickly create working applications. This makes it ideal for developing different applications in a period that is suitable for individuals. Third, the tool offers much flexibility. Students can create simple or more complex applications, depending on their skill level. This means they can constantly be challenged and never get bored. Fourth, App Inventor is free. This is a great advantage, as anyone can use it, regardless of their budget. Finally, it has a strong community behind it. There are many online resources and forums where students can get help and support.

Although App Inventor is not as famous as other mobile application development platforms, it is still used by many developers and dramatically influences the education sector. For example, it has been determined that there is a positive reception by students who use the application created in App Inventor; in addition, using this tool promotes student motivation and interest in learning and improves cognitive skills in different educational subjects (Amasha and Al-Omary, 2017) (Ortega et al., 2018) (Voštinár, 2017).

For developing "My First English App", images appropriate for children from the digital platform Canva were used. The transition buttons for the app navigation were also created on this page. On the other hand, the audios were generated by computer and later edited in the Audacity program. These didactic resources were uploaded to the OneDrive platform. The link to review them: https://bit.ly/3unICtH

Figure 6.

Structure of the application in blocks.
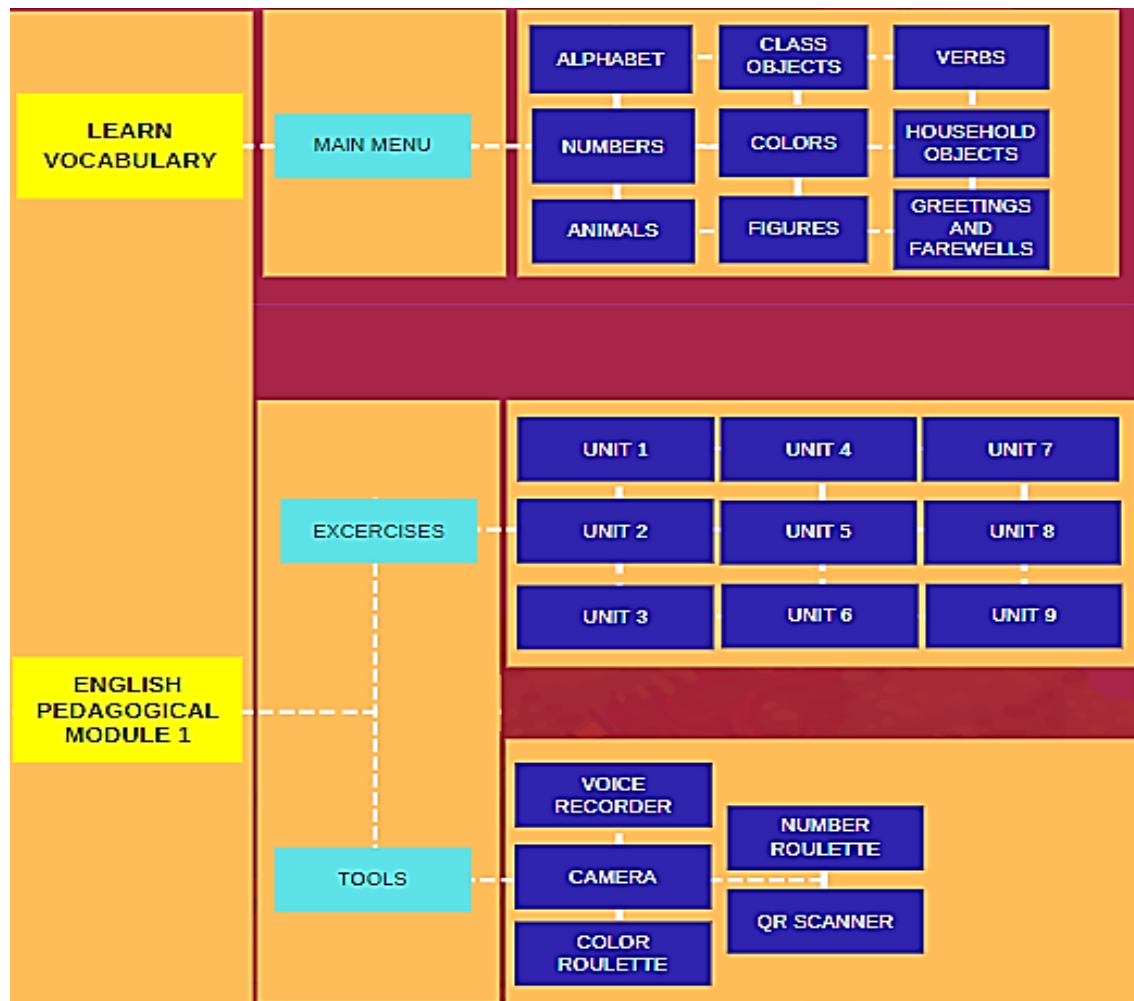
Note: Own elaboration.

The diagram above provides a visual representation of the order and structure of "My First English App", allowing users to interact with the app in a more intuitive manner. Each orange block represents a main screen, while all rectangles within a block correspond to their respective buttons. This makes it easier for users to identify and use the different features of the app when using on a mobile device.

2 CHAPTER II: METHODOLOGY

Methodology "is the path through which researchers need to conduct their research" (Jilcha Sileyew, 2020, p. 1). It refers to a researcher's overall approach to investigating a particular topic. The Methodology in this project includes **research approaches**, **type of the research**, **research method**, **research techniques and instruments**, and the **population and sample.**

2.1 Research approach

Qualitative research involves more subjective methods, such as interviews and observations, to gain an understanding of a particular phenomenon. Quantitative research, on the other hand, is more focused on collecting numerical data that can then be analyzed using mathematical equations to gain a better insight into the topic at hand. Both approaches are often used together to build an accurate and comprehensive perception of the topic. To research the topic of this project, qualitative and quantitative approaches were applied. Some information is described below about each of these and how they relate to this thesis.

2.1.1 Qualitative research

Qualitative research can be considered inductive research. Chetty (2016) mentions that this approach is used mainly in secondary data reading to derive concepts, themes, and models. It aims to capture the essence of a phenomenon and its appearance, trying to understand its origins, relationships and changes, and infer its consequences. Qualitative research uses the environment as the primary data source, and the researcher is the main instrument. This requires direct and sustained contact between the researcher and the environment.

Thus, applied in the project because the findings obtained from the studies were interpreted in characteristics and traits that demonstrate the impact of the application developed in the improvement of vocabulary in the students of elementary level from the Unidad Educativa San Roque.

2.1.2 Quantitative research

Quantitative research is based on quantifying data and is conducted on questions that can be answered using statistical techniques. In the words of Bhandari (2020), it "is the process of collecting and analyzing numerical data. It can be used to find patterns and averages, make predictions, test causal relationships, and generalize results to wider populations" (para. 1). Therefore, quantitative research requires large amounts of data to support an answer, test a hypothesis, or develop a model. The data collection of quantitative research in this thesis involved the design of questionnaires because this usually uses

statistics and quantitative methods. The results were expressed in numbers which were manipulated for further analysis in numerical and percentage terms, also for their presentation and interpretation.

2.2 Type of the Research

The type of research is used to guide the process of analyzing a specific population. In this sense, a descriptive type of research has been used, including the ability to address areas of need for a population and generate new hypotheses for future research. Descriptive research helps to analyze a specific population by exploring its characteristics and patterns. It is described below.

2.2.1 Descriptive research

Descriptive research is a scientific method used to study observations to describe and explain them. It is "aimed at casting light on current issues or problems through a process of data collection that enables them to describe the situation more completely than was possible without employing this method" (Fox & Bayat, 2007, p. 45). It employs data-based methods, such as surveys or interviews, to collect data. The data collected by these methods can then be analyzed using various statistical techniques to describe the characteristics of the studied phenomena. This type of research also can be used to identify patterns and relationships among variables, as well as to develop hypotheses about the causes of observed phenomena.

The project focused on descriptive research due to the process carried out to develop this research. The analyses obtained from the questionnaires were analyzed to get a student and teacher perspective on using the applications. Thus, the content described supports the thesis presented in this research.

2.3 Research method

The research method is a set of behaviors that scientists follow to examine a question. It is based on the scientific process, which includes formulating hypotheses and conducting experiments or observations. This way, the results are consistent and can lead to generalizable knowledge. It can be applied in many ways, such as observational and experimental studies. The most used research methods are deductive and inductive.

2.3.1 Deductive method

One of the most recent ways of generating new knowledge is through the deductive research method, in which one or more existing studies are used for this purpose. The deduction is moving from the general to the specific; for example, starting with a theory and then generating hypotheses, testing these hypotheses, and reviewing the theory (Woiceshyn and Daellenbach, 2018). Deductive research was applied in this research because it is based

on the way of studying information that others have already collected on the proposed topic. Likewise, the sections (e.g., Theoretical Framework and Introduction) developed throughout this research went from general to specific. Their information covered points from a general context to a particular topic.

2.3.2 Inductive method

The inductive method was used to develop a proposal based on the results of the questionnaires. This method started with the hypothesis that there is a relationship between the variables, and the data can explain this relationship. The first step was to collect data, and the second was to analyze these data to see if there was a relationship between the variables. Finally, the next step was to create a proposal to support the development of this thesis.

2.4 Research Techniques and Instruments

The instrument used in research work profoundly affects the quality of information gathered, as it sets the parameters for the stages of the research and the associated results. By employing the right techniques and instruments, which are closely structured, allowed to generate a clear vision of the research project and how it will be implemented. This created a solid foundation for the discussion and proposal, allowing to progress further with the study.

2.4.1 Surveys

Scientists and researchers can use various research techniques to collect data and information. One of these techniques is surveys. These tools are "the collection of information from a sample of individuals through their responses to questions" (Check & Schutt, 2012, p. 160). So, they involve asking a group of people questions to collect data and information. Surveys can gather various topics and are often used to collect data about people's opinions, beliefs, and behaviors.

Questionnaires are part of surveys; they can be an effective research instrument when used correctly. This type of questionnaire has some advantages, such as speedy response; more accessible answers; data quickly coded, entered, and analyzed; and less skilled or no interviewer needed (KIEFER, 2016). These tools helped to collect data from many elementary students quickly and easily. The questionaries developed in this project were applied to the English teachers (including the English area coordinator). Teachers' questionnaires had a length of 9 questions, while students were involved with six questions related to the use and application of mobile innovations in the education of young children. For both destinations, structured questionaries were developed.

2.5   Population

To carry out any research work, it is essential to determine which people to study and who would be able to assist in the purpose of the research. So, a proper investigation can be conducted if the study population is well-known. By establishing the population, the scope and validity of the conclusions drawn from this information were known. The research was focused on studying the whole universe. These are the second-year elementary students from the Unidad Educativa San Roque in Antonio Ante City – Imbabura - Ecuador.

3   CHAPTER III: ANALYSIS AND DISCUSSION

This chapter explains the survey results of the students and teachers from the Unidad Educativa San Roque. Each question consists of an analytical graph with its respective interpretation. The questions and answers of the surveyed subjects were made in Spanish due to the ease of answering. In this section, the questions and answers have been translated into English for analysis and discussion.

3.1   Teachers' surveys analysis

Item 1. Select the number of fellow teachers in the English area in the Institution.

Figure 7.

The number of teachers at the Unidad Educativa San Roque.
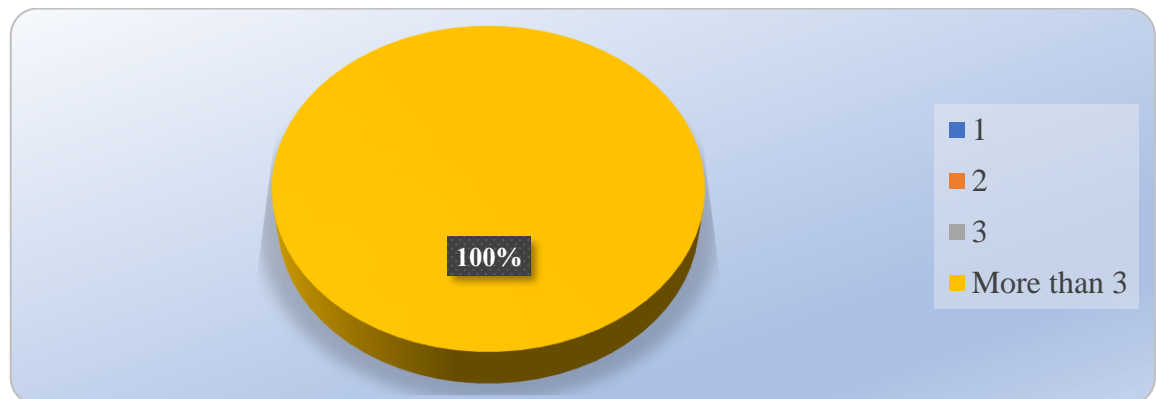
Note: Own elaboration. Source: 2022 July surveys

Interpretation Data revealed that Unidad Educativa San Roque has more than three English teachers working there. This could be considered good for the institution because it has four educational blocks, and the children must complete three hours of English per week. This is considering that there are three parallels of 2nd grade (ABC). This also might indicate that the school is taking the initiative to provide students with the necessary staff to become proficient in the language.

Item 2. According to your experience, select the level of English that the children of Basic Education have; what could be the reasons for that level that the students have?

Figure 8.

2nd-grade students' English level.
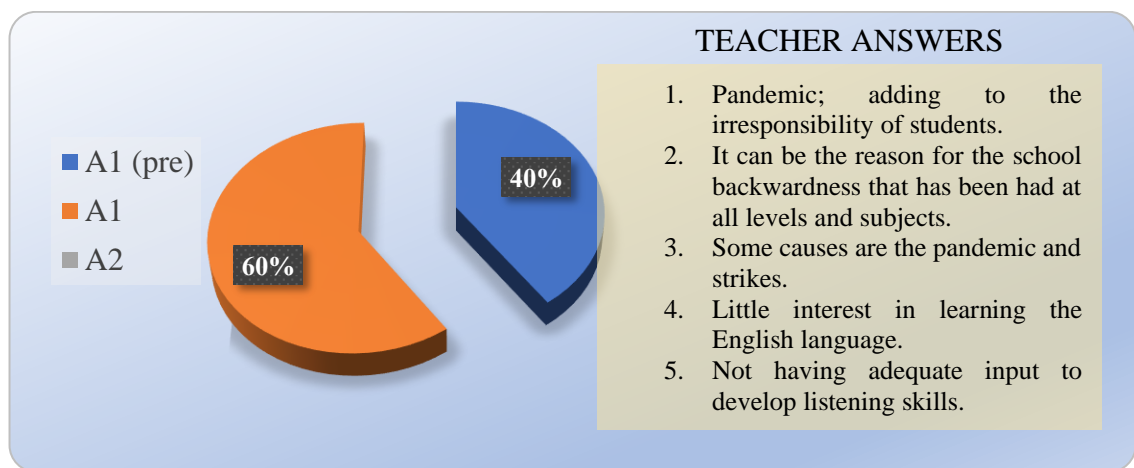
Note: Own elaboration. Source: 2022 July surveys

Interpretation: Most children in 2nd grade have an A1 (pre) level of English as a foreign language. This may be because the children are just getting started with their experience in this foreign language. However, the teachers' responses argue that the children should have a more advanced level (A1 or A2). They mention it because the children are not interested in learning English. This could be because they do not see the need to do so or because of a lack of interactive activities.

Item 3. According to your experience, determine the type of didactic material that has been the most effective for English language learning in elementary school children.

Figure 9.

Most effective teachers' didactic materials in English teaching.
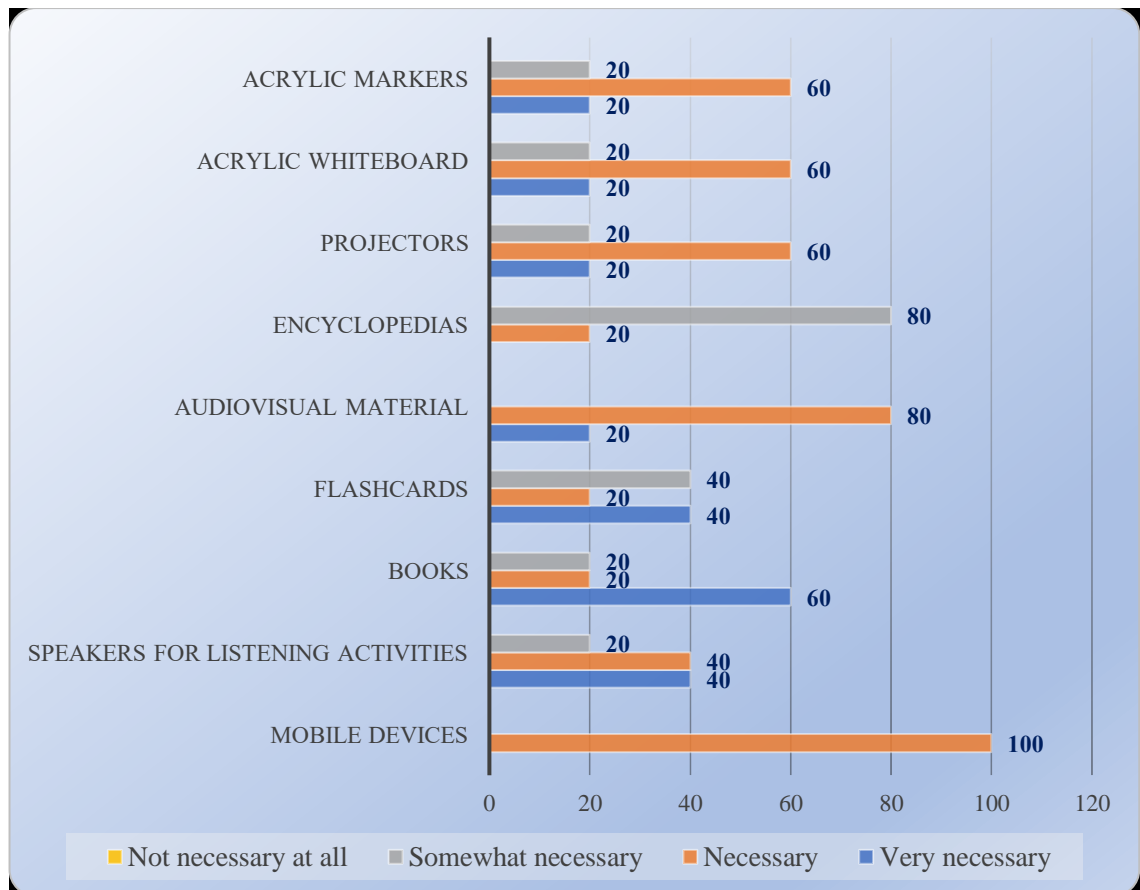
Note: Own elaboration. Source: 2022 July surveys

Interpretation: The most effective include books, audiovisual materials, and electronic devices like mobiles and speakers. Picture books may be beneficial for teaching vocabulary and simple grammar concepts. They might also provide a context for language learning that can be very beneficial. Audiovisual materials could be used to help with pronunciation and listening comprehension. Mobile devices are also a great way to practice English while having fun.

No matter what kind of teaching tools are used, it is important to make sure that they are appropriate for the student's level of language comprehension. Some materials may be too difficult or too easy, so it is essential to find something just right. With a little trial and error, teachers should be able to find the perfect English learning materials for their students.

Item 4. Are there technological tools for teaching English vocabulary to elementary school children in your institution? If so, please mention which ones.

Figure 10.

Teachers' percentage and considerations about the use of mobile apps in the institution.
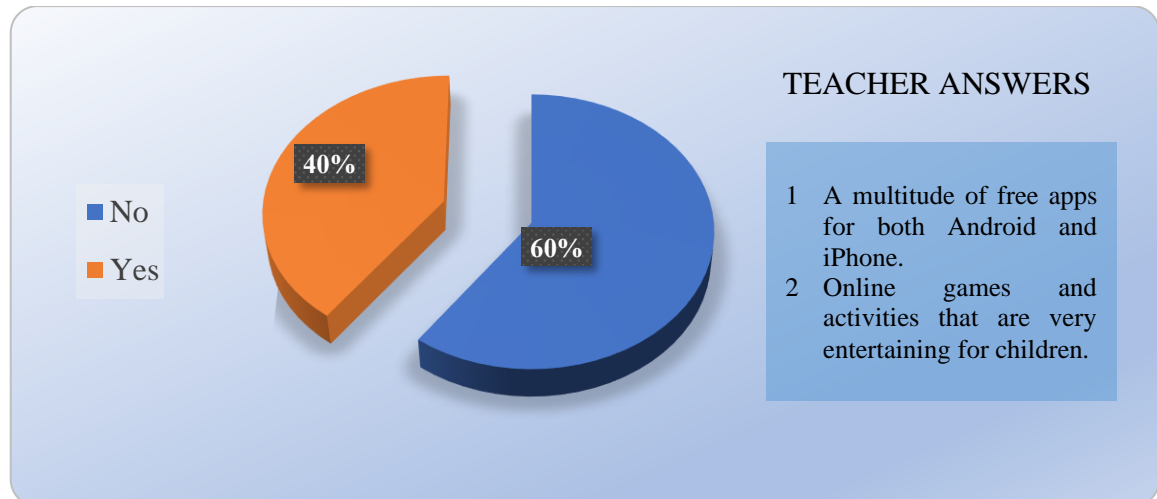
Note: Own elaboration. Source: 2022 July surveys

Interpretation: Although most teachers consider that there are no technological resources to teach English vocabulary, few use these digital materials. Hence, when choosing an online resource or app, it is essential to consider the child's age and level of English. Some resources and apps are specifically designed for children who are just beginning to learn English and those who are more advanced. Using online resources and apps to teach English vocabulary can be a great way to engage children in learning. Teachers can ensure that their students get the most out of their learning experience by choosing resources and apps designed to teach English vocabulary.

Item 5. Select how necessary you consider implementing mobile applications for teaching basic English vocabulary to children in the 2nd grade of elementary school.

Figure 11.

Teachers' need level about the implementation of a mobile app.
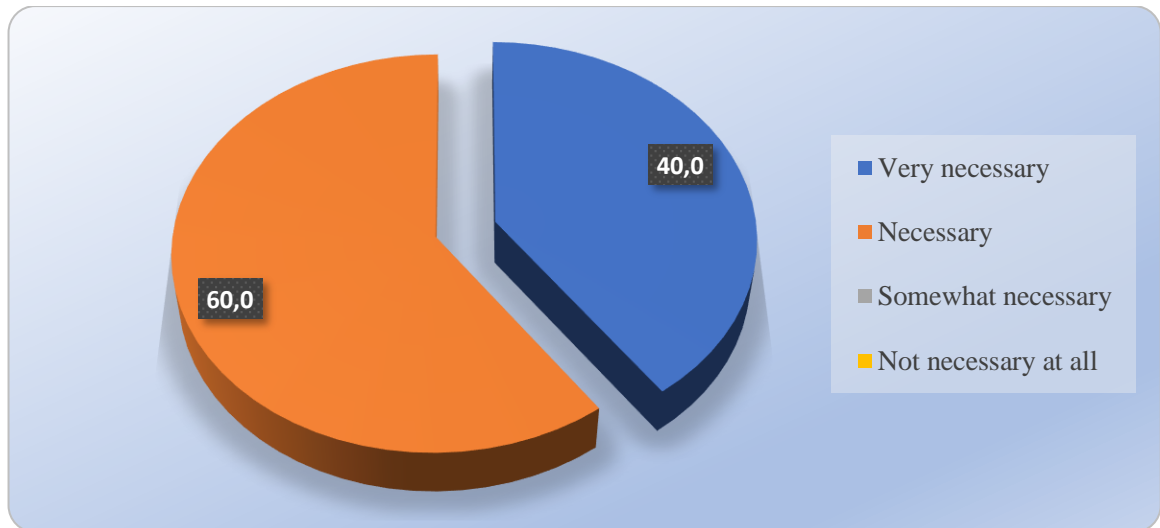
Note: Own elaboration. Source: 2022 July surveys

Interpretation: Teachers from Unidad Educativa San Roque mark essential the implementation of mobile applications to help their students learn. Thus, one area where these apps might be beneficial is teaching basic English vocabulary to children in the second grade of elementary school. Therefore, mobile apps could be a great way to make learning English fun and interactive for kids. They could also be an excellent tool for teachers, giving extra practice to students who need it.

Item 6. From the following list of topics, select how appropriate you consider integrating these topics in a mobile application for English language learning in children in the 2nd grade of elementary school.

Figure 12.

Most appropriate topics in a mobile application, according to teachers.
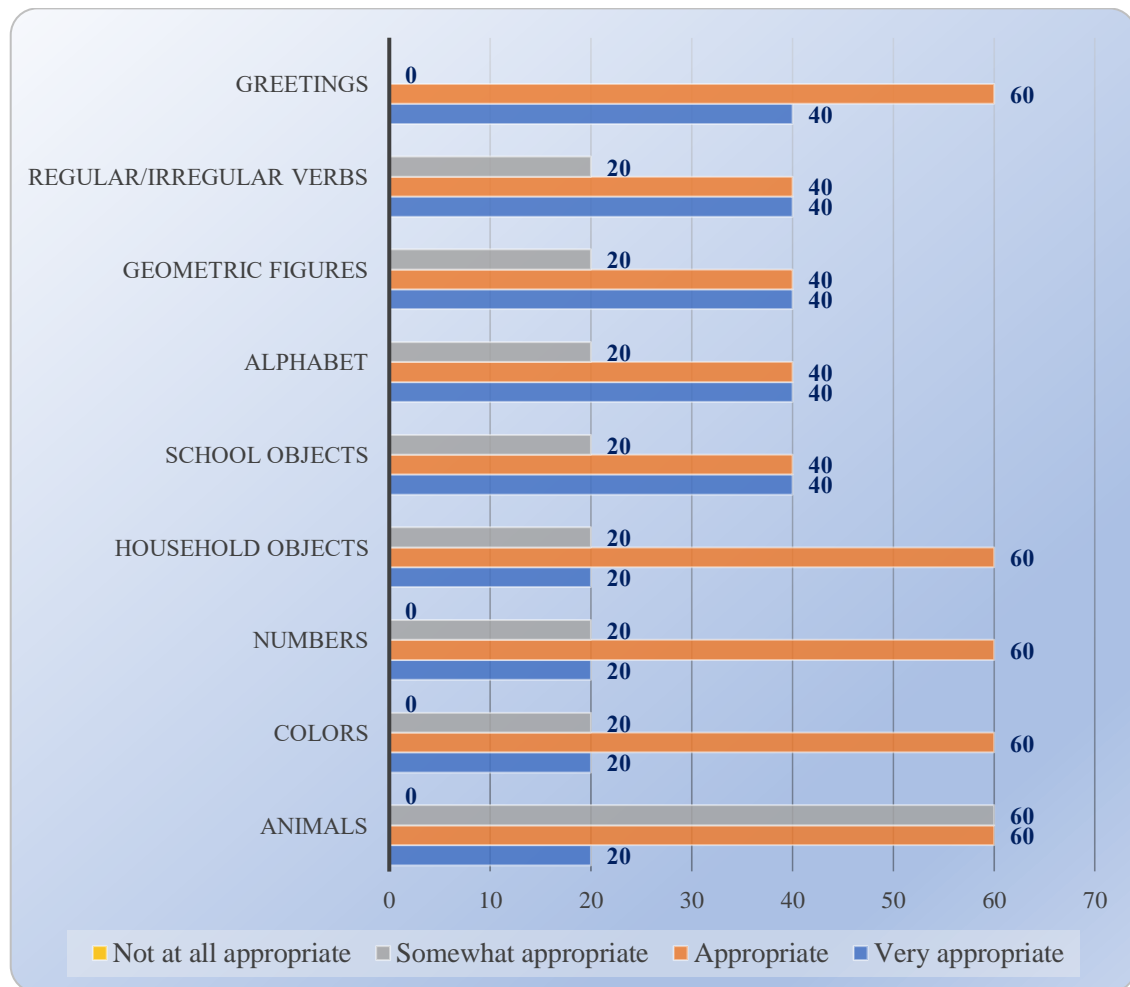
Note: Own elaboration. Source: 2022 July surveys

Interpretation: The teacher's survey results emphasize greetings, house things, numbers, colors, and animals. Children need to be able to greet others in English to make a good impression. By learning simple greetings, children will be able to interact with others in English daily. In addition to greetings, children can also learn about house things, numbers, colors, and animals through mobile applications. These topics are integrated into apps which make learning enjoyable and attractive. Thanks to this, children can expand their vocabulary and describe the world around them in English.

Item 7. What strategies have you used as a teacher to teach English vocabulary to 2nd-grade elementary school children? Why and how do you use them?

Table 2.

Teachers' strategies used in students' vocabulary learning.

Teachers N°	Teachers' answers
1	I have not had much experience with younger children. However, audiovisual resources materials stimulate people's brains, even more so for children.
2	I do not work at that level.
3	Some strategies have been to consider the general characteristics of the learner, constant monitoring of the teaching process, and type of mastery of the curricular content.
4	I have used Flashcards and line drawings on the board; I think this is the most eye-catching way to get the children interested in the topic.
5	I am not in charge of this course.

Note: Own elaboration. Source: 2022 July surveys

Interpretation: Although a few teachers surveyed do not work with 2nd-grade children at the Unidad Educativa San Roque, most focused on a few key strategies. These can be used to ensure the successful teaching of English vocabulary to their students. First, incorporating audiovisual resources into lessons can be extremely helpful. This could include videos, songs, or even games to help children learn new words. Additionally, monitoring students' progress and provide feedback. This way, teachers can identify areas where students may struggle and adapt their teaching accordingly. Finally, using tools like flashcards and line drawings can also help teach vocabulary to guarantee that learners can effectively learn new English vocabulary words.

Item 8. Have you ever used mobile apps to teach English vocabulary to elementary school students? If YES, please mention how often you have used them. If NO, please write why.

Figure 13.

Percentage and considerations on the teacher's frequency of use of mobile applications in the classroom.
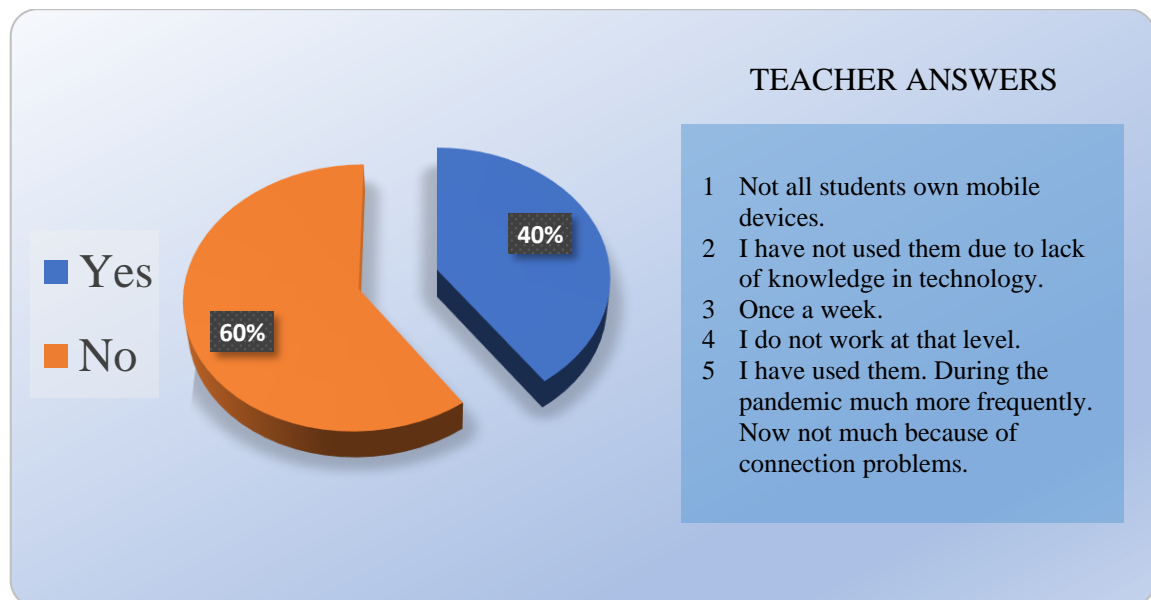
Note: Own elaboration. Source: 2022 July surveys

  Interpretation: Most teachers surveyed mentioned using a mobile application within the teaching and learning process. According to teachers, it can be inferred that there are a few key things to remember when using mobile apps to teach English vocabulary to elementary school students. First, using the app frequently, preferably for each student's task, could be essential. This will help ensure that students are actively engaged and not just passively viewing the material. Second, it is essential to be aware of connection problems when using mobile apps. This can be a significant issue if students try to access the material from a location with a poor internet connection.

  Finally, it is crucial to understand the technology and how it can be used to teach English vocabulary. Many teachers may lack the understanding of how English vocabulary can be taught using mobile apps. As a result, they fail to make use of the full potential of these apps, which could be used to give students a more engaging and immersive language learning experience.

Item 9. Would you be willing to use a mobile application for teaching English vocabulary to elementary school children? Why?

Figure 14.

Level of the willingness of the implementation of a mobile app for teaching.

TEACHER ANSWERS

1 It would be very beneficial.
2 I think it would be very useful, innovative, creative to increase children's interest in the subject. I think children would learn better.
3 It facilitates and attracts the attention especially of children.
4 Because it is necessary to use technology.
5 Children tend to learn faster, and mobile applications for them today are very familiar, they feel very comfortable using them and are quite good at it.

Note: Own elaboration. Source: 2022 July surveys.

Interpretation: All teachers from Unidad Educativa San Roque agree that there are many benefits to using a mobile application for teaching English vocabulary to elementary school children. For one, it can help capture their attention and interest. Additionally, it can help them learn quickly and efficiently. Consequently, teachers will probably incorporate mobile applications into their teaching plans most of the time. This is because they can see the benefits that it has for their students.

3.2 Students' survey results

Item 1. How much do you like English?

Figure 15.

Level of student satisfaction with the English language.
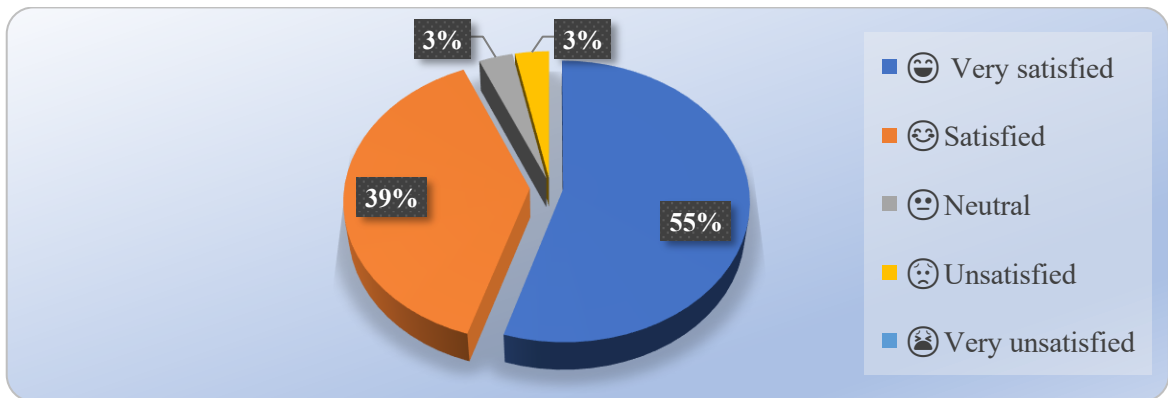
Note: Own elaboration. Source: 2022 July surveys

Interpretation: The children's surveys demonstrate that they have a strong curiosity and enthusiasm for learning English. They might be open to new vocabulary and eager to engage in interactive exercises to sharpen their English skills. This may explain English is increasingly becoming the language of choice among children, and they are willing to put in the effort to become proficient in it.

Item 2. How would you like to learn English?

Figure 16.

Elements most liked by students for the English learning process.
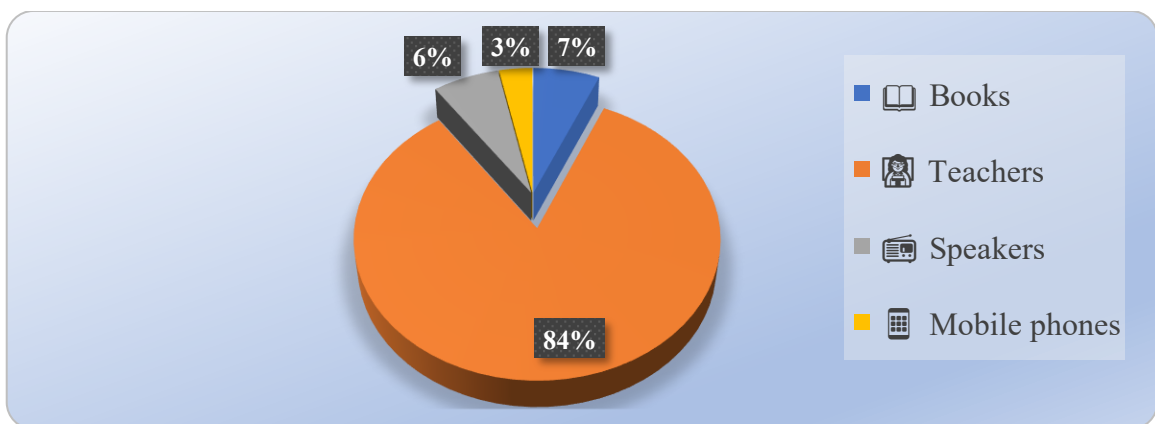
Note: Own elaboration. Source: 2022 July surveys

Interpretation: Learning English can be very funny, especially when young learners have a great teacher to help them. Almost all surveyed students prefer to learn from their teachers rather than from other physical material because they can get one-on-one attention and support. With a teacher's help, children can progress more quickly and confidently in their English language skills.

Item 3. Have you ever used a cell phone?

Figure 17.

Level of cell phone use by students.
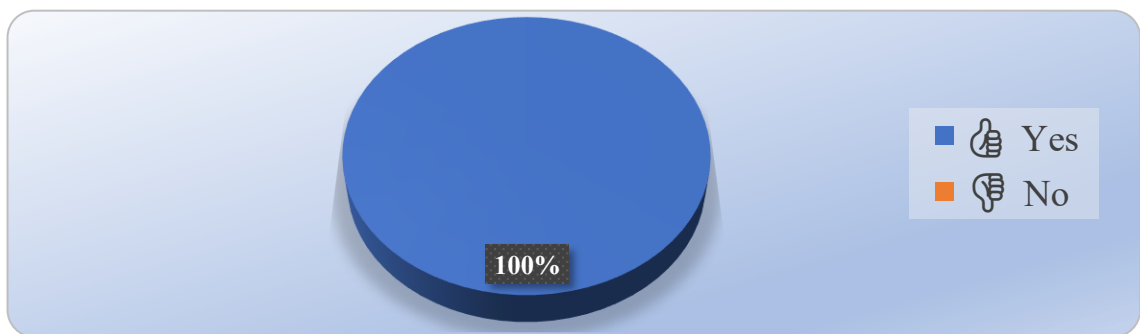
Note: Own elaboration. Source: 2022 July surveys

Interpretation: It is interesting to know that all students have used cell phones despite their young age. Students have access to technology that was unimaginable only a few years ago and it has become an integral part of their lives. Nowadays, toddlers know how to use smartphones and tablets. Even though they may not have their phone, they have probably used one at some point. This goes to show how integral technology has become in their lives.

Item 4. What have you used a cell phone for?

Figure 18.

The most common activity of cellphones by children.
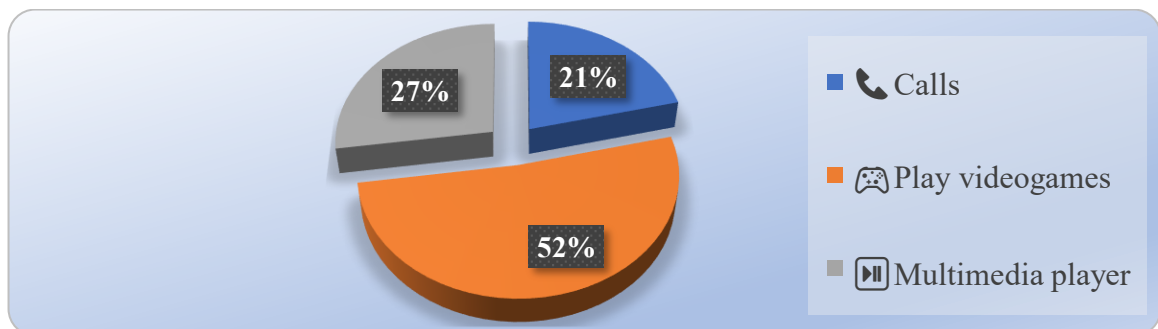
Note: Own elaboration. Source: 2022 July surveys

Interpretation: The survey results show that children increasingly use cell phones for various purposes. For most of them, a phone is primarily a tool for playing mobile games. For others, it is a way to keep in touch with friends and family. Moreover, for others, it is a way to access the wide world of online media. Whatever the reason, there is no doubt that cell phones have become an integral part of children's lives. Furthermore, as young learners continue to use phones for more and more purposes, their dependence on these devices is likely only to increase. For this reason, it is necessary to motivate them to use phones as educational material.

Item 5. Would you like to learn English using a cell phone?

Figure 19.

Level of students' acceptance of using a cell phone to learn English.
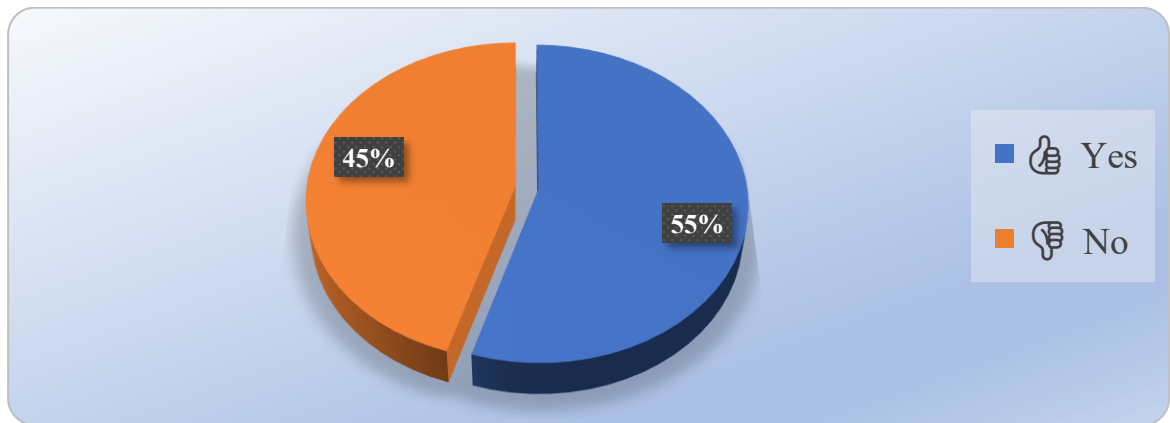
Note: Own elaboration. Source: 2022 July surveys

Interpretation: The previous figure shows that more than half of the children want to use a cell phone to learn the language. However, the difference is minimal with those who refuse to use a cell phone. The main reason cited by the children was mostly for playing games. So, it is very likely that learning a foreign language is new to them because of their young age.

Item 6. Look carefully. Circle the pictures you like the most.

Figure 20.

Elements that catch children's attention.
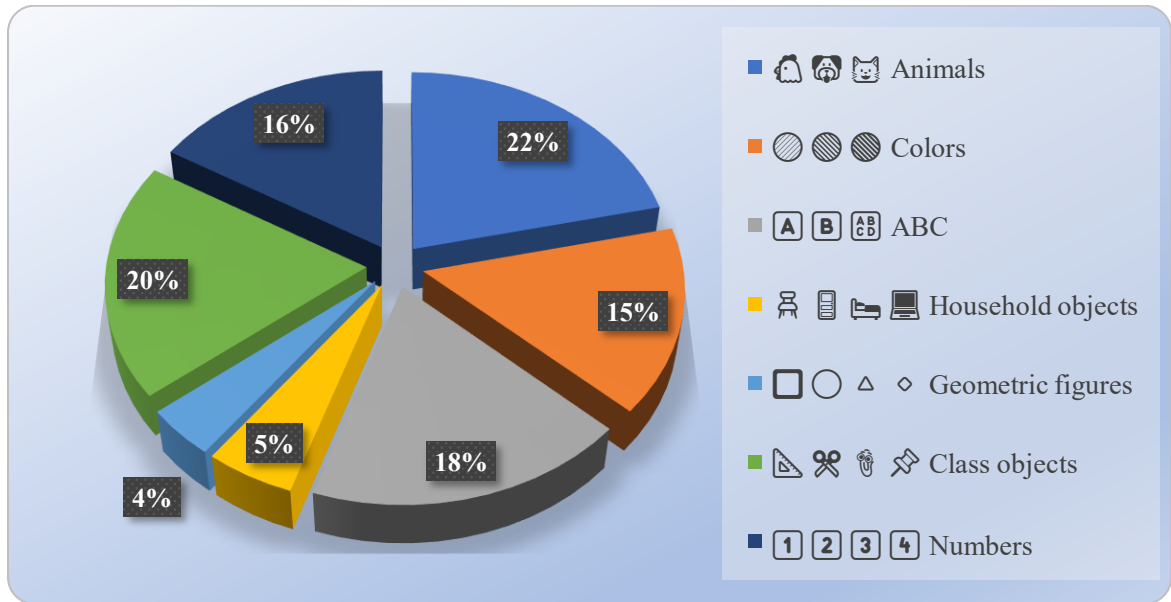
Note: Own elaboration. Source: 2022 July surveys

Interpretation: When it comes to learning English, interesting topics appeal to young children. The learners' results show that animals, class objects, and the alphabet are all significant aspects to start with. By introducing these concepts in a fun and engaging way using an app developed, children can easily understand the basics of the English language related to those topics.

3.3   Discussion

One of the most important things for young children learning English is to be able to integrate the language into their daily lives. A great way to do this is through mobile applications. According to the Unidad Educativa San Roque 2nd grade students' answers, they are constantly immersed in them. The surveyed teachers also agree on implementing a mobile application in this institution's teaching and learning process. The study of Oz (2015) reflects teachers' acceptance of mobile applications in the classroom due to their usefulness, availability, accessibility, and portability, among other aspects. This has helped to improve the quality of education by making it more engaging and interactive for the students.

Thanks to the teachers and students' results, it is said that there are a few things to keep in mind when developing an app for children. First, ensure the app is appropriate for the child's age and level of English. Creating the right one for children with daily vocabulary will result in a practical learning experience. This is evidenced when students prefer mostly to learn simple vocabulary about animals, class objects, and the alphabet. This preference for simplicity is probably because these types of words are essential for communication and are exposed in the children's environment. Second, look for an app that offers both audio and visual elements. In this sense, Marsh et al. (2018) 's research mentioned that children stimulate their inhibition of play and creativity when using apps. Corresponding to the obtained results, this could be reflected when children use a cell phone because they mostly prefer it for playing games.

On the other hand, although most of the students from Unidad Educativa San Roque initially mentioned that they would prefer to study English with their teacher, more than half of them later responded that it would be a good idea to study through a mobile app. In addition, mobile apps usually have more engaging content than traditional textbooks. Qin (2016) mentioned that traditional education could cause discomfort in students. This means that children want to use technological materials because of their novelty. They are curious about how mobile devices work and what they can do.

In conclusion, the 2nd-grade students from Unidad Educativa San Roque are currently immersed in an increase in the use of mobile applications in their daily lives. Moreover, the applications can help children's English learning due to their interactivity. Finally, many advantages of using mobile applications in the classroom have been pointed out, such as the ability to complement or replace traditional methods, provide clarity in instruction, and increase students' motivation, curiosity, and creativity.

4 CHAPTER IV ACADEMIC PROPOSAL

4.1 Proposal title

My First English App. A guide to teach basic English vocabulary to children.

4.2 Introduction

With the COVID-19 outbreak, many schools have closed their doors and moved to online learning. This was a difficult transition for many students, especially those in the 2nd grade of Basic Education in elementary school. One of the biggest challenges for these students was mastering English vocabulary and becoming familiar with ICT in an educational context.

So, what if there was a way to use technology to help improve English vocabulary in an interactive and fun way in 2nd graders? That is the objective of this thesis proposal. The goal was to create a mobile app that they could use to improve their English vocabulary. The teacher should be the primary guide for the children in the mobile application's teaching and learning process; therefore, he/she must know how to support his/her little students.

This proposal offers activities linked to "My First English App". They focus on listening, speaking, reading, and writing. The worksheet activities integrate listening vocabulary: children tap on a picture, and it will reproduce its sound in English. Other listening activities include repeating what is heard in the audio to complete a specific task. Similarly, the app contains a video related to the main vocabulary topic that children can enjoy.

The worksheets have speaking activities. Children must record their voices and playback in most of them to practice pronunciation. To do this, the app also provides an opportunity for kids to listen to their recordings and make adjustments as needed. Through listening and revising, they can further refine their pronunciation and improve their speaking skills.

There are activities that the student needs to observe within the application how a word is written (reading). Reading offers a diverse and enriching experience, one that can be used to increase the student's understanding of and engagement with English vocabulary. By observing how a word is written, the student can gain valuable context surrounding the meaning of the word, improving their familiarity with it. Additionally, reading helps build reading comprehension skills, as the student learns to recognize patterns and make connections between words.

The worksheets are designed to help the student practice their writing skills, while also encouraging the development of a regular writing habit. They do this by providing tasks

that guide the student on how to write a word. This can be done either by filling in missing letters or simply tracing the letter. To further build on this, the worksheets also include exercises that require the student to draw lines correctly between spaces and ensure that the letters have been written in the correct order. Through this, students are able to increase their knowledge of writing, improve their handwriting, and establish a positive and consistent writing habit.

The developed app topics and activities are based on the English Pedagogical Module 1 for 2nd-grade students of Basic Education in primary school. Nine units were created to develop the proposal. Unit 1 covers the Greetings and Farewells topic; unit 2: ABC; unit 3: Colors; unit 4: Class Objects; unit 5: Household Objects; unit 6: Figures; unit 7: Verbs; unit 8: Animals; unit 9: Numbers.

4.3 Objective

Strengthen English speaking skills in second graders through worksheets and "My First English App".

4.4 Theoretical foundation

Today's children are fortunate to be able to use technology as a tool for learning. With the internet, access to educational resources has been greatly expanded, allowing them to learn whatever interests them, at any time and in any place. One of the greatest opportunities available to them is the ability to learn a foreign language such as English. It opens up new cultural experiences and offers career opportunities, while also providing a great way to improve cognitive development.

Teaching English vocabulary to children can be challenging, but mobile learning can help make it easier. With mobile learning, children can have fun while learning and picking up new words at their own pace. If mobile learning is coupled with hands-on activities (worksheets), it can become a compelling, fun, and engaging educational process.

"My First English App" brings numerous benefits to children. It can help develop cognitive, language, and social skills. The educational app is easy to use and adapts to different learning styles (autonomous and collaborative), making it an excellent way to teach basic English vocabulary to children with different needs or who come from different cultures. It can also be used in environments other than an educational context, such as at home or an open space that enhances relaxation and regulates high-stress states.

"My First English App" is designed to teach primary school children the fundamentals of the English language in an interactive and engaging way. It not only covers concepts such as numbers and letters, but also encourages and promotes social and emotional development. By providing activities like learning to share and helping build self-

confidence, this app helps children to better understand and appreciate the English language while gaining valuable interpersonal skills.

Lastly, the application of the vocabulary topics is based on the units granted by the Ministry of Education of Ecuador for primary education for second graders. The proposal's activities are linked to the mobile application in sequential order. This will allow children to manipulate and learn from technological devices with Android operating system that they have. Therefore, children are exposed to unintentional learning about how a mobile device works and to develop solutions through technological interaction.

4.5   App manual and support for teachers

4.5.1   Introduce the mobile application to the child

The teacher must guide his students on how to download it. First, teachers and students should have a mobile device with an internet connection (Android). Second, go to a web browser (it can be Google Chrome or another) and type the following link in the search bar: https://bit.ly/3OyuPto   Then, this window will appear. To download the application, click on download.

Figure 21.

The window for downloading the app.
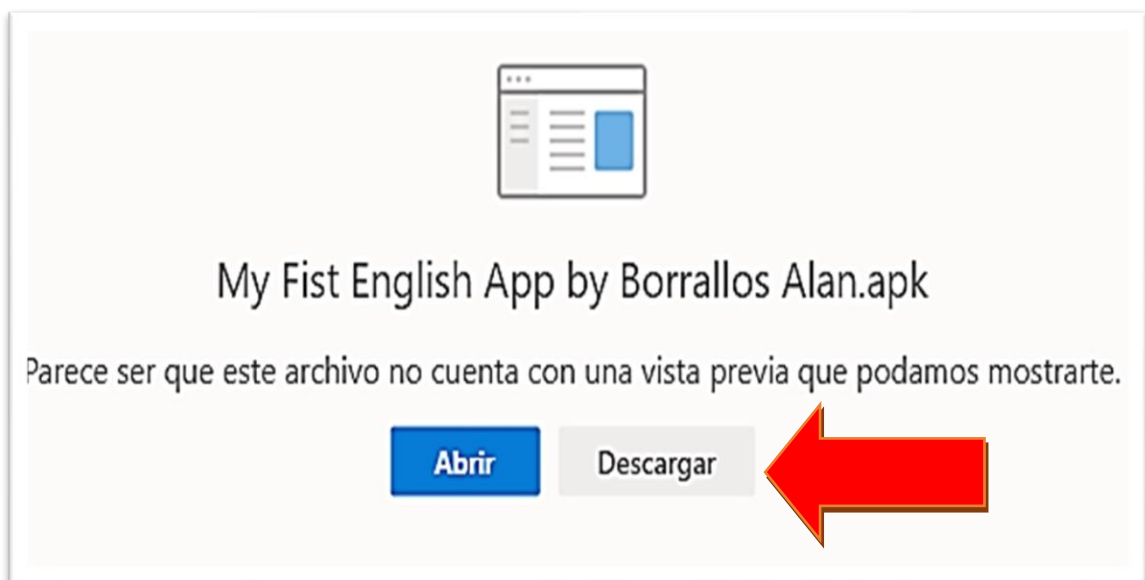
Note: Own elaboration.

Once the download is complete, the file will be saved in the Downloads folder. Before installing the application, enabling Android's unknown origins is essential. This process is easy to do but varies depending on the version of the Android operating system

of each cell phone; therefore, here is a video that explains in detail step by step depending on the version: https://bit.ly/3F1XiF8 Once done this, install the application. Go to MyFiles/Downloads, find the downloaded application, and install it.

4.6 Help the child to open and navigate the mobile application

When the application is installed, ensure it runs correctly when opening it. Also, advise the students that one finger is enough to navigate the application. When entering any application section, one single tap is also enough; while swiping, it is important to press and hold anywhere on the screen and swipe up, down, left, or right. Figure 22 shows those scrolling.

Figure 22.

Types of scrolling in the mobile application.
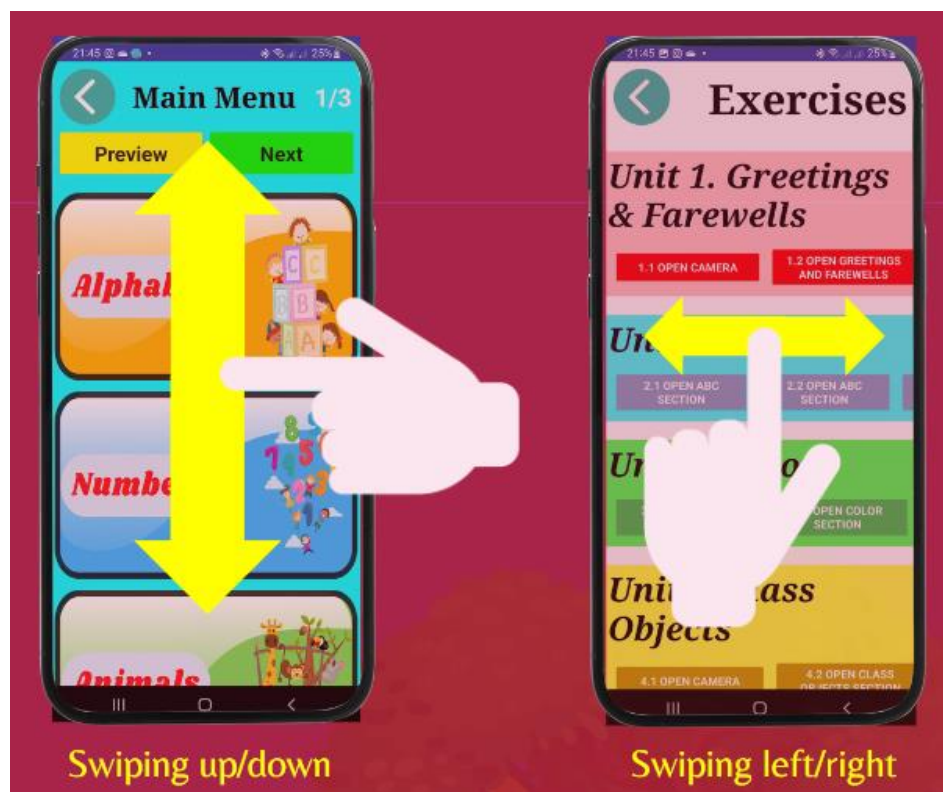
Note: Own elaboration

Explain to the children that the application consists of two main big buttons. The first is for reviewing vocabulary, and the second is for doing activities related to the worksheets. Teachers can review the graphic organizer in the Chapter 1, Figure 6. This will provide them with a visual representation of the material they are learning and allow them to keep track of their progress. Remember the activities associated with the worksheets are designed to help

students reinforce their understanding of the material. They are set up in an engaging way that encourages participation and critical thinking.

4.7   Assist the child, as necessary, while they interact with the mobile application

Teachers are responsible and obligated to assist students using the mobile application in class. This includes helping them troubleshoot any problems that may arise. If the student's mobile app closes unexpectedly, you should help them restart it and resume their activity. This solution can also solve if there is a glitch in the audio playback or if the mobile app is running slowly.

There are two methods for restarting the application. The first one is to close the application and reopen it. The second one is to enter the list of applications in "Settings", then look for "My First English App" and tap on "Force close," after that, open the application normally. Remember that the second method is more effective, while the first one is faster but does not guarantee the complete closure of the mobile application.

4.8   General instructions to teachers for classes

Teachers are required to read the following general instructions before beginning classes.

> ➢ Guide students on how to download and use the mobile application.
> ➢ Teachers should encourage students to download the application using the link above to perform the exercises in class. The teacher can request the help of the children's parents; to do this, educators should give the section "App manual and support for teachers" translated into Spanish to the parents so that they can follow the instructions.
> ➢ If mobile devices are not enough for all the children, the teacher should form groups of 3 to 4 students to share the application.
> ➢ Students will have two worksheets: one for class and one for home. Teachers should print the worksheets and hand them out to the students. *Alternative*: Teachers should anticipate parents so they can print the worksheets and students can complete the assignments.
> ➢ Continuously monitor the time young students are exposed to mobile device activities. Each worksheet is intended for students to work for up to 60 minutes at school or at home. If homework exceeds this time, it is advisable to suspend and continue with other dynamic activities (games, singing, trips to the playground, etc.).

In the following pages, teachers can review the nine didactic units that correspond to the development of this proposal. GOOD LUCK!

MY FIRST ENGLISH APP

A GUIDE TO TEACH BASIC ENGLISH VOCABULARY TO CHILDREN

UNIT 1 — GREETINGS AND FAREWELLS

UNIT 2 — ABC — Are you ready?

UNIT 3 — COLORS

UNIT 4 — Class Objects

UNIT 5 — Household objects

UNIT 6 — FIGURES

UNIT 7 — VERBS

UNIT 8 — Animals

UNIT 9 — NUMBERS

My First English App
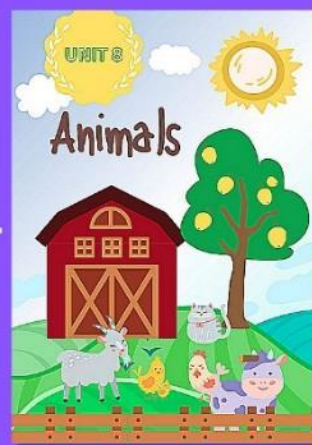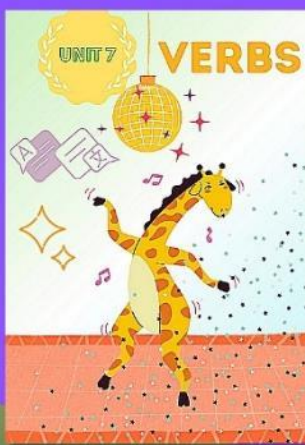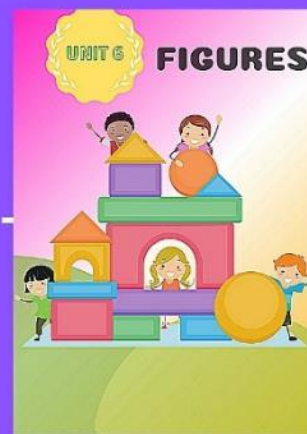
"The progressive development of man is vitally dependent on invention. It is the most important product of his creative brain."

Nikola Tesla

Made with love by Alan Borrallos

UNIVERSIDAD TÉCNICA DEL NORTE
UTN
IBARRA - ECUADOR

INDEX

UNIT 1

GREETINGS AND FAREWELLS

GREETINGS AND FAREWELLS

Exercise 1.1 — Open camera

Exercise 1.2 — Open Greetings and Farewells Section + Open voice recorder

Exercise 1.3 — Open Greetings and Farewells Section

Exercise 1.4 — Play audio

Exercise 1.5 — Open camera

Exercise 1.6 — Open voice recorder

Exercise 1.7 — Play video + Open QR Scanner

WARM UP

What is the first thing you do when you see their mom or dad?

What do you think the girl is doing?

What are the greetings you know?

WORKSHEET 1 FOR SCHOOL

1.1 Draw yourself saying hello to your teacher.

Take a picture using the app when you finish ••••••••>

DRAWING SECTION

1.2 Complete the greetings according to the images. Open the application and go to the **Greetings and Farewells** section to complete this task. Once you finish, **open** the app to **record your voice** talking the words.

G _ _ d   m _ _ n _ _ g .

Freelmages

_ _ _ d   a _ t e _ _ o o _ .

Freelmages

G o _ _   _ i g _ _ .

Freelmages

1.3 Open the application and go to the **Greetings and Farewells** section to find the missing letters.

Then, **find** the **words** in the alphabet soup.

K	X	H	O	G	G	T	Q	T
S	I	Y	G	O	Q	P	N	A
E	D	B	O	O	Y	Q	C	K
E	S	R	O	D	M	A	S	E
Y	S	I	D	N	C	E	Q	C
O	W	Z	B	I	Q	P	I	A
U	B	P	Y	G	H	C	C	R
J	B	V	E	H	G	F	J	E
I	U	I	Z	T	E	I	U	W

1 _ _ _ _ nig _ _

2 See _ _ _

3 Goo _ _ ye

4 Take _ _ _ _

4

1.4 Open the app to listen to an audio. Go to the **Greetings and Farewells** section. Tap on Play Audio.

Cut out the sentences and paste them in the blanks according to the audio.

Listen again and check the answers.

✂ -

| Hello! | My name is Javier. What is your name? | Hi! |

| My name is Tamia. | Goodbye! | Bye, Javier |

WORKSHEET 2 FOR HOME

1.5 Color the images - **Match** the pictures with their meaning.

Take a picture using the app when you finish •••••••••➔
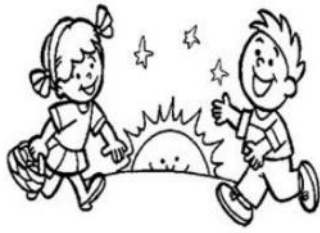
Good Morning   Good afternoon   Good night

islcollective

1.6 Open the app to record your voice. **Greet** three members of your family and record it.

Example

Good morning mother!

Good afternon sister!

Good night father!

1.7 Open the app to watch a video. Go to the **Greetings and Farewells** section. **Tap** on Play Video.

Alternative: Scan the **QR Code** with the app to watch online in HD.

6
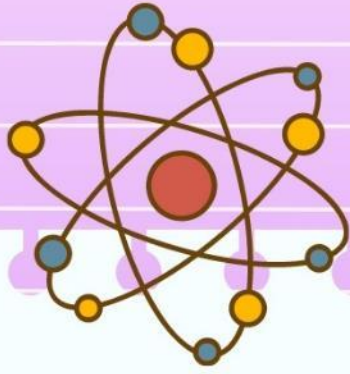
ABC

Are you ready?

ABC

Exercise 2.1 — **Open ABC section + camera**

Open ABC section — Exercise 2.2

Exercise 2.3 — **Open ABC section**

Open camera — Exercise 2.4

Exercise 2.5 — **Open QR Scanner**

Open camera — Exercise 2.6

Exercise 2.7 — **Open voice recorder**
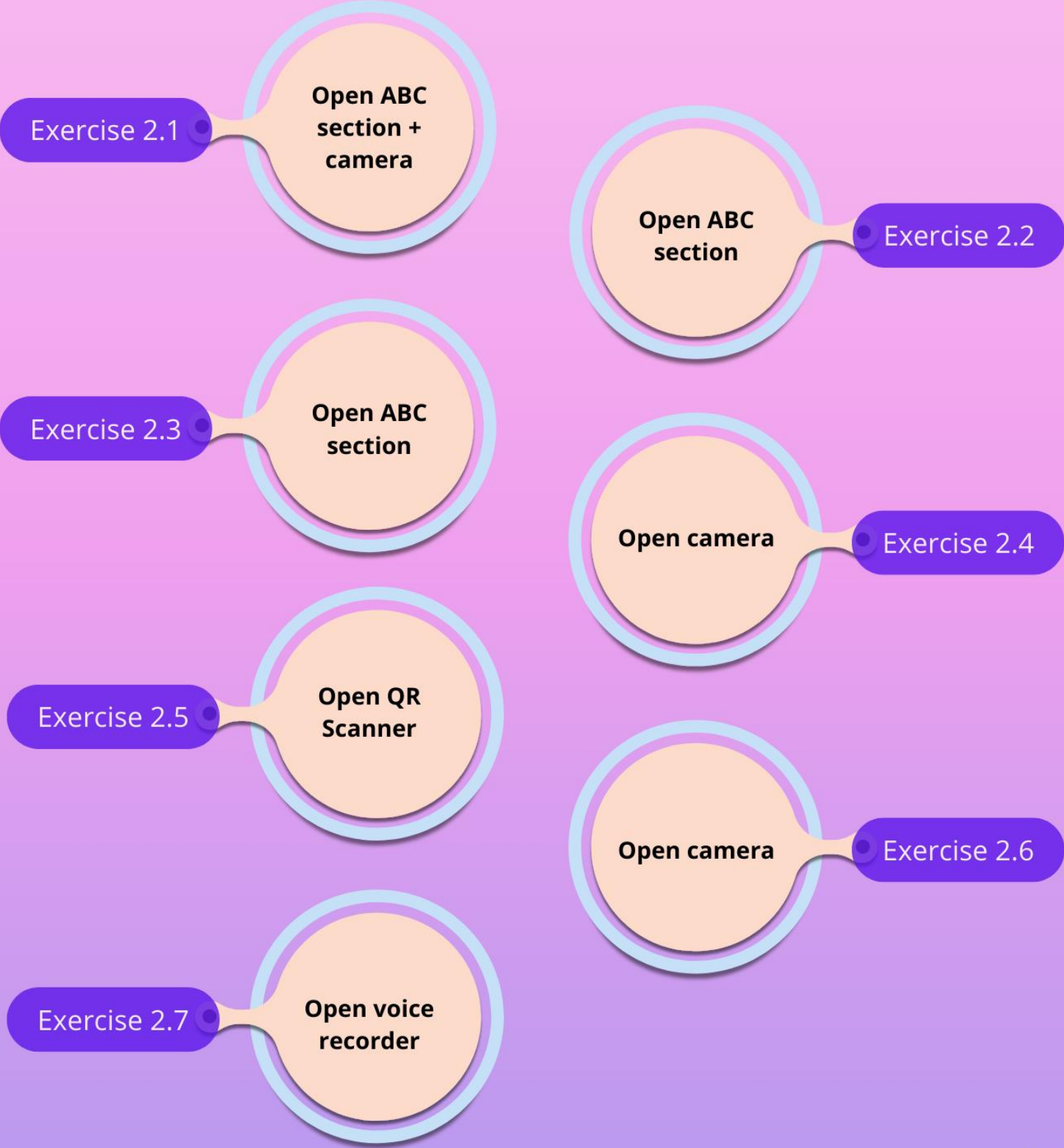
WARM UP

Can you spell your name?

Do you know the vowels of the alphabet?

Can you say words with these letters in Spanish?

WORKSHEET 1 FOR SCHOOL

2.1 Open the application and go to the **Alphabet** section. Choose the **initial** letters of your **name** and draw here.

Take a picture using the app when you finish ·········>

DRAWING SECTION

2.2 Open the application and go to the **Alphabet** section. **Search**, **listen,** and **match** the letters with the pronunciation.

A

B

U

[es]

[iu]

[ei]

[pi]

[em]

[bi]

M

P

S

2.3 Open the application and go to the **Alphabet** section.

Find the **vowels** in the alphabet soup.

Then, **circle** and **repeat** the pronunciation.

K	X	H	O	G	G	T	Q	T
S	I	Y	G	O	Q	P	N	A
E	D	B	O	O	Y	Q	C	K
E	S	R	O	D	M	A	S	E
Y	S	I	D	N	C	E	Q	C
O	W	Z	B	I	Q	P	I	A
U	B	P	Y	G	H	C	C	R
J	B	V	E	H	G	F	J	E
I	U	I	Z	T	E	I	U	W

A
E
I
O
U

WORKSHEET 2 FOR HOME

2.4 Help the letters reach their target.

Take a picture using the app when you finish ·········→
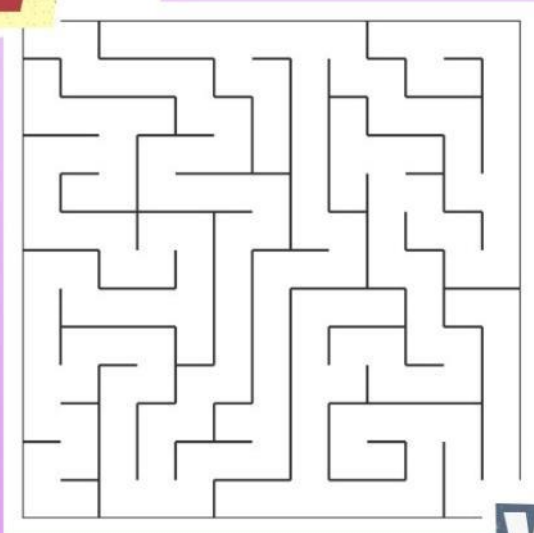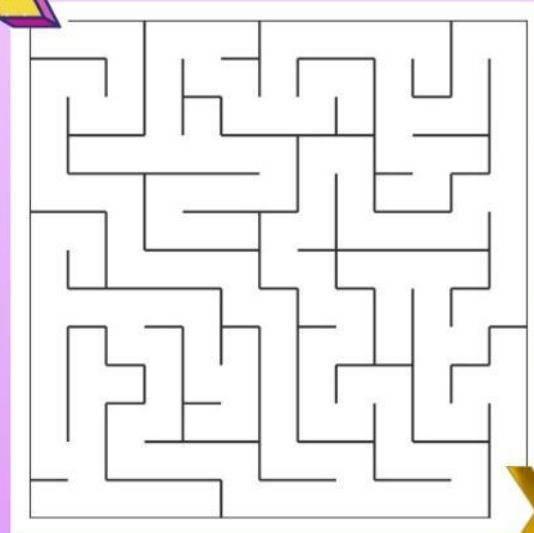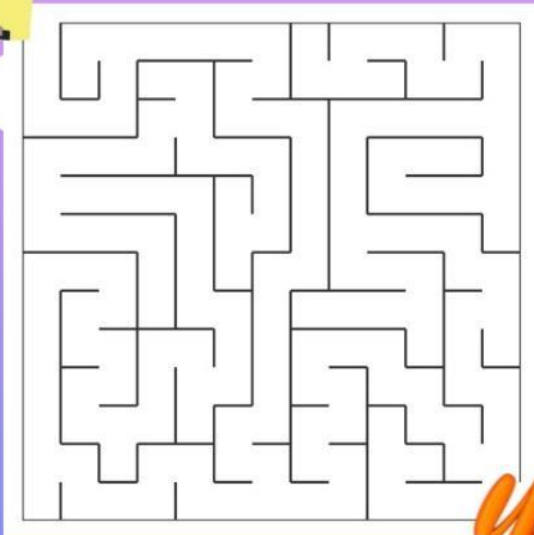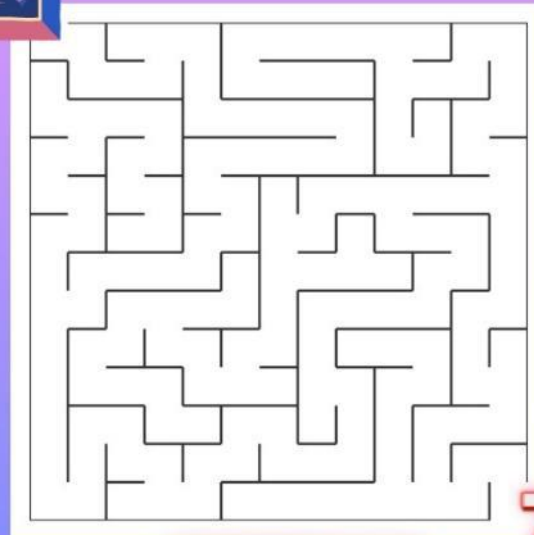
2.5 Scan the **QR Code** with the app to watch a video **online**.

WORKSHEET 2 FOR HOME

2.6 Trace the alphabet, and **take a picture** with the application when you finish.

Take a picture using the app when you finish ·········>

Alphabet Trace

Aa Bb Cc Dd Ee Ff Gg

Hh Ii Jj Kk Ll Mm Nn

Oo Pp Qq Rr Ss Tt Uu

Vv Ww Xx Yy Zz

freepik

2.7 Record your voice **saying** the following letters. Use the app to record.

J	K	L	N
[jey]	[key]	[el]	[en]

Q	R	T	V
[qiu]	[ar]	[ti]	[vi]

12
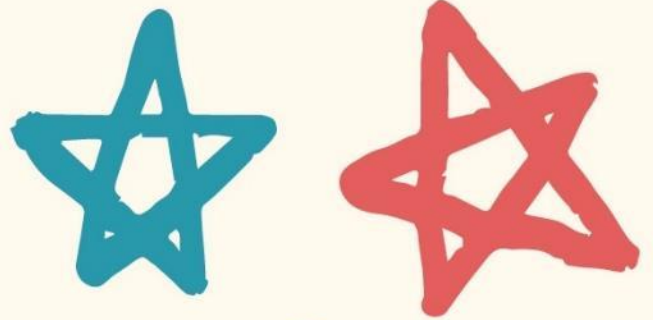
COLORS

COLORS

EXERCISE NUMBERS AND THE NAME OF THEIR SECTION IN THE APPLICATION.

Exercise 3.1 — **Open Colors section**

Open Colors section — Exercise 3.2

Exercise 3.3 — **Open Color Roulette**

Open camera — Exercise 3.4

Exercise 3.5 — **Open Colors section**

Open "Color Activity" — Exercise 3.6

Exercise 3.7 — **Open voice recorder**

WARM UP

What is in a rainbow?

What color is the sky?

What is your favorite color? Tell your partner.

WORKSHEET 1 FOR SCHOOL

3.1 Open the application and go to the **Colors** section. **Tap** on **six colors** and **repeat.**

3.2 *Working in pairs.* **Open** the application and go to the **Colors** section. **Show one color** to your classmate**.** Then**,** say: *What color is it?*

What color is it?

It is yellow

3.3 Open the app and go to the **Colors** section. Then, **spin the roulette four times** to choose colors and draw any object.

DRAWING SECTION

16

3.4 Match the picture with the correct color.

Take a picture using the app when you finish ·······>
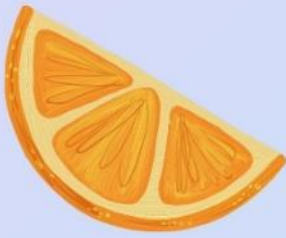
RED
YELLOW
PURPLE
ORANGE
PINK
GREEN

3.5 Point and **repeat** the color of the objects. **Use** the app to **listen to the** pronunciation of the colors.

It is... red

17
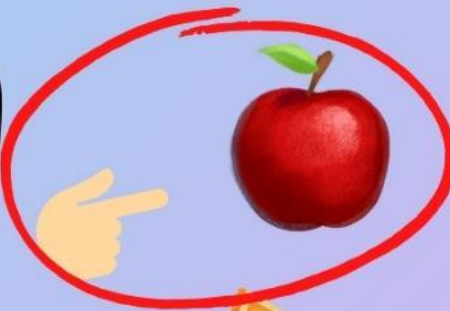
3.6 Open the application and go to the **Colors** unit. Enter to **COLOR ACTIVITY**. Color the picture according to the **codes. See** what you **find.**
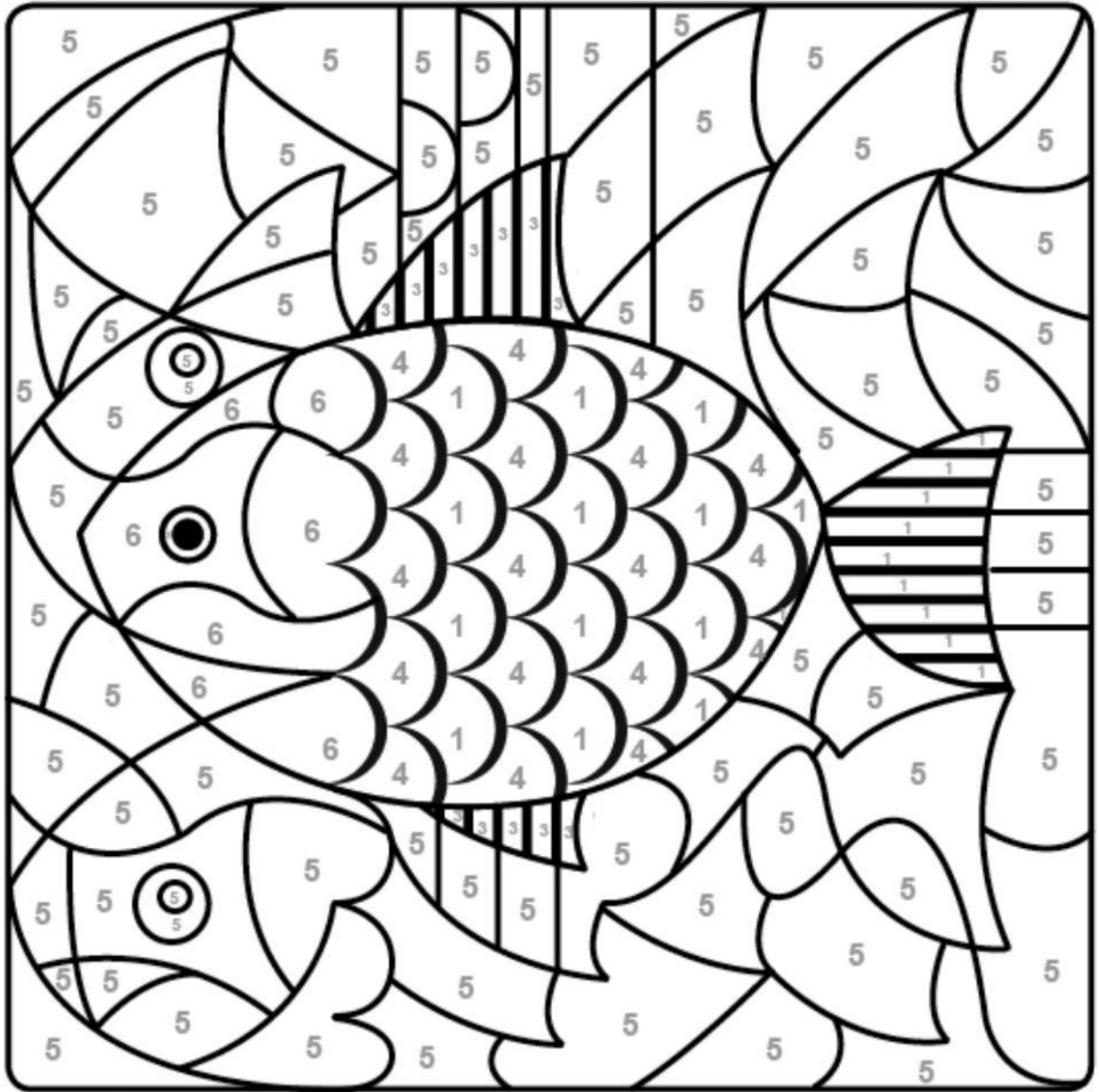
www.conmishijos.com

3.7 Open the app to **record** your voice. **Find** objects of different colors. Record your voice speaking at least 5 objects, for example:

It is green

1

It is red

2

18

UNIT 4

Class Objects

CLASS OBJECTS
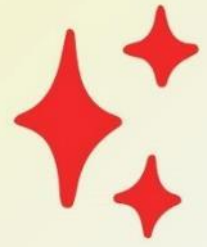
EXERCISE NUMBERS AND THE NAME OF THEIR SECTION IN THE APPLICATION.

Exercise 4.1 — **Open Class Objects section + camera**

Open Class Objects section — **Exercise 4.2**

Exercise 4.3 — **Open Number Roulette**

Open "Helping to Mary" — **Exercise 4.4**

Exercise 4.5 — **Open voice recorder**

WARM UP
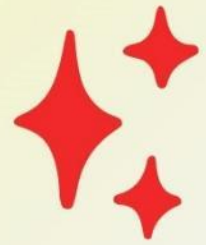
What items do you carry in your pencil case?

What do you use to draw and paint?

Where do you write your notes?

WORKSHEET 1 FOR SCHOOL

4.1 Open the application and go to the **Class Objects** section. Choose **3 objects** and **draw** here.

Take a picture using the app when you finish - - - - - - - - →

DRAWING SECTION

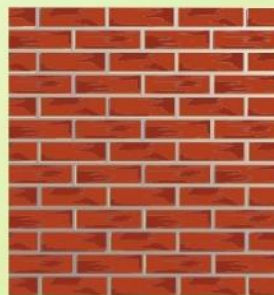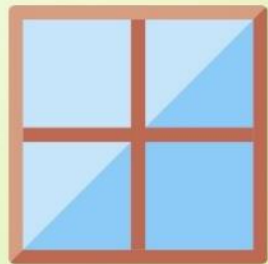**4.2 Open** the application and go to the **Class Objects** section. **Listen** and **match** the pictures with the words.

Pencil case

Pencil

Marker

Eraser

Backpack

Desk

22
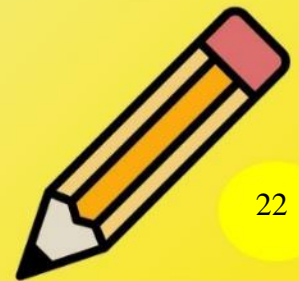
WORKSHEET 1 FOR SCHOOL

4.3 *Playing in pairs.* **Open** the application and go to the **Class Objects** unit. Tap on **The Goose Game**.

Choose a classmate. **Choose** and **cut two** class objects to play with. **Spin the Roulette** to move to the next **box** according to the **number**.

Pencil case

Pencil

marker

desk

map

sharpener

book

notebook

ruler

scissors
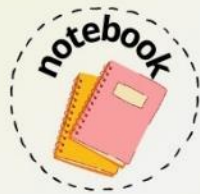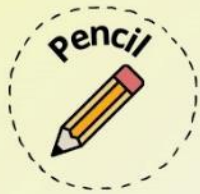
	Say an object with "B"	Replay	Say a color with "B"		Say a color with "R"	Lose your turn		
Lose your turn								Sing a song
	Replay		Say "Hello" to your classmate		Lose your turn	Greet to your teacher		Replay
Say an object with "N"								
	Say an object with "G"	Lose your turn		Say an object with "S"			Say a color with "P"	Lose your turn
Say an object with "P"		Say a color with "B"	Replay		Say a color with "O"			
	Replay							
Start	Say "GoodBye" to your teacher		Say an object with "F"	Lose your turn		Say an object with "D"	Arr	23

WORKSHEET 2 FOR HOME

4.4 Help Mary to **match** the **number** in the correct **class object**.

Open the application and **go** to the **Class Objects** unit. **Tap** on **HELPING TO MARY**.

Tap on each sound. Listen and put the number.
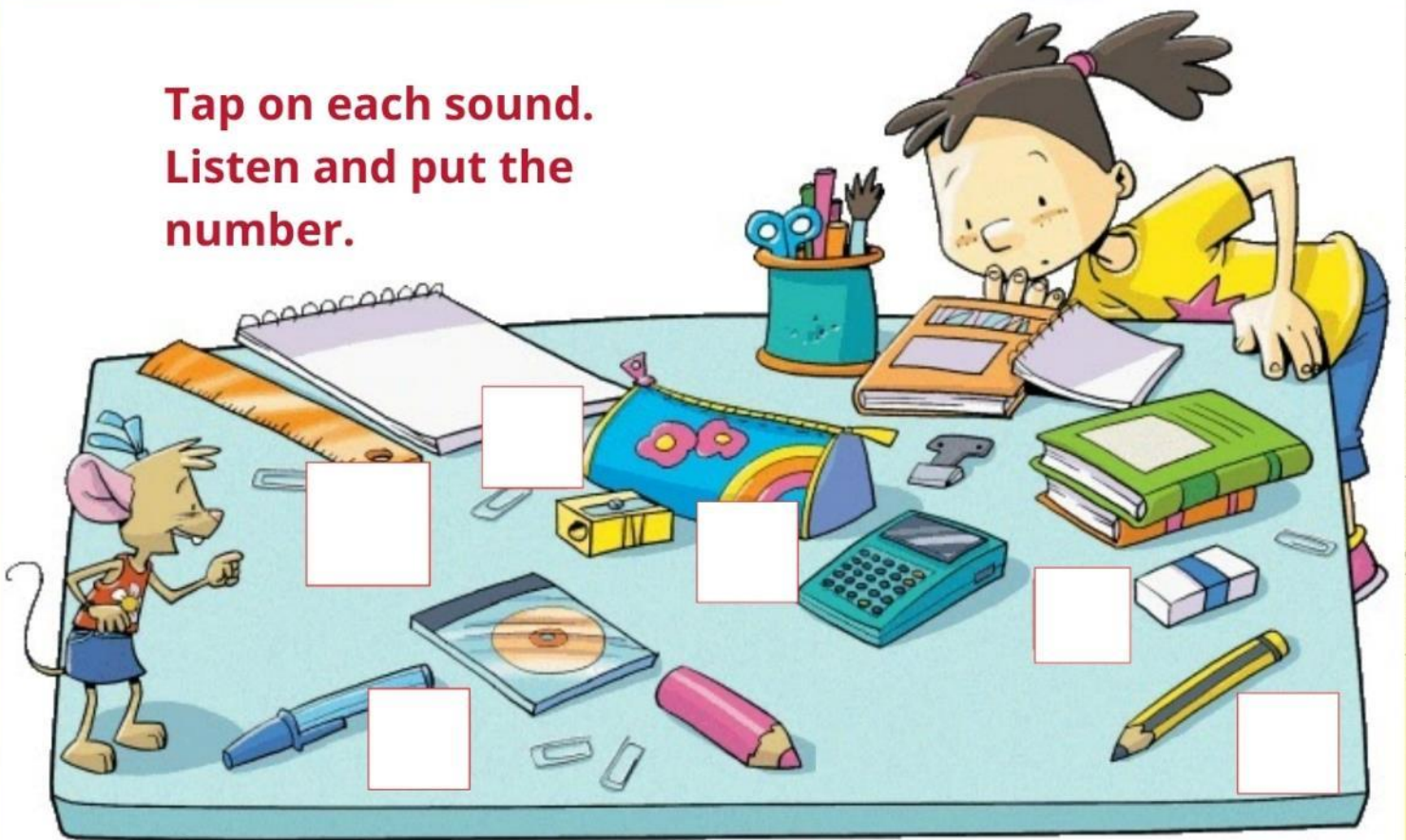
4.5 Find two or three class objects that you have.

Record your voice describing.

Use the **app** to record your voice.

Describe:
- **Name**
- **Color**

It is my eraser

It is... blue and red

Example

24

Household objects

HOUSEHOLD OBJECTS

Exercise 5.1 — Open Household Objects section + camera

Open Household Objects section — Exercise 5.2

Exercise 5.3 — Open the Number roulette

Open "My House" — Exercise 5.4

Exercise 5.5 — Open voice recorder

WARM UP

What is in a house?

What is outside a house?

How do I go to the second floor of a room?

WORKSHEET 1 FOR SCHOOL

5.1 Open the application and go to the **Household Objects** section. Choose 3 **objects and** draw here.

Take a picture using the app when you finish ··········>

DRAWING SECTION
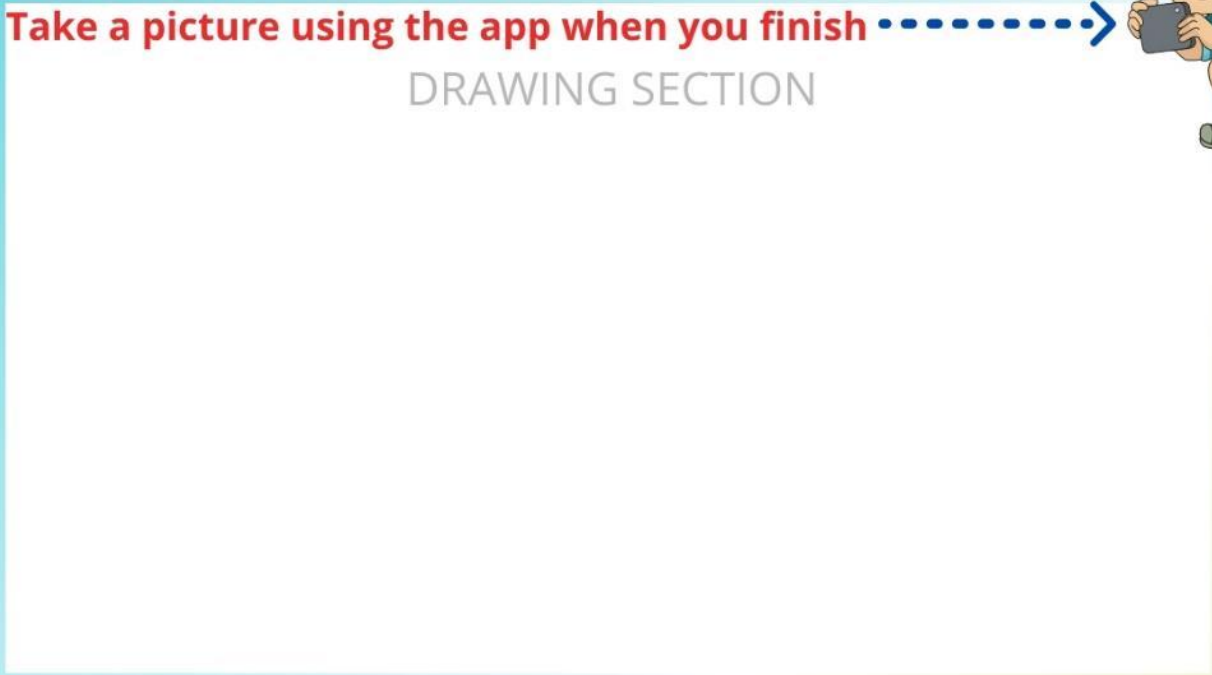
5.2 Open the application and go to the **Household Objects** section. **Listen** and **match** the pictures with the words.

Wall

Stairs

Door

Room

House

Window

WORKSHEET I FOR SCHOOL

5.3 *Playing in pairs.* **Open** the application and go to the **Class Objects** unit. Tap on **The Goose Game**.

Choose a classmate. **Choose** and **cut two** class objects to play with. **Spin the roulette** to move to the next **box** according to the **number**.

wall

stairs

door

room

house

window

balcony

floor

ceiling

garage
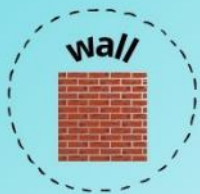
Say an object with "S"		Replay		Say a color with "B"			Say a color with "R"	Lose your turn
Lose your turn								
Say "Hello" to your classmate		Replay		Greet to your teacher		Lose your turn	Stand up for 3 seconds		Replay
Say an object with "W"		Say an object with "G"	Lose your turn		Say an object with "D"		Say a color with "O"	
								Lose your turn
Say an object with "H"			Say a color with "B"		Replay		Say a color with "P"	
Start	Say "GoodBye" to your teacher	Replay		Say an object with "F"	Lose your turn		Say an object with "R"	Arr

lakanal.net

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WORKSHEET 2 FOR HOME

5.4 Open the application and **go** to the **Household Objects** unit**. Tap** on **MY HOUSE.**

Match the **number** with the correct **household object**.

Tap on each **sound** in the app. **Listen** and **put** the number.

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5.5 Find two or three household objects in your **house**.

Record your voice describing.

Use the **app** to record your voice.

Describe:
- **Name**
- **Color**

It is my window

It is... blue

Example

UNIT 6

FIGURES

FIGURES

Exercise 6.1 — **Open Figures section + camera**

Open Figures section + camera — Exercise 6.2

Exercise 6.3 — **Open Figures section**

Open camera — Exercise 6.4

Exercise 6.5 — **Open Figures section + camera**

Open voice recorder — Exercise 6.6

WARM UP

What does the photo show?

What is the shape of a soccer ball?

What is the shape of a ruler?

WORKSHEET 1 FOR SCHOOL

6.1 Open the application and go to the **FIGURES** section. Choose 3 **Figures** and draw them here.

Take a picture using the app when you finish ·········➔

DRAWING SECTION
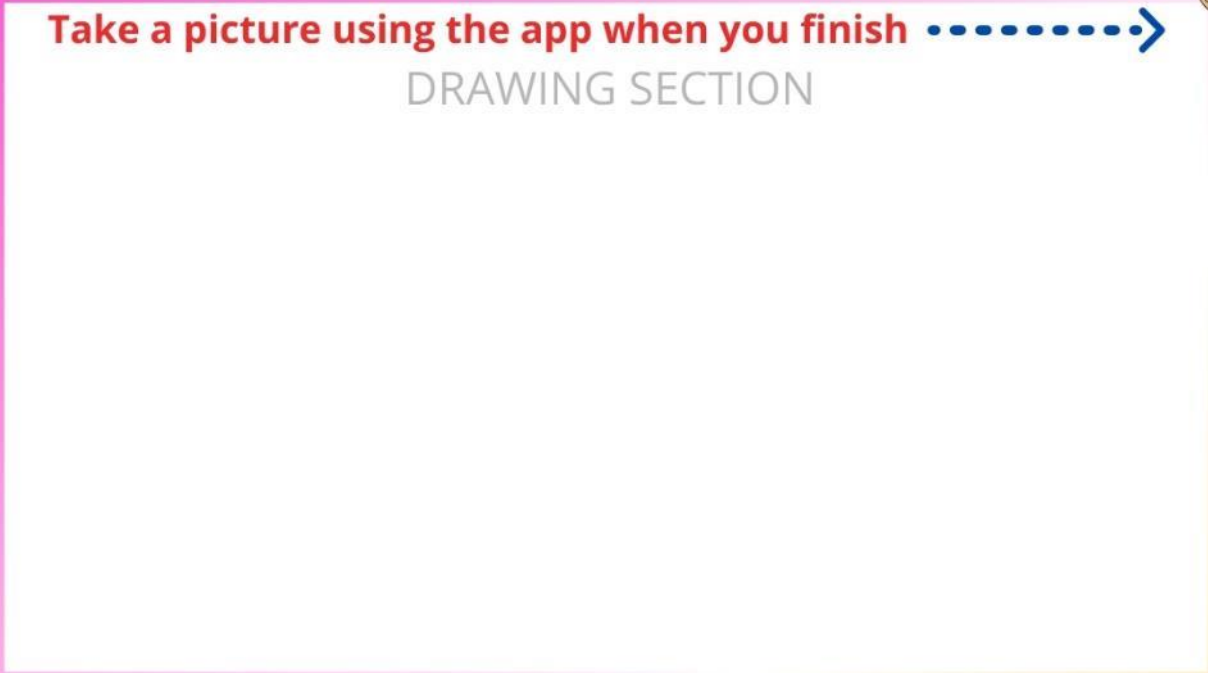
6.2 Open the application and go to the **FIGURES** section. **Listen** and **match** the pictures with the words.

Take a picture using the app when you finish ·········➔
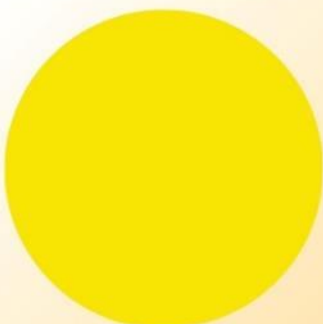
Star

Cross

Triangle

Circle

Rectangle

Square

34
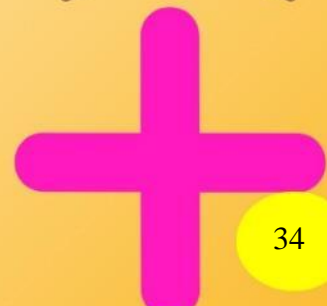
6.3 Point and **repeat** the figure that the object **has**. **Use** the app to **listen to the** pronunciation of the figures.

It is...
a circle
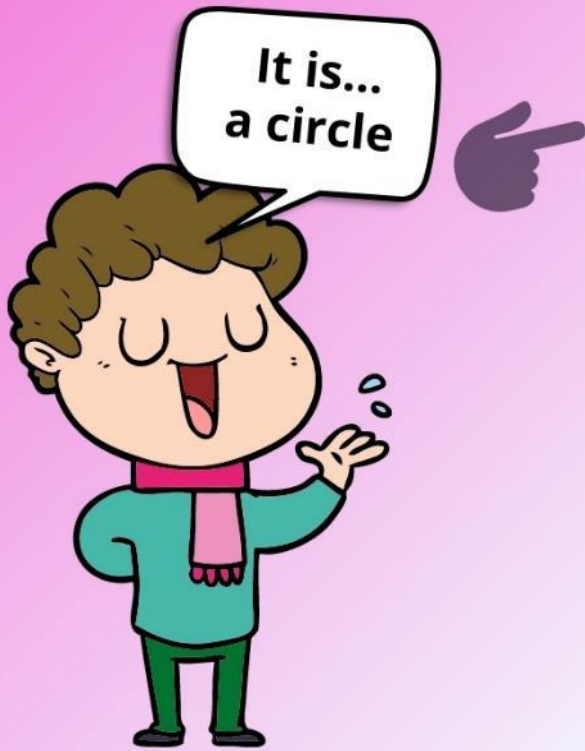
6.4 Use a pencil to trace a **path** from the **object** to the **figure**.

Take a picture using the app when you finish

Rectangle

Circle

Triangle

Adapted from: freepik

35

6.5 Open the application and go to the **FIGURES** section. **Circle** the object according to the **words**. **Use** the app to **help** you.

Take a picture using the app when you finish ·········>

Diamond				

Ring				

Rectangle				

Trapezoid				

6.6 Record your voice **saying the figures** of the **objects**. Use the app to record. **Practice** pronunciation before recording.
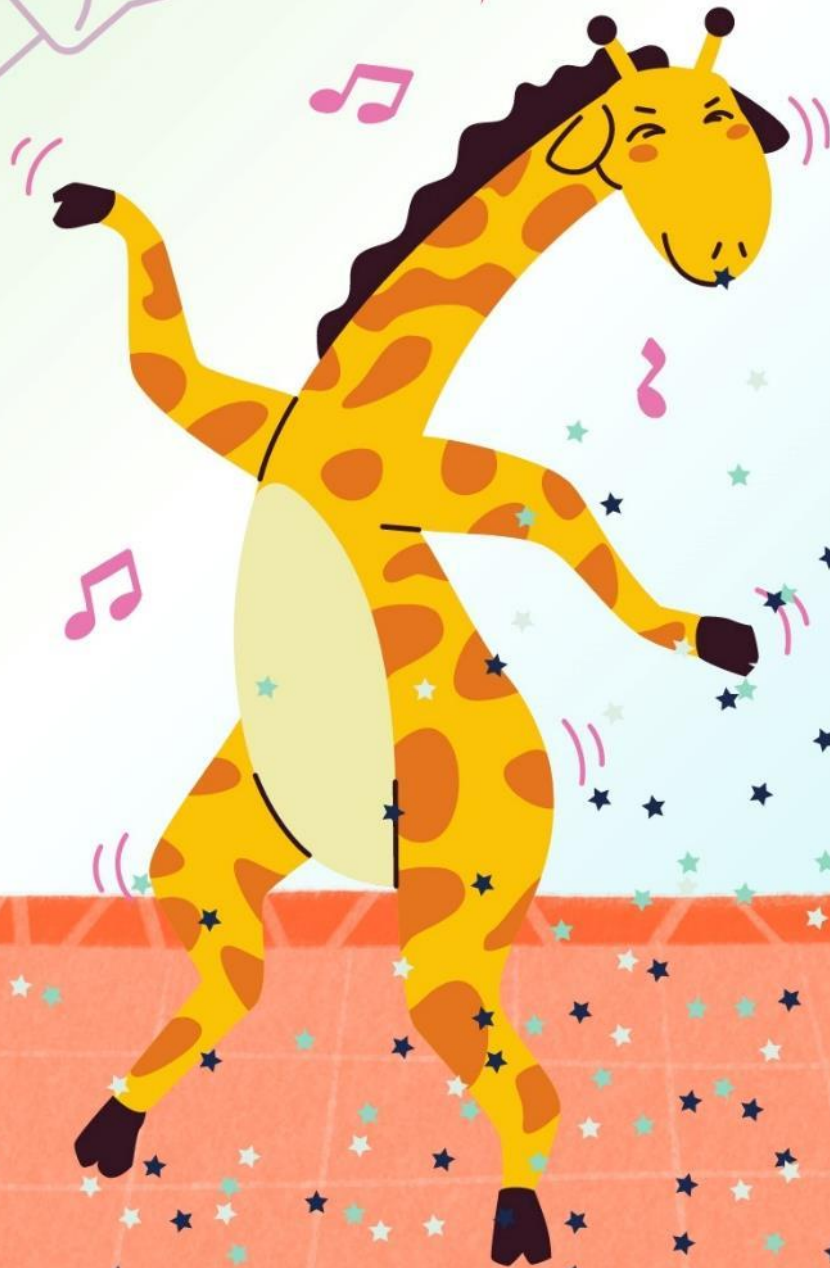
Example

circle

36

VERBS

VERBS

Exercise 7.1 — Open Verbs section

Open Verbs section — Exercise 7.2

Exercise 7.3 — Open camera

"Play Commands" — Exercise 7.4

Exercise 7.5 — Play "Writing the number"

Open Verbs section + Open camera — Exercise 7.6

Exercise 7.7 — Open Verbs section

WARM UP

What do you do before eating an apple?
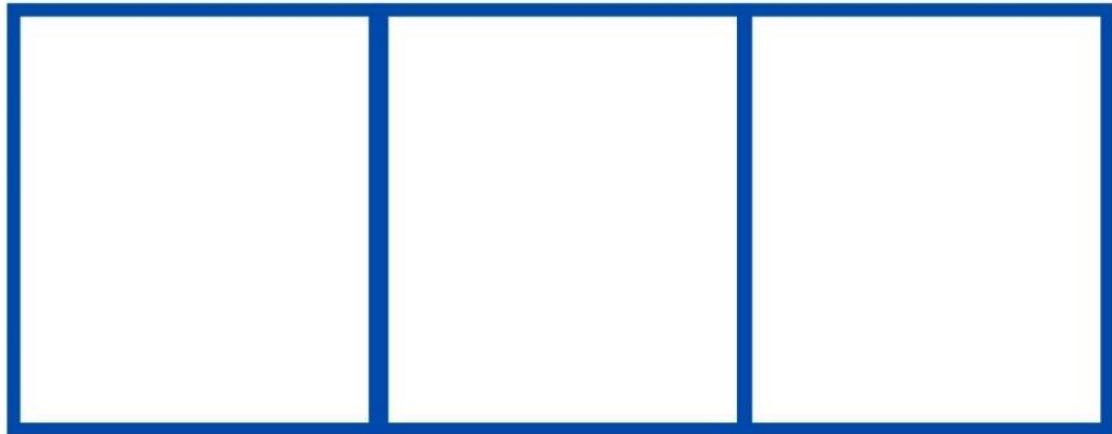
What do you do after you say goodbye to your parents?

What is the child doing?

WORKSHEET I FOR SCHOOL

7.1 Draw yourself, making the verbs' actions.
Open the app in the **VERBS** section to help you.

Eat	Drink	Sleep

7.2 *Working in pairs*. Open the application and go to the **VERBS** section. **Show** your classmate **5 verbs. He/she has** to **imitate** the action!

Stand up

7.3 Find the verbs in the alphabet soup.

Then, **take a picture** using the app. 📷

Eat   Drink   Sleep   Stand up

A	U	I	E	Y	K	T	S
S	L	E	E	P	I	H	T
C	E	D	E	Z	P	B	A
L	B	R	P	L	X	B	N
D	R	I	E	U	X	O	D
H	W	N	A	N	G	S	U
V	I	K	T	D	X	S	P
B	T	G	M	W	L	L	U

WORKSHEET 2 FOR HOME

7.4 Point and **repeat** the **actions** of each picture. **Use** the app to **listen to** the pronunciation of the verbs. Tap on **Play Commands.**

Sit down 1

Stand up 2

Line up 3

4 **Be quiet**

Mineduc/Freepik

7.5 Listen and write the number in the correct place. Use the app to **listen to** the pronunciation of the verbs. **Tap** on **Writing the Number Exercise.**

Freepik

Mineduc/Freepik

41

7.6 Match the picture with the correct verb. Use the app to help you.

Take a picture using the app when you finish ·········>
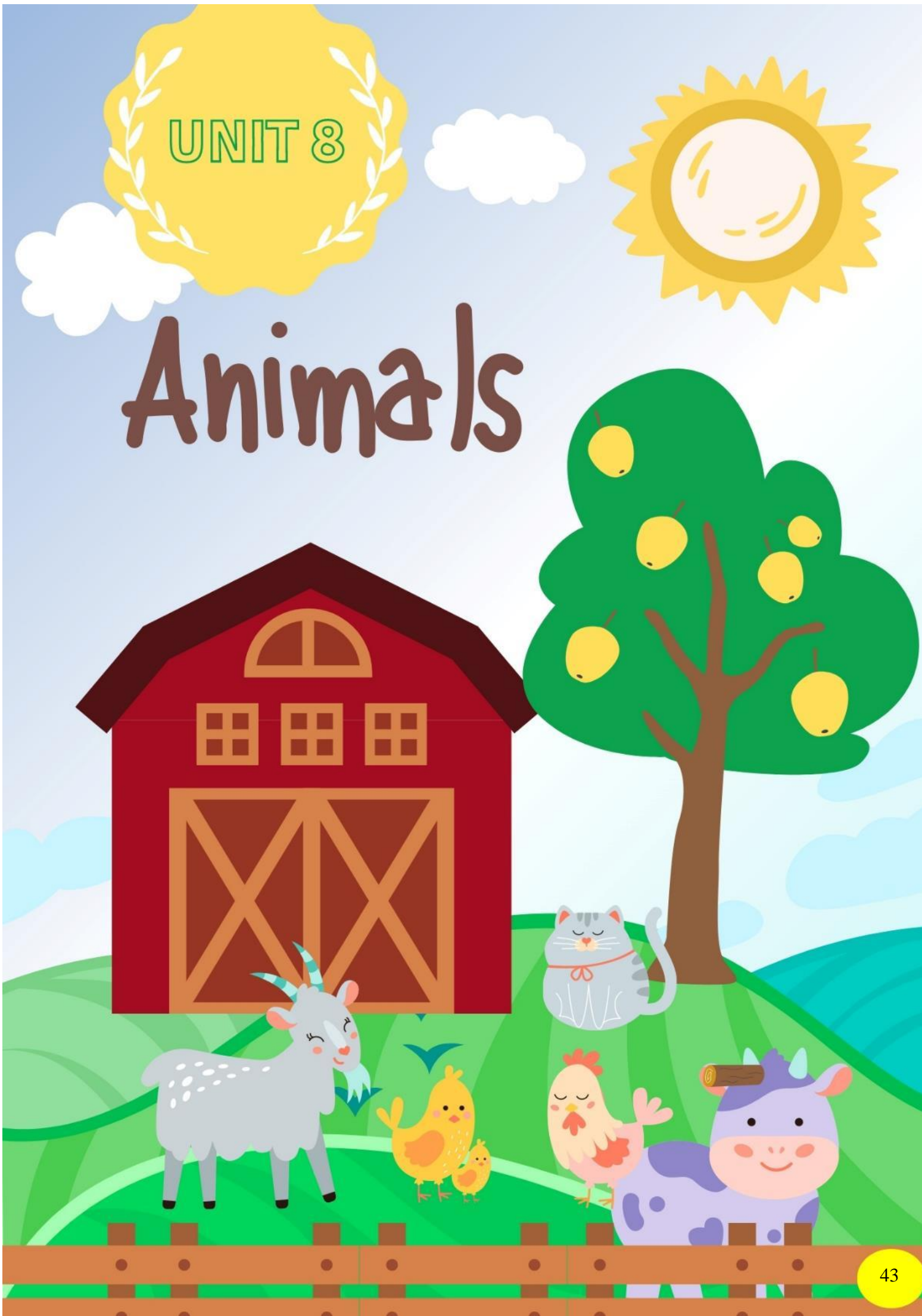

Eat

Read

Jump

Write

Run

Listen

7.7 Point and **repeat** the **actions** of each picture. **Use** the app to **listen to** the pronunciation of the verbs.

It is...
listen

UNIT 8

Animals

ANIMALS

Exercise 8.1 — **Open Animals section + camera**

Open Animals section — Exercise 8.2

Exercise 8.3 — **Open "Crossword Puzzle Activity" + camera**

Open "Helping to David and Ana" — Exercise 8.4

Exercise 8.5 — **Open voice recorder**

WARM UP

Do you have animals in your home?

What is your favorite animal?
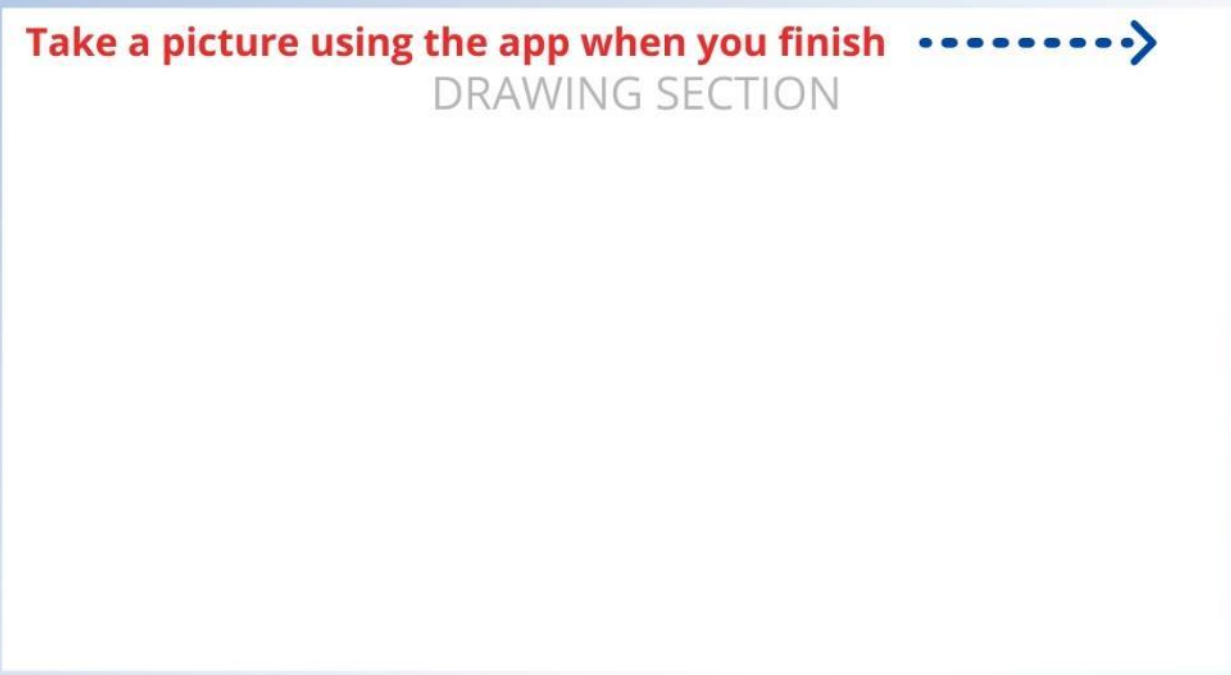
Which animal is in the picture?

WORKSHEET 1 FOR SCHOOL

8.1 Open the app in the **ANIMALS** section. **Choose 2** animals and **draw them** here. **Color** your drawings.

Take a picture using the app when you finish ········>
DRAWING SECTION

8.2 Open the application and go to the **ANIMALS** section. **Listen** and **match** the pictures with the words.

Cat

Cow

Hen

Dog

Chicken

Rabbit

46

WORKSHEET 2 FOR HOME

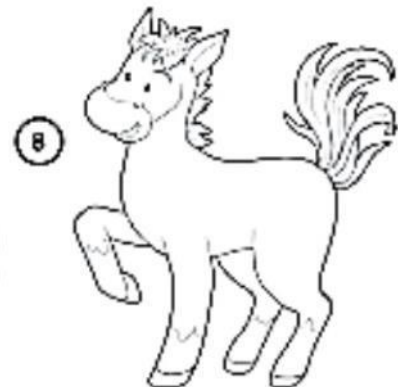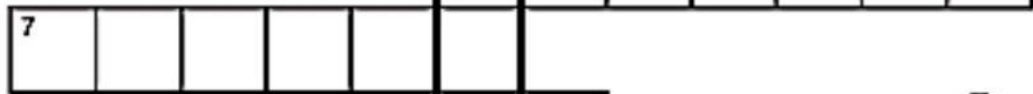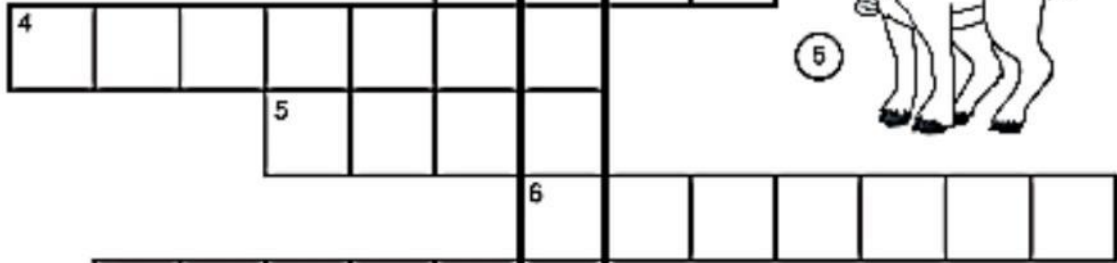**8.3 Open** the app and go to the **ANIMALS** unit. Tap on "**CROSSWORD PUZZLE ACTIVITY**". **Listen** to the name of each animal and complete the crossword puzzle.

Take a picture using the app when you finish ·········>

COLOR THE ANIMALS
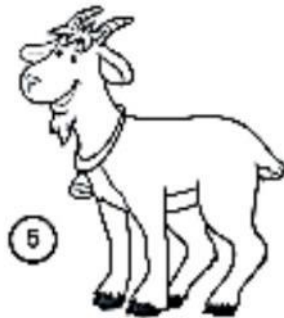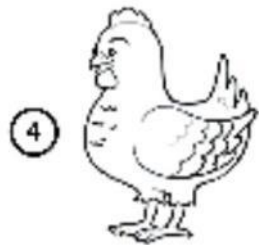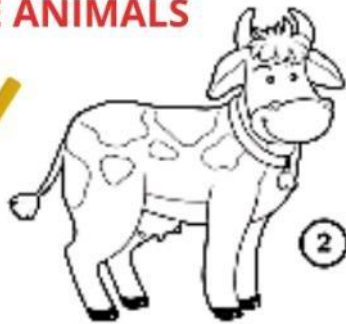
WORKSHEET 2 FOR HOME

8.4 Open the application and **go** to the **ANIMALS** unit. **Tap** on "**HELPING TO DAVID AND ANA**".

Help David and Ana to **match** the **number** in the correct **animal**.

Tap on each **sound**. **Listen** and **put** the **number**.
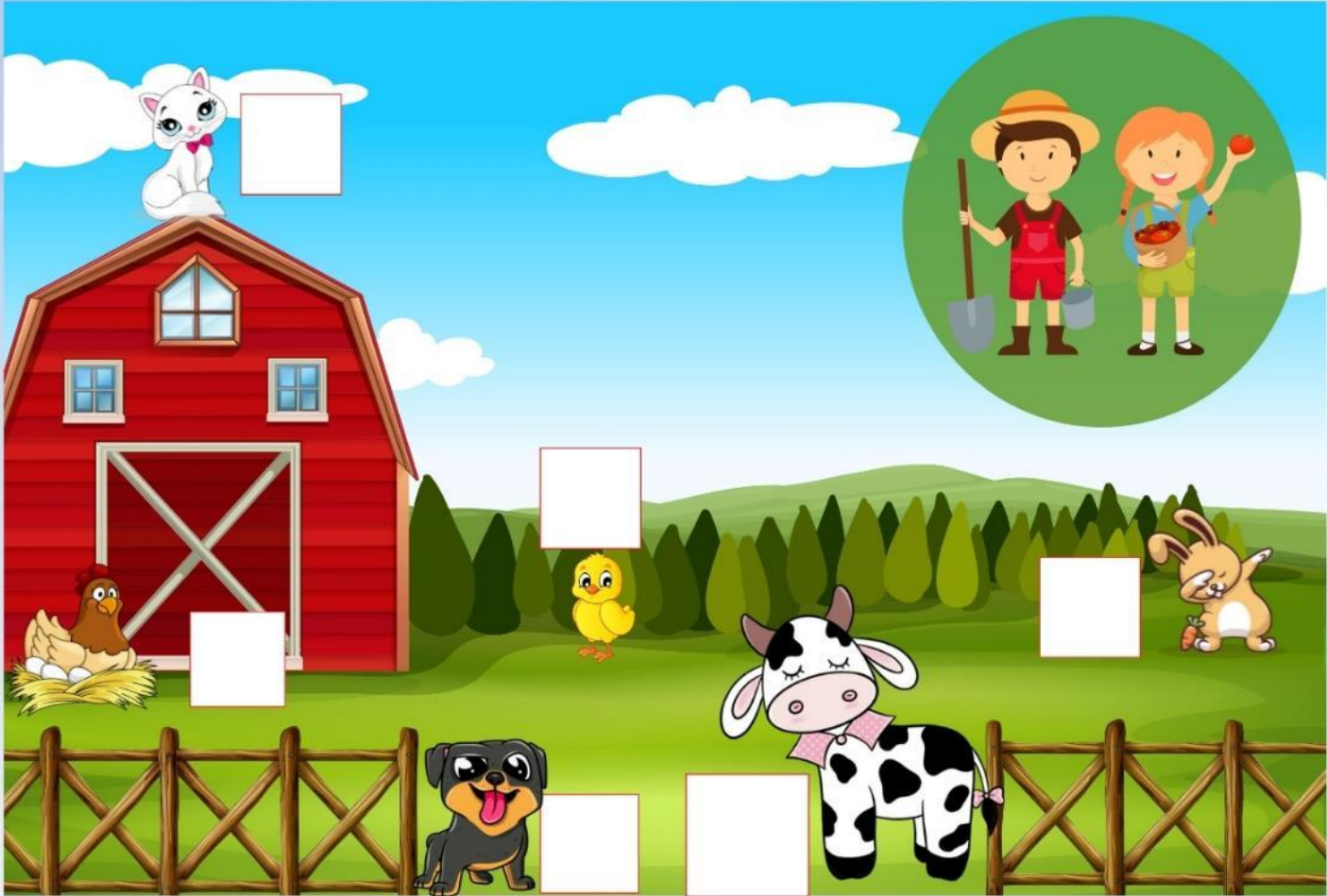
8.5 Find two or three animals.

Record your voice describing.

Use the **app** to record your voice.

Describe:
- **Name**
- **Color**

It is my dog

It is... yellow

Example

UNIT 9

NUMBERS

NUMBERS

EXERCISE NUMBERS AND THE NAME OF THEIR SECTION IN THE APPLICATION.

Exercise 9.1 — **Open Numbers section**

Open "Listening Exercise" — Exercise 9.2

Exercise 9.4 — **Open camera**

Open camera — Exercise 9.5

Exercise 9.6 — **Open camera**

WARM UP

How many fingers does your body have?

How many animals are in your house?

What is the number that looks like a duck?

WORKSHEET 1 FOR SCHOOL

9.1 Open the application and go to the **NUMBERS** section. **Listen** and **match** the numbers with the pronunciation.

one   six

two   seven

three   eight

four   nine

five   ten

9.2 *Working in pairs*. **Open** the application and go to the **NUMBERS** unit. **Tap** on **LISTENING EXERCISE.** **Listen**, **point** and **repeat**.

Student A: How many circles are there?

Student B: There is... There are...

2 two ● ●

3 three ● ● ●

4 four ● ● ● ●

5 five

6 six ● ● ● ● ● ●

8 eight ● ● ● ● ● ● ● ●

9 nine ● ● ● ● ● ● ● ● ●

10 ten ● ● ● ● ● ● ● ● ● ●

1 one ●
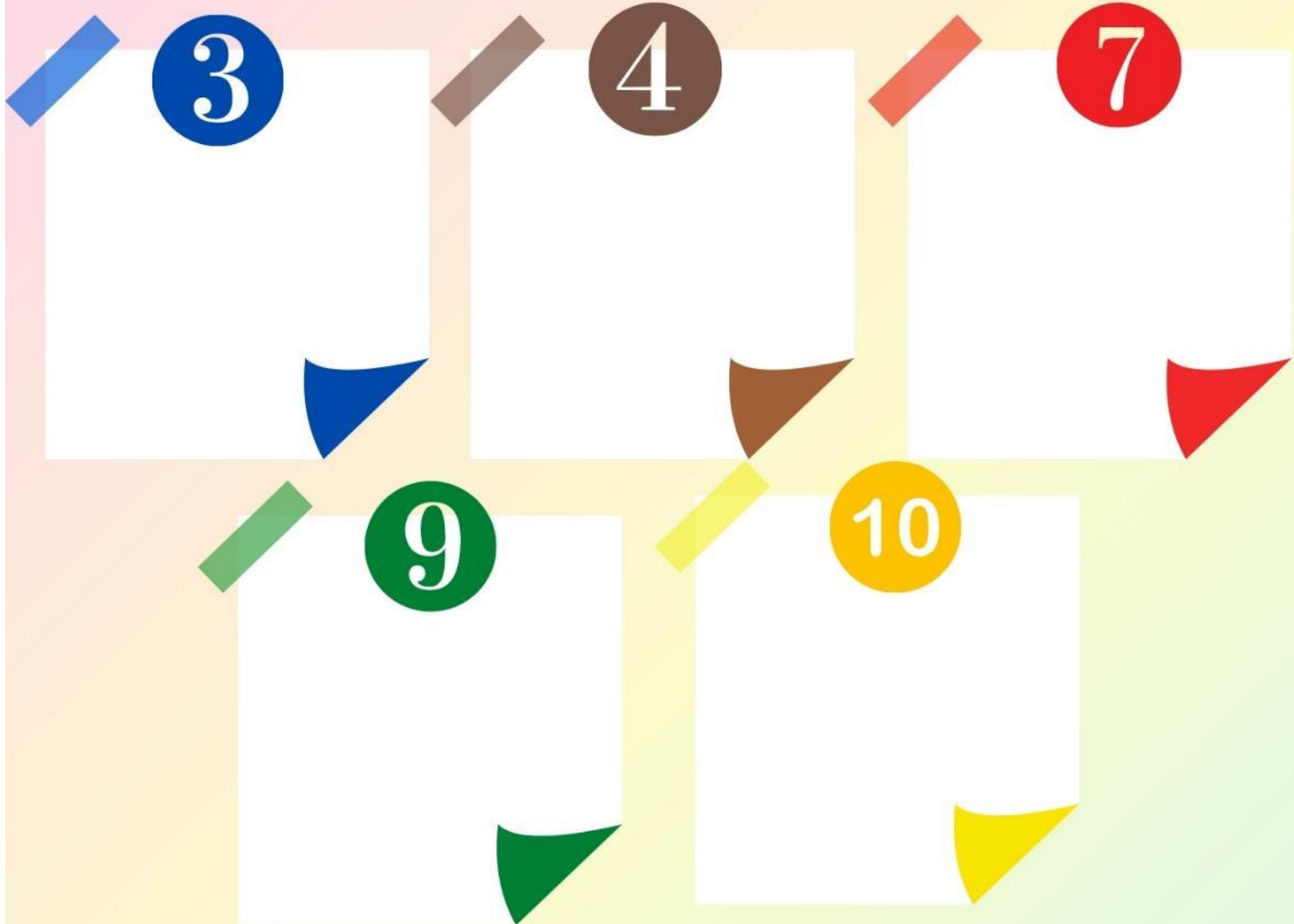
WORKSHEET 2 FOR HOME

9.3 Look at the numbers. **Draw** that many objects. **Open** the application and go to any section you like to search for objects.

3

4

7

9

10

9.4 How many things do you see? **Match** the **picture** with the **number**.

Take a picture using the app when you finish ⸱⸱⸱⸱⸱⸱⸱⸱⸱⸱▷

one

eight

five

two

six
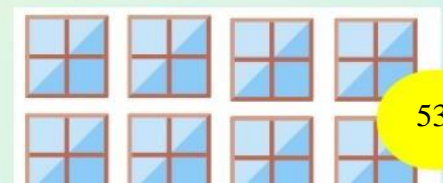
WORSHEET 2 FOR HOME

9.5 Trace the numbers and words, and **say** them.

Take a picture using the app when you finish ·······->

1 one

2 two

3 three

4 four

5 five

6 six

7 seven

8 eight

9 nine

10 ten

Mineduc

9.6 Write down many things you see.

Take a picture using the app when you finish ········->
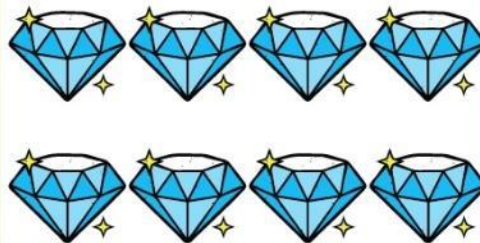
5 CHAPTER V CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

From the analysis of the literature reviewed, it can be concluded that children find it more interactive to use mobile applications in learning English. With these applications, children hear real English words, practice their pronunciation while learning and spelling new words as they try to write them on their device, and, most importantly, communicate in English by talking to friends or other children they meet on these applications.

Both teachers and students at Unidad Educativa San Roque consider adopting mobile applications in the classroom essential for the English teaching and learning process. For the teachers, these turn out to be supportive tools. Meanwhile, for students, apps are novel and eye-catching devices with great relevance in their entertainment.

App Inventor is a transcendent tool for the development of mobile educational applications. Mobile apps, if appropriately designed, can help improve children's language skills. They can help them learn new words, expand their vocabulary and improve their pronunciation.

It must have eye-catching audio-visual content to develop a mobile app for elementary school children. The developed application and worksheets are interactive and attractive, making them a fun way to learn English. In this way, these resources will capture the attention of young learners.

5.2 Recommendations

It is recommended to use mobile applications in teaching and learning English because they can provide an interactive and engaging environment for children to learn, especially for those who are more visual. In addition, with the help of mobile apps, children can easily acquire new English vocabulary and concepts. The use of mobile apps also helps build a solid language foundation. Children can use interactive English activities to practice pronunciation, reading, writing, and speaking skills. In addition, mobile apps can also provide real-time feedback, which can help children adjust their language according to their own learning pace.

It is advisable to encourage English language teachers to use App Inventor to develop interactive mobile apps because of its development facilities. The platform allows for greater customization, so anyone can adjust and modify their apps to make them unique. In addition, App Inventor is easy to use and is free, so there is no need to purchase any additional software or hardware. All these advantages make App Inventor the best choice to introduce

teachers to app development and implement a more motivating educational process for the student.

To elaborate on the didactic resources of a mobile application, the first and most important thing is to ensure that the application is designed with children's needs in mind. This means creating a user-friendly and eye-catching interface that is easy to navigate. A kid-friendly app should also be colorful and attractive, as this will help keep their attention. Besides, ensure the app contains large, easy-to-click buttons, as children sometimes have trouble with smaller buttons. In addition, it is essential to include lots of colorful images and animations to make the application more pleasant and attractive. Finally, it is important to ensure that the application is safe and does not contain any content unsuitable for children. With these parameters in mind, anyone can create a perfect app for children to keep them entertained and engaged.

For educators who want to teach English to primary school children, apps and worksheets are invaluable tools. The apps provide an interactive and engaging learning experience and make it easy for students to practice English in their free time. Worksheets, on the other hand, offer more structure and can help learners learn and review vocabulary. Both apps and worksheets can be tailored to the specific needs of each learner, making it easy to create a personalized learning plan. In addition, these tools can be used to monitor student progress, which can be a great way to gauge their understanding of the material and identify areas where they may need additional help.

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7 ANNEXES

Annex 1. *Applying surveys to students.*
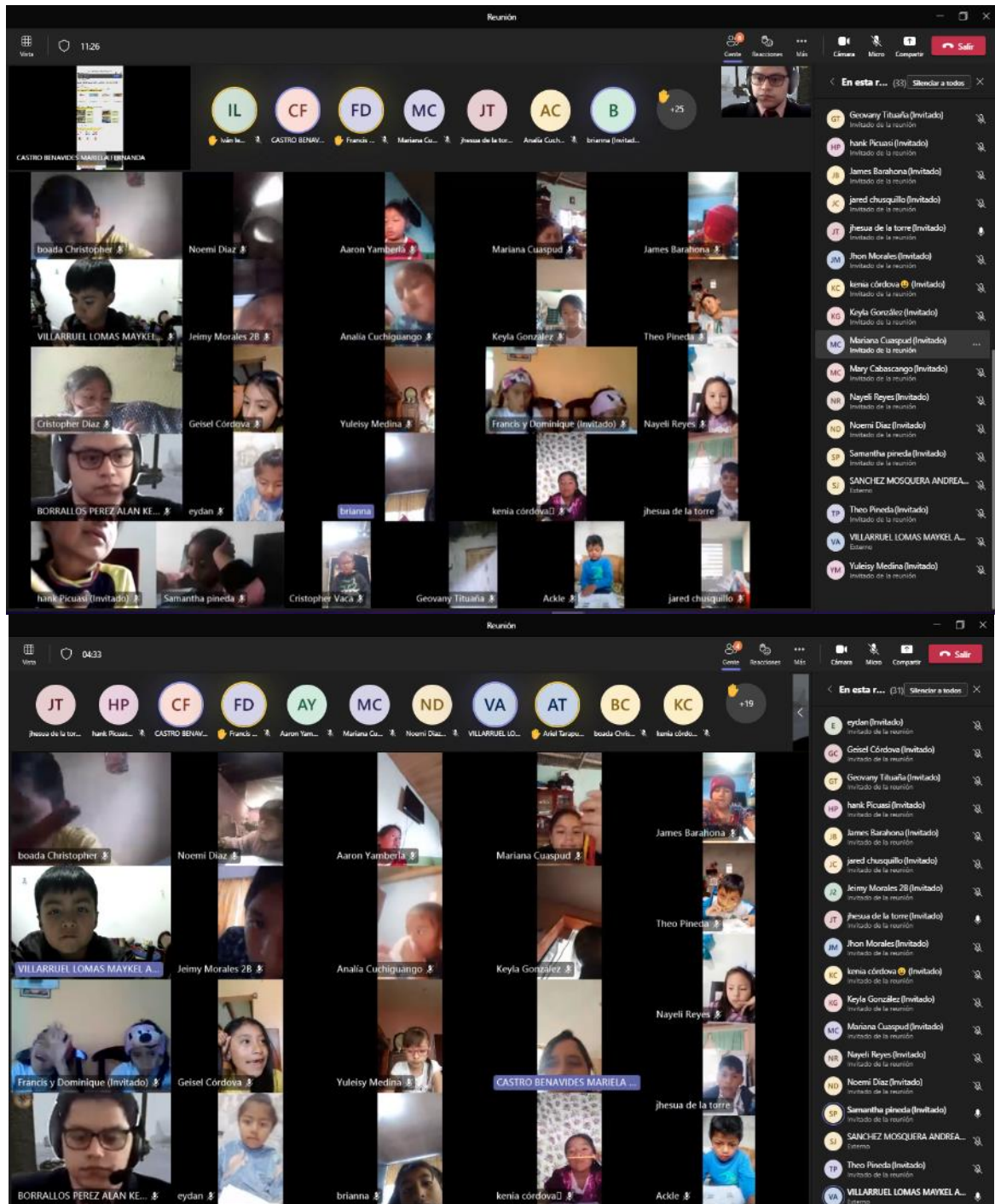
Annex 2. *Teachers' surveys.*

UNIVERSIDAD TECNICA DEL NORTE

Facultad de Educación, Ciencia y Tecnología

STUDENT: BORRALLOS ALAN

DEVELOPMENT A MOBILE APPLICATION AS A DIDACTIC STRATEGY TO
IMPROVE ENGLISH VOCABULARY IN ELEMENTARY SCHOOL STUDENTS

Objetivo:

Recopilar información necesaria sobre la perspectiva del docente con relación a la implementación de aplicaciones móviles como soporte didáctico-estratégico dentro del proceso de aprendizaje académico de los estudiantes de educación básica de la **Unidad Educativa San Roque.**

1. **Seleccione la cantidad de compañeros docentes del área de Inglés que hay en la Institución.**
    a) 1
    b) 2
    c) 3
    d) Más de 3
    e) No se encuentran docentes de inglés en el bloque mencionado.

2. **Según su experiencia, seleccione el nivel de Inglés que poseen los niños de Educación Básica.**
    a) A1 (pre)
    b) A1
    c) A2

    De la selección anterior, ¿cuáles podrían ser las razones de aquel nivel que tienen los estudiantes?
    _____
    _____
    _____

3. **Según su experiencia, determine el tipo de material didáctico que usted considera ha sido el más efectivo para el aprendizaje del idioma inglés en niños de Educación Básica.**

Material didáctico	Nada necesario	Algo necesario	Necesario	Muy necesario
Dispositivos móviles				
Parlantes para escuchar audios				
Libros				

Flashcards				
Material audiovisual				
Enciclopedias				
Proyectores				
Pizarrón acrílico				
Marcadores acrílicos				

4. ¿Existen herramientas tecnológicas para la enseñanza de vocabulario inglés en niños de Educación Básica en su Institución?

Sí ☐   No ☐

En caso de existir mencione cuáles.

_____

_____

5. Seleccione cuán necesario considera usted el implemento de aplicaciones móviles para la enseñanza de vocabulario básico inglés en niños de 2° año de Educación Básica.

No necesario	Algo necesario	Necesario	Muy necesario

6. De la siguiente lista de tópicos, seleccione cuán apropiado considera usted la integración de estos en una aplicación móvil para el aprendizaje del idioma inglés en los niños de 2° año de Educación Básica.

Tópico	Nada apropiado	Algo apropiado	Apropiado	Muy apropiado
Animales				
Colores				
Números				
Objetos de la casa				
Objetos de la escuela				
Abecedario				
Figuras geométricas				
Verbos regulares/ irregulares				

113

7. ¿Qué tipo de estrategias ha utilizado usted como docente para la enseñanza de vocabulario del idioma inglés en los niños de 2° año de Educación Básica? ¿Por qué y cómo las utiliza?

_____

_____

_____

_____

_____

8. ¿Ha utilizado alguna vez aplicaciones móviles para enseñar vocabulario inglés en estudiantes de primaria?
En caso de responder SÍ, mencione con qué frecuencia las has utilizado.
En caso de seleccionar NO, escriba ¿por qué?

Si ☐

Poco frecuente	Frecuente	Muy frecuente

No ☐ _____
_____
_____

9. ¿Estaría dispuesto/a a utilizar una aplicación móvil para la enseñanza del vocabulario inglés en niños de Educación Básica?, ¿por qué?

Si ☐   No ☐

_____

_____

_____

Las respuestas que usted responda en este cuestionario son únicamente con fines educativos y totalmente confidencial. Al completar usted concede voluntariamente formar parte de este estudio.

Annex 3. *Teachers and students' surveys.*

UNIVERSIDAD TECNICA DEL NORTE

Facultad de Educación, Ciencia y Tecnología

DEVELOPMENT A MOBILE APPLICATION AS A DIDACTIC STRATEGY TO IMPROVE ENGLISH VOCABULARY IN ELEMENTARY SCHOOL STUDENTS

Objetivo:

Recopilar información necesaria sobre la perspectiva del estudiante con relación a la implementación de aplicaciones móviles como soporte didáctico-estratégico dentro del proceso de aprendizaje académico de los estudiantes de segundo año de Educación Básica de la **Unidad Educativa San Roque.**

1. ¿Cuánto te gusta el Inglés?

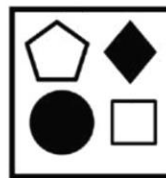## 2. ¿Cómo te gustaría aprender Inglés?
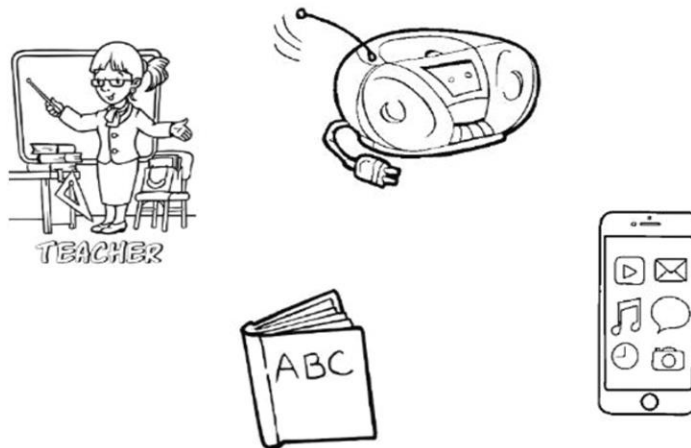
3. ¿Has usado un celular?

4. ¿Para qué has usado un celular?

5. ¿Te gustaría aprender Inglés usando un celular?
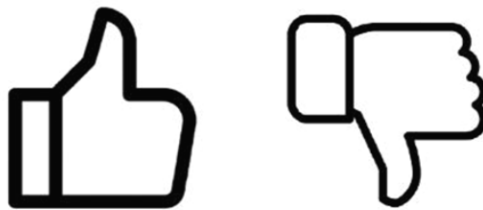
6. Observa cuidadosamente. 👀 Encierra en un círculo los cuadros que más te gusta.

Linkografía de las imágenes:
https://www.scielo.cl/scielo.php?script=sci_arttext&pid=S0717-75182013000400005
https://dibujos-online.com/colorear/smartphone-para-colorear/
https://musica.dibujos.net/radio-cassette.html
https://dibujos-colorear.com/maestra/profesora-feliz/
Canva.com

Annex 4. *Approval document to conduct research at the institution.*

Ministerio de Educación

República del Ecuador

UNIDAD EDUCATIVA SAN ROQUE

San Roque, 11 de julio de 2022

Oficio No 970 – R – UESR.

Magister

José Revelo

DECANO DE LA FECYT DE LA UNIVERSIDAD TECNICA DEL NORTE

De mi consideración:

Me dirijo a usted para emitirle un cordial y atento saludo, deseándole el mayor de los éxitos en sus labores diarias.

Me permito informar a usted que ha sido aprobada la solicitud para que el estudiante Borrallos Pérez Alan Kevin con cédula 1004298228, del octavo nivel de la carrera de Pedagogía de Idiomas Nacionales y Extranjeros de la FECYT, pueda aplicar la encuesta virtual a los estudiantes de segundo de educación básica y docentes del área de inglés de la Unidad Educativa "San Roque" para el día viernes 15 de julio a partir de las 10:30 am.

Agradezco su atención.

HIPOLITO
EUCLIDES BUITRON
DONOSO

Msc. Hipólito Buitrón

RECTOR

Dirección: Av. Amazonas N34-451 y Av. Atahualpa. Código postal: 170507 / Quito-Ecuador
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