

# Boosting English Proficiency in Peruvian Children from 6 to 12 Years Old: Development of an Innovative Hybrid Application

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**Abstract**— The present research work tries to design a hybrid application to learn English in children from 6 to 12 years old where it has 5 modules that are . Home, materials, evaluations, cards and notes (score table). A Design Thinking methodology was implemented since it was considered to be the most appropriate for the development of the research since in each phase it would be detailed what the research would consist of and the necessary requirements to be able to design it. Likewise, a survey was conducted with 30 people to know their opinion on the use of technologies in learning, resulting in a positive way about the implementation of technologies when teaching and learning.

It was concluded that the implementation of a hybrid application would facilitate student learning.

**Keywords**- Hybrid application, Design Thinking, Technology.

## I. INTRODUCTION

English for children from 6 to 12 years old refers to the process of teaching and learning the English language aimed at children in that age range. At this stage, children are in their period of cognitive and linguistic development, which allows them to acquire language skills more quickly and naturally. The English approach focuses on gradual exposure to the language through playful, interactive and communication-based activities. Teaching programmes often use games, songs, stories, pictures and hands-on activities to engage children and maintain their interest. Likewise, learning English has as its main objective to develop basic communication skills, oral comprehension, oral expression, reading and writing, since they teach vocabulary and simple grammatical structures, focusing on everyday situations and topics relevant to children, such as colors, numbers, animals, family, school, among others. [1].

Nowadays it is necessary to learn English, not only because it has become the first language of international communication, but also due to the demands of the competitive labor market. Both to look for new employment opportunities and to improve in the current job, as well as to facilitate communication in various areas, it is essential to have knowledge of this foreign language (LE). Therefore, learning English goes beyond the school environment and encompasses people of all ages. [2].

The significant progress of information and communication technologies (ICT), especially the exponential growth of the Internet, computers and mobile phones, has had a profound impact on society in recent times, generating a new digital culture. It is not only about the emergence of novel devices, but also about the cultural transformation that has emerged through technological innovation. In this context, learning is no exception, as new forms of perception, language and logic have been developed. ICTs have changed the way we

access information and communicate, and this has influenced learning methods and approaches in general. [3].

The use of technology in education has transformed the way students access knowledge and acquire skills. It has emerged as a powerful tool that offers numerous benefits and opportunities to enhance the learning process. Technology allows instant access to a wide range of information and educational resources online. Students are no longer limited to textbooks and physical classrooms, but can explore digital resources, research online, and access up-to-date content from various sources. [4].

Technology provides opportunities for interactive and participatory learning. Students can participate in simulations, educational games, interactive activities, and online discussions. This encourages participation, critical thinking and teamwork. Technological tools facilitate collaboration and communication between students and teachers, even at a distance. Students can work on joint projects, share ideas, collaborate in real time, and receive feedback more efficiently. This encourages teamwork and develops effective communication skills. [5].

In this way, technology enables mobile learning, meaning students can access educational content anytime, anywhere. Educational apps and platforms on mobile devices provide flexibility and portability, allowing students to learn autonomously and adapt to their own study routines and preferences. In addition, technological tools, such as multimedia presentation creation, video editing, and programming, encourage creative expression and innovative thinking in students. They can explore and use different digital tools to present ideas in a visually appealing way and develop digital skills relevant to today's world. [6].

Using digital platforms for educational purposes is an excellent tool for learning English, as it facilitates and makes the study of this language more enjoyable. In today's globalized world, there are numerous learning tools that reinforce the content taught in the classroom. As educators, it is essential to find the best techniques and apply didactic strategies that allow developing the four language skills, especially communicative skills. [7].

The teaching of a foreign language is not limited only to the development of communicative skills in students, but also involves using various active methodologies that fit the needs of students and encourage interaction. These methodologies must be balanced and motivating, with the aim of achieving effective learning of the second language we are studying. [8].

Teaching English through technology can be an effective and motivating way for children from 6 to 12 years old, using mobile applications designed specifically for learning English,

through applications usually offer interactive games, vocabulary activities, pronunciation exercises and monitoring student progress. Also, use educational videos in English that are adapted to the age and level of the children [9].

The main objective of the research is to design a hybrid application that works in 3 ways, from the smart board, the web and a mobile application so that students from 6 to 12 years old can learn English.

The present work is structured as follows, in section number II the review of the literature, in section III the methodology used for the mobile application will be described, in section IV the results obtained are presented and finally in section V the conclusions.

## II. LITERATURE REVIEW

The author [10] se centra fue desarrollar un prototipo funcional de un juego digital que se utilice en la enseñanza del inglés como segundo idioma, siguiendo el enfoque pedagógico del pensamiento complejo. Se analizaron las características digitales del uso de juegos y la estrategia de chatbot en la enseñanza de idiomas extranjeros, y se exploró la viabilidad de utilizar un chatbot como interlocutor en la enseñanza del inglés. Además, se investigó el uso de juegos de rol y chatbots con fines pedagógicos. De esta manera, se progresó en la creación del prototipo funcional utilizando estos recursos.

Also, the author [11], presents in the experience gained through a technology-supported educational intervention, specifically using the Duolingo application as a tool to facilitate English language learning. In addition, it is intended to highlight the importance of new technologies in contemporary educational practices, especially in the teaching of a new language, providing younger students with an easy and entertaining learning approach. The research design adopted is quantitative and exploratory in nature.

Therefore, the author [12], He points out that English teachers are concerned with encouraging students' motivation towards learning a new language. However, they encounter an opposite situation, as students show an unwillingness to learn the language, which may be influenced by their socio-cultural circumstances that do not provide them with sufficient motivation. In addition, they face pressure to comply with pre-established standards in the educational institutions where they work, without taking into account the characteristics and interests of the student community. In her research she presents an experience carried out in a private school in the city of Bogotá, where students had the opportunity to create and organize a garden,

thus managing to communicate through brief writings in English and share their experiences lived in this space.

In this way, the author [13] provides an overview of English language teaching in early childhood education settings in Spain and offers recommendations on good practice. To ensure a successful bilingual education program in primary school, where classes are taught in English, it is crucial that both students and teachers have the necessary tools and skills to address conceptual and linguistic competencies from the beginning. Based on previous research on English language learning, as well as faculty reflections and CLIL (Content and Language Integrated Learning) methodology, and focusing specifically on the Spanish region of Madrid, this article presents the current state of English teaching in primary schools and analyses creative pedagogical strategies and interventions to establish an effective connection between early childhood education and Bilingual primary education. It begins by justifying the importance of early English learning, followed by a description of useful teaching practices to more effectively prepare early childhood education students and help them succeed in bilingual primary education.

The author [14], points out as the main objective of this study is to design playful-pedagogical strategies that promote the teaching of English in the Primary Basic Education of the Eustorgio Colmenares Baptista School Educational Institution. To achieve this, the following specific objectives are proposed: to diagnose the didactic strategies used by teachers in the process of teaching English in the educational institution, to determine the feasibility of using playful-pedagogical strategies to promote the teaching of English in Primary Basic Education, and to propose playful-pedagogical strategies that promote the teaching of English at that educational level. The research approach is based on the quantitative paradigm and is based on the feasible project modality.

The author [15], points out that, in our country, it has been established the obligation to teach English as a first foreign language from Primary Education. In order to provide English classes to those students who do not have access to a teacher in the classroom, the "Ceibal in English" program was implemented. This program uses videoconferencing with a teacher, who may be abroad, and has the support of the teacher in the classroom. However, due to low Internet connectivity in rural areas of the country, the option of videoconferencing classes is not feasible for many rural schools.

### III. METHODOLOGY

Next, we will begin to detail the methodology that will be used for the implementation of the research:

#### A. DESIGN THINKING

The Design Thinking methodology is an approach focused on Addressing complex problems and developing innovative solutions, its phases are as follows:

##### 1) EMPATHIZE

Often when we start learning English, we encounter the challenge of lack of time and difficulty in managing it properly to devote enough time to studying the language. In this way, learning English in children from 6 to 12 years old has pronunciation as a problem since we are facing a language that is not read the same as it is written. English has different sounds and pronunciations than other languages, which can make it difficult for children to reproduce them correctly. It is essential to practice pronunciation from an early age to avoid incorrect habits.

##### 2) DEFINE

One of the main problems that children have for learning English is lacking intrinsic motivation to learn if they do not find relevance or interest in the language. That is why it is important to arouse their curiosity by providing them with a stimulating and attractive environment. Also, the speed and intonation of English can make it difficult for children to understand their hearing. That is why it is necessary to provide them with adequate activities and materials to gradually improve their listening comprehension ability. It is important that children have clear direction and support from teachers and parents to develop language skills.

Structured and personalized teaching can help them overcome obstacles to progress in their English learning.

##### 3) DEVISE

At present, the use of technology in education has been of great help, since it has been observed that children learn satisfactorily when using technological tools. Online learning platforms provide access to a wide range of resources and educational materials in English, such as videos, exercises, audios, and exams. Children can access these resources from anywhere and at any time, allowing them to practice and improve their English autonomously. Taking advantage of the use of technology is that it has been decided to design a hybrid application where its main objective will be that students between the ages of 6 to 12 years can learn English. Also, their teachers can upload educational materials and parents can verify the level of learning of their children.

The hybrid application will have 3 ways of visualizations that will be from a smart board, web and mobile application.

Figure 1 shows the architecture of the system where it will have 3 different users, the main one is the student to whom the hybrid application is directed, the second user is the teachers in charge of teaching the English course, they through the application can upload their educational materials, perform their evaluations and notes, The last user are the parents who will be able to view reports of their children's learning to compare their notes and see their learning progress, this hybrid application will work through the Internet that stores the notes in a database to generate a report that will be viewed by users who request it.

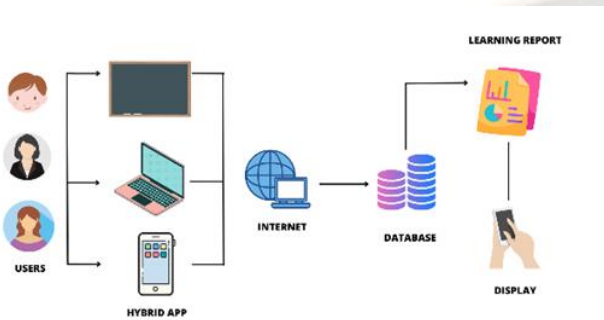


Figure 1. System architecture

4) PROTOTYPE  
A) STUDENT VIEW

Figure 2 shows what would be the name of the hybrid application that has your virtual teacher as its name.

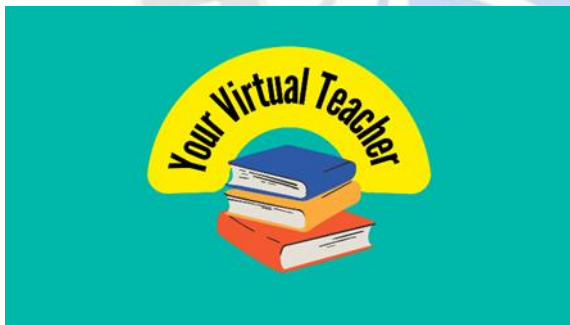


Figure 2. Application Name

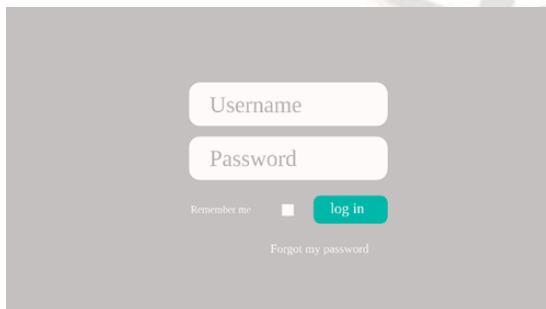


Figure 3. shows the username and password screen.

Students can count on 5 modules that are: beginning, materials, evaluation, cards and notes. In the home tab you are

given a welcome to the platform and an overview of what the course is about as shown in figure 4.



Figure 4 Startup Module

In the materials tab it has 3 modules where the course is developed starting from the basic, intermediate and advanced level, it was considered with the 3 modules since the hybrid application is based on children from 6 to 12 years old and to have a better learning you have to start from the basic level and gradually increase the level through the different activities that will count the different modules as shown in figure 5.

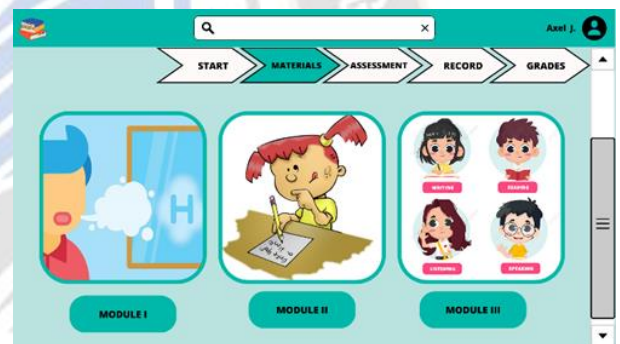


Figure 5 Materials Module

In the evaluation tab you will have the exams that will be developed by the 3 different modules that will have 2 options that are written and oral, each student to complete their evaluation will have to complete the two options as shown in figure 6.

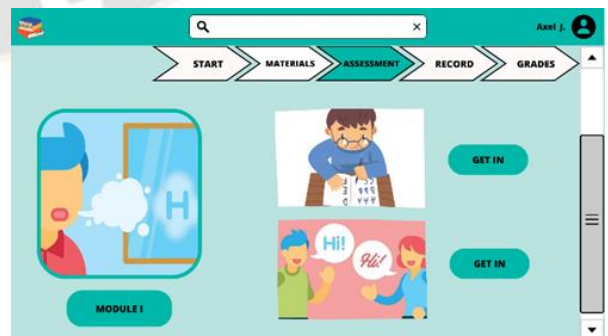


Figure 6 Evaluation module

In the tab of cards the student will be able to access educational sheets that can be downloaded to continue

learning outside the hybrid application, this will allow each student to reinforce their learning of English from home and with the help of the parent as shown in Figure 7.

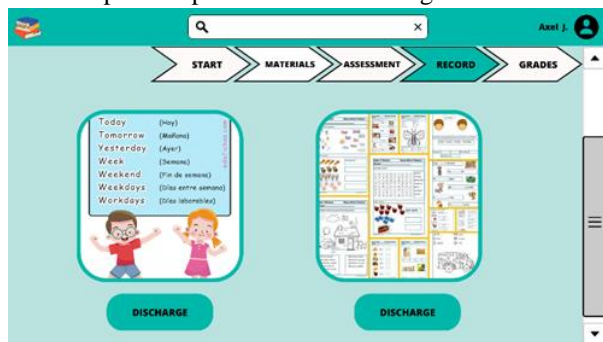


Figure 1 Tab Module

In the notes tab each student will be able to observe their progress from the day they started using the hybrid application this will generate that each student can feel reason for their learning and for the use of the application. In this way, the student will be able to receive motivational messages as shown in figure 8.

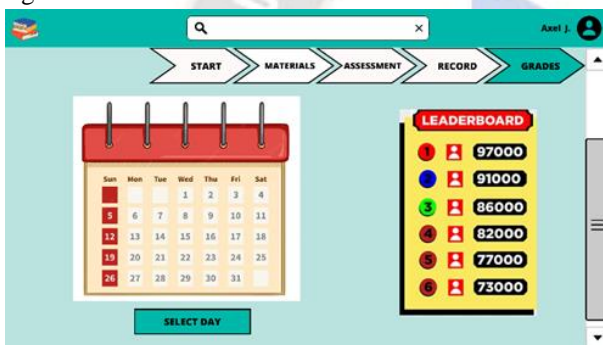


Figure 8 Notes module

### B) TEACHERS VIEW

If the user is a teacher will have 5 tabs that are: home, whiteboard, materials, cards and notes that will have a different use to the student user.

In the initial module will be given a welcome to the teacher and a small explanation about the use of hybrid application as shown in figure 9.



Figure 9 Starting the teacher User

In the whiteboard tab the teacher will be able to share his screen through a smart board and interact with students about

the activities of the English course, which will make students feel attracted and can learn in a didactic way. It was thought that implementing this tab would improve learning since it is a direct connection between students and the teacher in charge of teaching the course as shown in Figure 10.

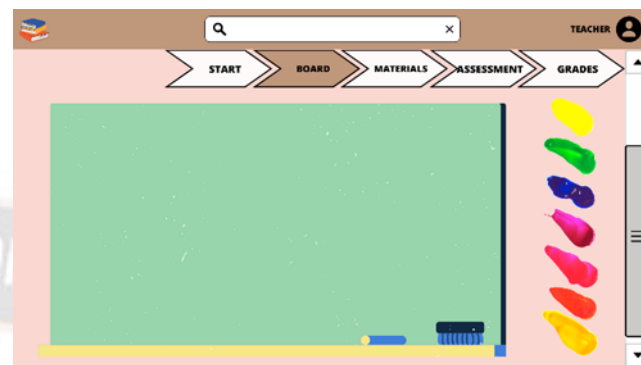


Figure 10 Whiteboard Tab

In the materials tab the teacher will have the 3 modules of the course that can be shared towards the smart board and make the class more didactic achieving a closeness of the students with the technology as shown in Figure 11.



Figure 11 Material Tab

In the tabs the teacher is responsible for uploading the cards that students can download as shown in figure 12.



Figure 12 Records

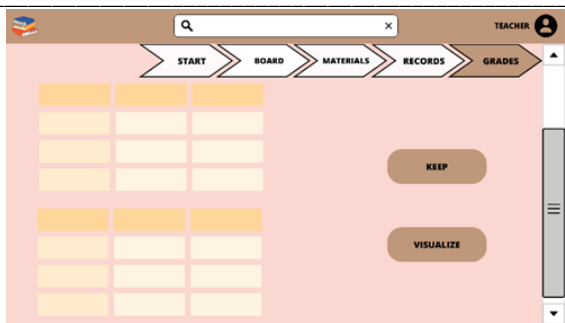


Figure 13. Grades

It was considered to add the notes tab so that the teacher can virtually add the notes of each student and have a better record of their academic progress. The tab will have 2 buttons that are save and view. Once the registration is completed, the teacher will have to press the save button, then the display button will be able to corroborate if the grades have been uploaded correctly as shown in Figure 13.

C) PARENTS VIEW

The parent user can only have 3 tabs that are: home, tabs and notes.

In the home tab the parent will be able to see a small description of the course, teacher in charge, course schedule and a review of what the course consists of as shown in Figure 14.



Figure 14 Parents view

In the tabs the parent can view and download the files uploaded by the teacher in charge of the area so that he can work with his child from the comfort of his home as shown in figure 15.

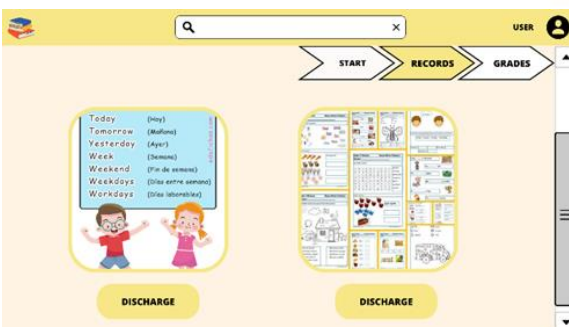


Figure 15. Tab of Tabs

In the notes tab the parent will be able to view and request the student's grade report, will have the options to select the day and month to generate a better report of the notes and see how the student's progress has gone and see if he has responded satisfactorily and has improved his learning through the hybrid application.

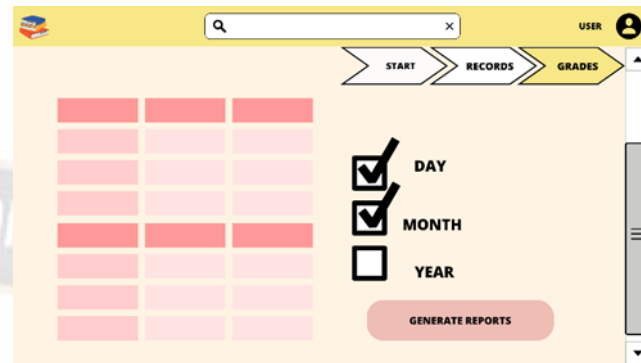


Figure 16. Notes

5) EVALUATE

A survey was conducted to 30 people to know if they agreed that their children or relatives use a hybrid application so that they can learn English and know what the mobile application could have so that it can meet its main objective.

The questions asked were as follows:

- A) Do you think that a hybrid application can teach English to children?

Of the 30 interviewees, 10% pointed out that perhaps while 90% agreed, what gives us to understand is that the implementation of a hybrid application to teach English to primary school children would be accepted correctly. Figure 17 shows the results of the responses.

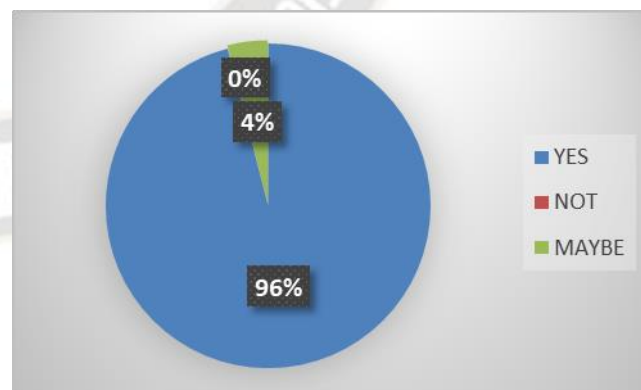


Figure 17. Do you believe that a hybrid application can teach

- B) Should the app offer interactive activities and games to keep children engaged during learning?

The following question was asked to know if users would agree that the hybrid application offers interactive activities and games to attract attention to students where 93.3% agreed and the rest was between no and perhaps in figure 18 the results of the question are observed.

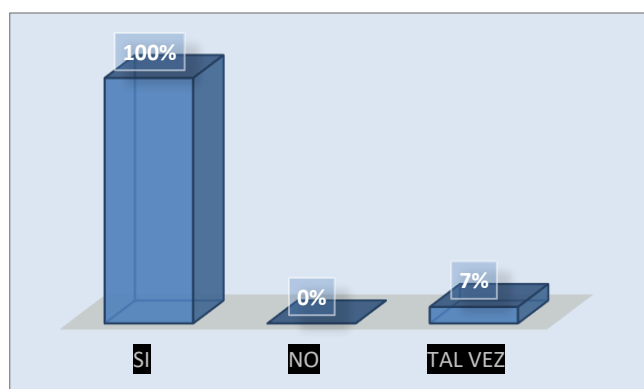


Figure 18. Interactive Activities and Games

- C) Does the app need to include lessons in grammar vocabulary pronunciation and listening?

The question was asked to know the necessary requirements that could have the hybrid application where grammar lessons were considered. Vocabulary, pronunciation and listening comprehension where 93.3% of respondents agreed that the hybrid application has these lessons while 6.7% pointed out that perhaps, in figure 19 the results of the question are observed.

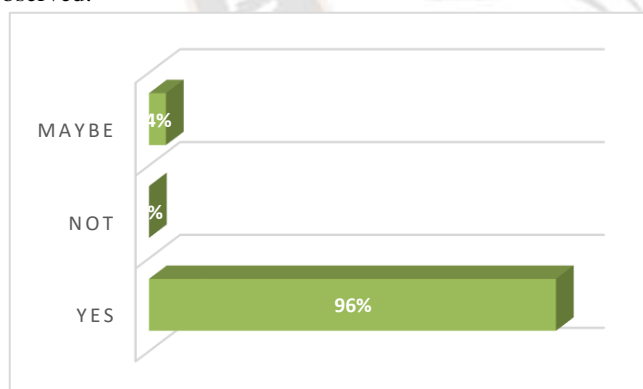


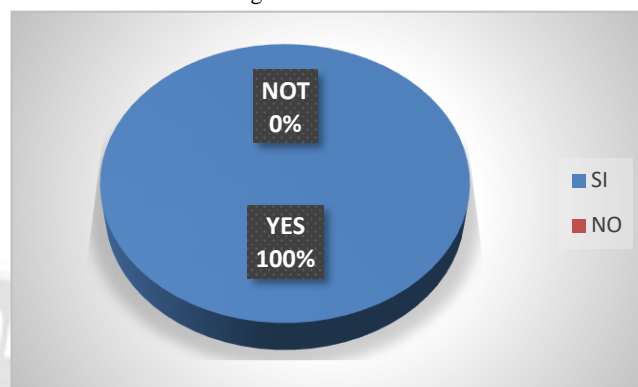
Figure 19. Lessons grammar, vocabulary, pronunciation, listening.

- D) Should the app offer visual and auditory resources to facilitate children's learning?

Visual and auditory resources capture children's attention effectively. Visual elements, such as images, graphics, and videos, allow them to better see and understand concepts. Auditory resources, such as sounds, music, and narration, can make information more interesting and engaging, encouraging children's participation and engagement in the learning

process. 100% of respondents agreed that visual and auditory resources should be offered to facilitate learning.

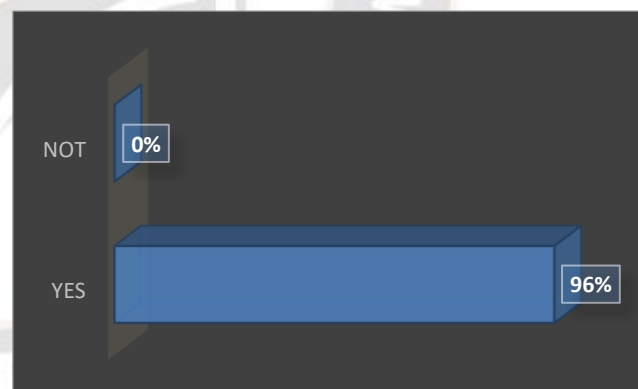
Figure 20. Resources



- E) Do you think is necessary to motivate students with a scorecard so that they can see how their learning has been improving?

The scoreboard can motivate children to participate and use the app on an ongoing basis. By having a friendly competition with themselves or with other users, they will feel incentivized to improve their performance and achieve higher scores. As a result, 100% of respondents agree that a scoreboard should be implemented so that students feel motivated. The results of the question are shown in Figure 21.

Figure 21 Scoring Table



#### IV. DISCUSSION

When designing an application for children to learn English through its use, content adapted to different levels of knowledge of the language must be offered. Also, to maintain the interest and motivation of children, the application can include motivating elements, such as virtual rewards, medals, challenges or friendly competitions. These incentives promote a positive attitude towards learning and encourage continued participation.

The design of a hybrid application to learn English in children from 6 to 12 years old must combine an attractive interface, adapted content, interactive activities, feedback

and motivating elements. By providing fun and effective learning, the app can help children develop English language skills in a progressive and stimulating way.

## V. CONCLUSION

The design of a hybrid application to learn English aimed at children from 6 to 12 years old is a highly beneficial strategy for their linguistic and cognitive development. By combining interactive, educational and playful elements, an engaging and effective learning experience can be created. The hybrid application was designed with a friendly, visually attractive and user-friendly interface for children. Graphic elements, vibrant colors and selected modules were implemented in order to capture their attention and maintain their interest during the learning activities. It was essential to consider that the application offers content adapted to different levels of knowledge of the language, so 3 modules were considered. Also, children from 6 to 12 years old have different skills and linguistic knowledge so the application provides activities and lessons suitable for each age group and level of competence. In this research, the Design Thinking methodology was used since it was considered the most appropriate to describe the different phases to design the hybrid application. As future work, it is recommended to continue implementing and developing applications to improve student learning.

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