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Facultad de la Educación, el Arte y la Comunicación

Carrera de Pedagogía de los Idiomas Nacionales y Extranjeros

ELSA speak application based on artificial intelligence for developing speaking skills, among second-year high school students at a public institution in Loja, during the 2022-2023 school year

Aplicación ELSA speak basada en inteligencia artificial para el desarrollo de habilidades de expresión oral, entre estudiantes de segundo año de secundaria en una institución pública en Loja, durante el año escolar 2022-2023

> **Trabajo de Integración Curricular previo a la obtención del título de Licenciado en Pedagogía del Idioma Inglés.**

AUTOR:

Bernardo Agustin Bustamante Rojas

DIRECTORA:

Ph.D. Marcia Iliana Criollo Vargas Mg. Sc.

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Ph.D. Marcia Iliana Criollo Vargas Mg. Sc.
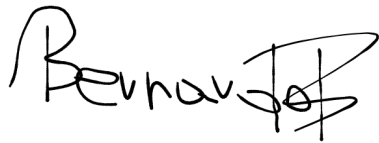**DIRECTORA DEL TRABAJO DE INTEGRACIÓN CURRICULAR**

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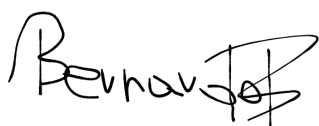
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Firma:

Autor: Bernardo Agustín Bustamante Rojas

Cédula: 1104659576

Dirección: Loja, Av. Reinaldo Espinoza frente UNL

Correo electrónico: bernardoagustin.br@gmail.com

Teléfono: 0988235014

DATOS COMPLEMENTARIOS:

Directora del Trabajo de Integración Curricular: Ph.D. Marcia Iliana Criollo Vargas Mg. Sc.

Dedication

Firstly, I would like to dedicate my research to my dear mother Sandra Rojas and to my beloved father Bernardo Eduardo Bustamante, for giving me the life, for being my source of inspiration, support and guidance throughout my career. Moreover, to my loved sisters Valeria and Maria Rosa who always gave me the strength and heart felt support to complete this phase of my life. Likewise, I would like to dedicate this work to all my friends Iván, César, Daniel, Paulo, Fernando and Valery because they were fundamental for me by giving me happiness, joy, advice and support needed to complete this curricular integration work. In the same way, to my friends and partners during this major journey, Emily Jhuliana, Andrea and Cristian who were there always helping me, and fueled my desire to overcoming any problem during any stage of this research.

Bernardo Agustín Bustamante Rojas

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1. Title

ELSA Speak application based on artificial Intelligence for developing speaking skills, among second-year high school students at a public institution in Loja, during the 2022-2023 school year.

2. Resumen

En el proceso de enseñanza-aprendizaje del idioma inglés, hablar ha sido considerada una habilidad importante para comunicar ideas de manera efectiva, expresar pensamientos y emociones, y conectarse con otros. En este sentido, el principal objetivo del presente trabajo de investigación fue mejorar las habilidades de hablar inglés mediante el uso de la aplicación ELSA speak entre estudiantes de segundo año de secundaria en una institución pública en Loja, durante el año escolar 2022-2023. El método aplicado para el estudio fue un enfoque mixto basado en la investigación-acción práctica, donde el investigador empleó instrumentos de pre-test y post-test para recopilar información numérica y medir las habilidades de hablar de los estudiantes antes y después del plan de intervención. Además, se utilizó un cuestionario para recopilar datos cuantitativos y cualitativos sobre las percepciones de los estudiantes sobre la aplicación ELSA speak para mejorar sus habilidades de hablar. Los resultados indicaron que los estudiantes mejoraron sus habilidades de hablar en cuanto al vocabulario, la gramática, la pronunciación y la fluidez mediante el uso de la aplicación ELSA speak. Por otro lado, los hallazgos también mostraron que los estudiantes estuvieron de acuerdo en que las características de la aplicación ELSA speak, como el entrenador, el analizador de discurso, el buscador de cursos, el diccionario y los conjuntos de estudio, facilitaron el habla del idioma, mantuvieron la motivación, mejoraron las interacciones entre estudiantes, fomentaron la retroalimentación y alentaron las habilidades de hablar, contribuyendo al crecimiento del mismo. Por lo tanto, el investigador concluyó que los estudiantes de segundo año de secundaria percibieron positivamente el uso de la aplicación ELSA speak porque les proporcionó una valiosa ayuda para mejorar sus habilidades de pronunciación, práctica del idioma, motivación y retroalimentación. Asimismo, hubo una gran flexibilidad que les brindó la comodidad de acceder a la aplicación desde su hogar u cualquier ubicación, además de ofrecer una notable variedad de herramientas que les permitieron ser ingeniosos y fluidos.

Palabras clave: *Aplicación ELSA speak, habilidades del habla, Inteligencia Artificial.*

2.1 Abstract

In the English language teaching-learning process, speaking has been considered an important skill to effectively communicate ideas, express thoughts and emotions, and connect with others. In this sense, the main objective of the present research work was to improve English speaking skills by using ELSA speak application among second-year high school students at a public institution in Loja, during the 2022-2023 school year. The method applied for the study was mixed method based on the practical action research, as the researcher employed a pre-test and post-test instruments to collect numerical information and measure students' speaking skills before and after the intervention plan. Additionally, a questionnaire was used to gather quantitative and qualitative data insights on students' perceptions about the ELSA speak application for enhancing their speaking abilities. The results indicated that the students improved their speaking skills regarding to vocabulary, grammar, pronunciation and fluency by using ELSA speak application. On the other hand, the findings also showed that students agreed that ELSA speak application features like coach, speech analyzer, course finder, dictionary and study sets enabled language speaking, sustained motivation, enhanced peer interactions, fostered feedback, and it encouraged speaking skills, contributing growth with students. Therefore, the researcher concluded that second-year high school students positively perceived the use of ELSA speak application because it provided them valuable assistance in improving their pronunciation skills, language practice, motivation and feedback. Likewise, an abundance of flexibility, granting them the convenience of accessing the application from home or any location, as well as offered a commendable array of tools that empowered them to be resourceful and fluent.

Keywords: ELSA speak application, Speaking skills, Artificial Intelligence.

3. Introduction

The Ministry of Education in Ecuador is striving to elevate the English language proficiency of its students. They have developed the National Curriculum for English as a Foreign Language, which aligns with the levels set forth by the Common European Framework of Reference in languages. Despite these efforts, students are still facing challenges in their speaking abilities. This includes difficulties in effectively conveying their message, expressing themselves fluently, and correctly pronouncing and understanding spoken language. These challenges stem from speaking with a big fear of making mistakes in the classroom, to lack of emphasis on self-directed language learning. Enhancing speaking skills is crucial, as it includes not only the ability to communicate effectively, but also the ability to pronounce words clearly, use proper intonation, and have a natural flow in speech (Leong et al., 2017). In addition, students must be encouraged to practice speaking in real-life scenarios, to overcome their fear and to improve their speaking skills, especially at a B1 level and in a more natural and authentic way.

However, the pre-service teacher observed that second year high school students did not reach the B1 proficiency level in speaking skills, which was supported by other researchers who also found that their students were not able to produce and involve themselves to speaking activities due to fear of making mistakes, lack of confidence and motivation, ineffective traditional methods or being judged by their peers (MacIntyre and Noels, 1996; Gardner & MacIntyre ,1992; Krashen, 1985). Based on these problems, ELSA speak application was seen as a suitable solution that motivated the researcher to formulate the following research questions: How does ELSA speak application enhance speaking skills among second-year high school students at a public institution in Loja, during the 2022-2023 year? This question included two sub-questions: what is the effectiveness of artificial intelligence-based applications to enhance speaking skills among second-year high school students at a public institution in Loja, during the 2022-2023 school year?; and what are the students' perceptions about ELSA speak Application features that help to enhance speaking skills among second-year high school students at a public institution in Loja, during the school year 2022-2023?

Previous studies have demonstrated the importance of using ELSA speak application to improve the students´ speaking skills and learn the English language through its artificial intelligence-based assistance (Kholis, 2021; Lesmana, 2022). At the same time, other researchers have found that ELSA speak application helps user to acquire vocabulary, pronunciation, grammar and fluency (Aswaty & Indari, 2022). Likewise, provide students with

an intrinsic motivation to develop their speaking skills through a motivational and heartening learning environment (Fakdawer, 2020).

In spite of that, past studies carried out by Lesmana (2022) presented a deficiency since the author used a few ELSA speak features to improve their students´ speaking skills. Hence, the author proposed an exploratory approach, advocating for enhanced creativity in the implementation of the ELSA speak application. This recommendation seeks to optimize the usage of the application's weekly updates and daily integration of new artificial intelligence-driven techniques during the speaking process. The overarching goal is to ascertain a deeper understanding of the historical effectiveness of the ELSA speak application over time. In that regard, the present research filled this gap by including the complete set of ELSA speak features like coach, study sets, dictionary, course finder and speech analyzer to develop second-year high school students' speaking skills.

The main purpose of this research was to improve speaking skills by using ELSA speak application among second-year high school students at a public school in Loja during the school year 2022-2023. From this aim, the researcher included two specific objectives which were to validate the effectiveness of ELSA speak application to enhance speaking skills among second-year high school students at a public institution in Loja, during the 2022-2023 year and to identify the student's perceptions about ELSA speak application features that help to enhance speaking skills among second-year high school students at a public institution in Loja, during the 2022-2023 school year.

This study contributed to the educational field for many reasons. Firstly, it showed teachers the benefits of using ELSA speak application to improve their students' speaking skills. Secondly, it provided the audience with an overview of the impact of this artificial intelligence-based application on the English language learning process. Finally, it allowed second-year high school students to experience a potent helping hand in the language learning journey, equipping students with the tools needed to enhance pronunciation, vocabulary, grammar and overall communication skills in a dynamic, fluent and engaging way.

<div align="center">**4. Theoretical framework**</div>

In the upcoming section, we will expound on the theoretical underpinnings acquired from various authors and primary references, relevant to both independent and dependent variables. Additionally, this literature analysis will make a valuable contribution to the field of education by providing insights into enhancing Speaking skills using genuine resources and technology.

4.1. Artificial Intelligence

4.1.1. Definition

Artificial intelligence (AI) is a broad field of study that includes a wide range of subfields and applications. Different authors have offered different definitions of AI, depending on their perspective and focus.

One definition of AI is provided by the father of AI. McCarthy (2007) defines AI as "the science and engineering of making intelligent machines" (p. 22). This definition emphasizes the goal of creating machines that can perform tasks that normally require human intelligence, such as understanding natural language, recognizing objects, and making decisions.

Artificial intelligence aims to improve learning, thinking, and perception using computers, AI is now applied in a variety of sectors, including banking, healthcare and educational purposes like it is the intent of this project. "Strong AI" handles jobs that are more sophisticated and human-like, whereas "weak AI" often focuses on simple, single tasks. According to Mohammed and Saleh (2018) "It involves developing computer programs to complete tasks which would otherwise require human intelligence" (p. 3).

4.1.2. Artificial Intelligence in Education

Artificial intelligence (AI) has the potential to address some of the major issues facing education today, revolutionize methods of teaching and learning, and enhance the achievement of the Sustainable Development Goals. Hew (2018) points out that "Artificial Intelligence in Education is the use of computers and related technologies to simulate human intelligence, particularly in the fields of education and training" (p. 1).

Artificial intelligence (AI) has the potential to revolutionize education by personalizing learning, increasing efficiency and effectiveness, and enhancing the learner experience. Dimililer and Tuncal (2019) stated that artificial intelligence could help teachers improve

personalized education for their students. These tools may also give students assistance and feedback in real-time, enabling a more customized learning environment. However, as we embrace AI in education, it is crucial to strike a balance and ensure that technology enhances, rather than replaces, the role of teachers. While Artificial Intelligence can offer valuable insights and support, human educators bring essential qualities such as empathy, creativity, and emotional connection that are integral to effective teaching and fostering a positive learning atmosphere.

Kang (2017) outlines that "AI can also be used to enhance the learner experience, for example through the use of virtual tutors or assistants" (p. 215). The concept of virtual tutors or assistants powered by Artificial Intelligence brings several advantages to the learning process. Moreover, the availability of virtual tutors or assistants on-demand allows students to access help and support whenever they need it. This aspect of 24/7 availability ensures that learners can receive immediate assistance and feedback, promoting continuous learning and avoiding delays in resolving doubts or challenges.

In conclusion, the potential of Artificial Intelligence in enhancing the learner experience through virtual tutors or assistants is indeed exciting. As the technology continues to evolve, finding the right blend of Artificial Intelligence and human interaction will be key to maximizing the benefits and creating a well-rounded and effective education system.

4.1.3. Roles of Artificial Intelligence in Education.

This section explores the multifaceted roles of Artificial Intelligence in education, digging into how Artificial Intelligence-driven applications can improve personalized learning, provide real-time assistance, and create a more dynamic and adaptive learning environment. By examining the potential benefits and challenges of integrating AI in education, we aim to shed light on how these technologies can shape the future of learning and pave the way for a more inclusive and effective educational system.

4.1.3.1. Additional Support with Artificial based Intelligence Tutor. Although professors at institutions have set hours, it is evident that they cannot be with students at all times when they are studying. However, since no student is intelligent enough to comprehend everything at once, the Artificial Intelligence tutors can offer this further assistance (Artificial Intelligence in Education - Javatpoint, 2022).

Students can grasp the fundamentals using these Artificial intelligence systems, but they are not appropriate for learning advanced ideas in any field. Students still need a professor in order to master such difficult subjects. But in the future, it's likely that Artificial Intelligence may be able to assist students with more difficult issues that call for critical analysis and reasoning.

4.1.3.2. Automation of administrative tasks. According to Hew (2018) "AI can be used to automate tasks such as grading and record-keeping, freeing up teachers to focus on more high-level tasks such as lesson planning and student engagement" (p. 1). Allows the student to receive the appropriate assistance, and academics may identify the areas of their instruction that need to be improved. Students who receive immediate feedback are better able to identify their mistakes and improve. This includes tasks like grading, scheduling, attendance tracking, and data management. By automating these tasks, AI frees up valuable time and resources, allowing educators to focus more on teaching, student support, and creating engaging learning experiences. This efficiency leads to smoother operations within educational institutions, enhancing productivity and enabling educators to dedicate more attention to their students' individual needs.

4.1.3.3. Personalized learning. Teachers may create a personalized study plan for each student by first knowing their needs. As artificial intelligence continues to progress, it's likely that machines could soon be able to read students' facial expressions as they learn topics, determine whether they are having any trouble understanding them, and modify their teaching methods accordingly. Artificial Intelligence can deliver customized learning experiences and content, ensuring that students receive targeted instruction and support. This personalized approach enhances student engagement, motivation, and comprehension, ultimately leading to more effective and efficient learning outcomes.

4.1.3.4. Enhancing the learner experience. There will be new methods of communicating with such pupils as a result of the implementation of Artificial Intelligence. It is possible to effectively train AI-enabled tools to assist a group of students with even specific needs. Additionally, students may access top-notch materials and courses from around the globe at their location alone without leaving their home. Kang (2017) remarks that "Artificial Intelligence tools, such as virtual tutors or assistants, can provide personalized support and feedback to students, helping them to stay motivated and engaged in their learning" (p.33). With the assistance of universal access, each student may learn wherever they are and whenever

they choose. Despite having to wait for the instructor, students may study topics anytime they wish to learn more.

4.1.3.5. Data analysis. Artificial Intelligence can be used to analyze large amounts of data related to student performance, learning styles, and other factors, providing insights and recommendations for improvement (Russell & Norvig, 2010). This deeper understanding of each student's unique learning style could lead to more personalized and effective teaching approaches. Moreover, Artificial Intelligence-driven analysis can help identify patterns and trends that might not be immediately apparent to human educators, allowing for more informed decision-making to improve overall learning outcomes.

4.1.3.6. Predictive analytics. AI can be used to predict student outcomes and identify at-risk students, allowing for early intervention and personalized support (Sutton & Barto, 2018). By means of predictions the system will produce new content and knowledge for the user, through this the time and user experience become more dynamic, making the most of the time of use of the application, since in certain occasions it can be limited or it can end when the user loses interest in it.

4.1.4. Benefits of Artificial Intelligence-based Applications in EFL Classroom

In recent years, the application of artificial intelligence in educational settings, particularly in English as a Foreign Language (EFL) classrooms, has accumulated significant attention. This section explores briefly the benefits of integrating Artificial Intelligence in the EFL classroom.

4.1.4.1. Adaptive learning systems. Adaptive learning systems in artificial intelligence (AI) refer to educational platforms or software that use Artificial Intelligence algorithms to personalize the learning experience for individual students. These systems are designed to adapt to each student's unique needs, learning style, and proficiency level, making them particularly beneficial in English as a Foreign Language (EFL) classrooms.

4.1.4.2. Virtual tutors or assistants. Artificial Intelligence is used to create virtual tutors and assistants (Adair, 2023). These Artificial Intelligence based tools act as digital mentors, offering assistance, answering questions, and delivering instructional content tailored to each student's specific needs and learning pace.

4.1.4.3. Speech recognition software. Speech recognition software in artificial intelligence refers to technology that can convert spoken language into written text. In English

as a Foreign Language (EFL) classrooms, speech recognition software serves as a powerful tool to aid language learning and communication skills.

4.1.4.4. Translation software. An Artificial Intelligence-powered translation software can be used to help students understand and translate texts and other materials in the target language (Russell & Norvig, 2010). These applications enable language learners to easily comprehend and communicate in English, bridging language barriers and facilitating effective communication with native English speakers. By providing quick and accurate translations, Artificial Intelligence-based translation software enhances language learning experiences, making it more accessible and engaging for students with different language backgrounds.

4.1.4.5. Language learning games. Artificial Intelligence can be used to create interactive language learning games and activities that adapt to the individual needs and progress of students (Sutton & Barto, 2018). These games offer fun and interactive learning experiences, encouraging active participation and motivating students to improve their language proficiency. Incorporating language learning games in the EFL classroom helps create a dynamic and enjoyable learning environment, fostering student engagement and retention of language concepts.

Since Artificial Intelligence already offers customized instruction, it's possible that pupils may be able to study without the aid of a human teacher.

Cope and Ward (2002) stated that "Teachers' perceptions are one crucial aspect to consider when integrating technology into education as they could affect the quality of students' learning outcomes" (p. 67-74). When educators embrace technology with a positive outlook and a willingness to adapt their teaching methods, it creates an environment conducive to effective technology integration. Teachers who feel confident and enthusiastic about using technology are more likely to explore its full potential, experiment with innovative teaching strategies, and leverage digital tools to enhance the learning experience. Recognizing the pivotal role of teachers in technology integration and addressing their perceptions thoughtfully can lead to a more successful and transformative educational experience for students. For those reasons, the following sections presents the advantages which belong exclusively to the pedagogues and learners:

4.1.4.6. For Teachers. For teachers, Artificial Intelligence-based applications can provide valuable data on student progress and performance. For example, an AI-based application can track a student's progress over time and provide feedback to the teacher on

areas of improvement. This can be particularly useful for teachers who have large class sizes and may not be able to provide individualized feedback to each student. Additionally, AI-based applications can provide teachers with valuable insights into the language learning process, which can help them to adapt their teaching methods to better suit the needs of their students.

It could change the role of teachers. In the field of education, the role and responsibilities of teachers might evolve due to advancements in intelligent computing systems, but their presence will continue to be essential. Neha (2020) outlines that "AI can take over tasks like grading, can help students improve learning, and should even be a substitute for real-world tutoring" (p. 307).

4.1.4.7. For Students. Students must be able to participate actively in class and must not be intimidated or ashamed to speak English, especially while studying pronunciation. For them to develop their pronunciation while they are studying, they must feel comfortable speaking English to their teacher and friends.

4.1.4.7.1. Increased efficiency, effectiveness and less stress. Artificial Intelligence-based applications can automate tasks such as grading and record-keeping, freeing up teachers to focus on more high-level tasks such as lesson planning and student engagement (Hew, 2018). Virtual assistants can help students overcome their misgivings while using traditional learning techniques that require them to ask questions in front of the entire class. These virtual assistants cannot, however, provide accurate answers to all queries. However, for simple questions, they may be quite beneficial in boosting each learner's confidence and relieving stress.

4.1.4.7.2. Flexibility. Students may study anywhere, at any time, using AI-driven digital learning. Instead of being tied to a single location, each learner is free to create their own schedule. AI has enhanced the efficiency of various administrative tasks that would otherwise consume a significant amount of students' time if done without AI (Kumar, 2021). This flexibility promotes more engaging and effective language learning.

4.1.4.7.3. Enhanced learner motivation and engagement. Refers to the increased interest, enthusiasm, and active participation of students due to personalized learning, interactive elements, real-time feedback, gamification, and flexible access to language materials provided by AI technologies. These features keep students motivated, leading to a more immersive and enjoyable language learning experience.

4.1.5. Artificial Intelligence Promotes Learner Autonomy

According to Benson (2013), speaking learner autonomy is defined as "the ability of the learner to take charge of their own learning, to set goals, plan, monitor and evaluate their progress, and make decisions about how to achieve their goals" (p.2). This definition denotes the active role of the learner in the learning process, and highlights the importance of self-direction and self-regulation in developing speaking autonomy. Autonomous learners understand their learning aim, are explicitly responsible for their learning, and set the goals. However, it is impossible to escape the difficulties that come with being an independent learner. In contrast, Little (2015) defines speaking learner autonomy as "the degree to which learners are able to take responsibility for their own language learning and to use their own resources to achieve their goals" (p. 15). Clearly, remarks and focuses on the learner's ability to use their own resources, such as their background knowledge and motivation, to achieve their language learning goals.

Furthermore, speaking learner autonomy refers to the ability of the learner to take responsibility for their own learning, to direct their own learning, to be able to reflect on their own learning, and to have ownership of their own learning Skehan (2021). This definition highlights the importance of self-direction, self-regulation, and self-reflection in developing speaking autonomy.

AI-based applications can provide recommendations and options to students, allowing them to make their own decisions about their learning and giving them greater control over the learning process.

Lin and Huang (2013) found that "AI-assisted language learning (AALL) systems can improve learners' autonomy by providing them with personalized feedback and guidance" (p. 361-376). The study found that learners who used an AALL system were more likely to take control of their own learning and to set goals for themselves. Additionally, the system provided learners with the opportunity to correct their own errors, which helped them to become more aware of their own learning needs.

4.1.6. ELSA Speak

4.1.6.1. Introduction. Such software is made to help users with particular tasks, which might be connected to communication, creativity, or productivity. In terms of learning English, there are a ton of technologies or application software that can be downloaded on the internet. ELSA Speak, represents the only tool for teaching and communicating in English that uses

artificial intelligence to assist correct syllable-by-syllable pronunciation mistakes. includes a speech recognition system that ranks among the top 5 in the world. Because it directs learners to subjects and abilities, levels, reports, and other features, ELSA's basic interface is intuitive.

4.1.6.2. Definition. ELSA Speak (English Language Speech Assistant) is a mobile application designed to help users improve their English pronunciation. According to Nushi and Sadeghi, (2021) "ELSA is an EFL/ESL pronunciation development application designed based on United States English, with over 1200 exercises to help learners sound like native speakers" (p. 289). This argument points up the application's use of game-like features, such as interactive exercises, to make the learning experience more engaging for users.

Marjun and Sa'adah, (2022) defines ELSA speak as "an English pronunciation application that helps people speak English confidently and clearly. The most accurate and useful test people can take to discover their English-speaking proficiency level" (p. 42). This definition clearly denotes a more detailed, precise and conducive to the acquisition of fluent conversational and speaking skills, with the ELSA speak application approach.

In addition, ELSA Speak is a language learning application that uses AI to provide personalized pronunciation feedback and coaching to English language learners. When students pronounce words or certain sentences, the system of ELSA Speak does analysis and gives correction feedback (Kholis, 2021). The application would provide us with a work environment suitable for the enjoyment and dynamic learning process, very original with emphasis on the characteristics of the language most appropriate for the user.

4.1.6.3. Features. (Maria, 2022) reports the different features that ELSA application may provide:

•Progress tracking;

•Virtual AI coach;

•Learning path and customizable to preferences;

•Pronunciation feedback; speaking and listening practice;

•Conversation practice with native speakers;

As the ELSA Speak application keeps up with regular platform updates, the researcher highlights the incorporation of brand-new functionalities and tools into the repository of this Artificial Intelligence based application:

- Speech Analyzer
- Study Sets
- Dictionary
- Course Finder
- Coach

Figure 1

Image from the ELSA Speak application which shows its platform and features.
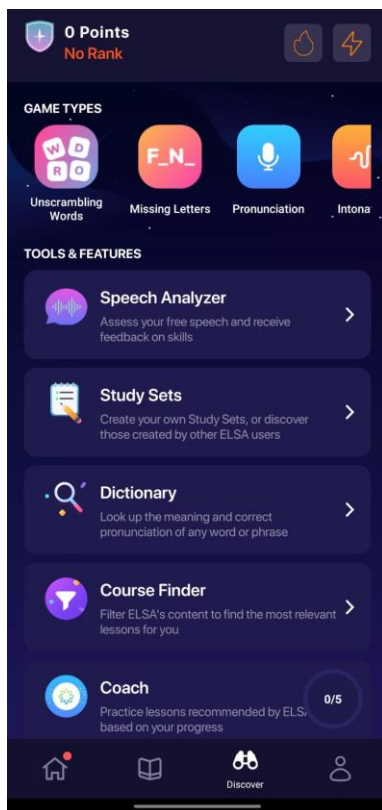
4.1.6.4. Advantages of ELSA Speak Application. The ELSA Speak application is a revolutionary tool in the field of language learning. With a relentless commitment to progress, the ELSA Speak application has continuously evolved its platform, incorporating new features and tools that have the potential to revolutionize language learning experiences. We will delve into the advantages offered by the ELSA Speak application, exploring how it addresses language barriers and empowers learners to master speaking skills. Through a comprehensive analysis of its unique features, user-friendly interface, and personalized learning approach, we aim to shed light on how this application has emerged as a valuable asset for language learners.

According to different authors and the researcher contribution this app displays several advantages:

4.1.6.4.1. Personalized feedback. This application assists students in improving their word and sentence stress, intonation, fluency, vocabulary development, and pronunciation. By providing immediate feedback, it helps students identify their areas of difficulty and pinpoint areas that require improvement (Lesmana, 2022). With this personalized feedback, learners can focus their efforts on the aspects of English pronunciation that matter most for their individual language goals, leading to faster and more effective language acquisition. The application's Artificial Intelligence algorithms analyze users' speech and offer specific guidance, highlighting areas for improvement and suggesting personalized exercises to enhance their language skills effectively. This personalized approach ensures that learners receive targeted feedback, accelerating their progress and helping them achieve more accurate and natural English pronunciation and fluency.

4.1.6.4.2. Efficiency. ELSA Speak's Artificial Intelligence algorithms can provide real-time feedback on the user's pronunciation, allowing for more efficient language learning compared to traditional methods. Moreover, it refers to its ability to optimize language learning outcomes in a time-effective manner. By offering targeted and relevant content, ELSA Speak accelerates the learning process, allowing users to achieve language proficiency and fluency more efficiently compared to traditional language learning methods

4.1.6.4.3. Convenience. ELSA Speak is a mobile application, allowing users to access it anytime, anywhere, making it convenient for busy individuals to fit language learning into their schedule (Eton Institute, 2018). The ELSA Speak application's platform enables active learning, eliminating the need for physical classes or fixed schedules. Learners can fit language practice into their daily routines, making it a convenient and accessible tool for enhancing language skills at their own pace and convenience.

4.1.6.4.4. Cost-effective. ELSA Speak is a cost-effective alternative to traditional language learning methods, such as hiring a private tutor or taking in-person classes. ELSA Speak application stems from its ability to provide high-quality language learning support at a reasonable price. Compared to traditional language courses or private tutors, ELSA Speak offers an affordable alternative without compromising on effectiveness. Learners can access valuable language instruction and targeted feedback at a fraction of the cost, making it a cost-

effective solution for individuals seeking to improve their language skills without breaking the bank.

4.1.6.4.5. Motivation. The ELSA Speak application as a learning medium has the potential to boost student attitude and motivation due to its engaging features and user-friendly interface accessible through smartphones (Triwardani et al., 2022). ELSA Speak's AI algorithms can help keep users motivated by adapting the content and exercises to their individual needs and progress. This motivation promotes a deeper commitment to language learning and ultimately leads to more successful outcomes.

4.2. Speaking

4.2.1. Introduction

Speaking is an important productive skill that allows us to express and respond to ideas using language. It enables us to persuade, influence decisions, and motivate change, as well as being interconnected with the other language skills of listening, reading, and writing.

Good speaking skills involve the ability to articulate thoughts and ideas clearly and coherently, as well as the ability to listen and understand the spoken language of others.

The development of speaking skills is an important aspect of language learning and is often emphasized in language education programs. Speaking skills can be improved through practice, feedback, and guidance from teachers or other skilled speakers (Brown, 2007).

4.2.2. Definition

Speaking is an interactive process of constructing meaning that involves producing and receiving and processing information (Burns & Joyce, 1997). Its form and meaning are dependent on the context in which it occurs, including the participants themselves, their collective experiences, the physical environment, and the purposes for speaking.

Jia, Y., & Leutner, D. (2020) defines speaking as "the ability to produce spoken language in a clear and appropriate manner, using appropriate pronunciation, intonation, and grammar" (p. 45). This definition emphasizes the idea that speaking involves the ability to use appropriate pronunciation, intonation, and grammar when producing spoken language. Moreover, Celce-Murcia, Brinton, & Goodwin (2010) outlines that "Speaking involves the use of sounds, words, and sentences to convey meaning and involves both the production of language and the comprehension of others' speech" (p. 2). Based on this argument, it shows

that speaking skills involve aspects beyond the understanding and meaning of each sentence as well as of words.

However, speech is not always unpredictable. Language functions (or patterns) that tend to recur in certain discourse situations.

4.2.3. Elements of Speaking

4.2.3.1. Vocabulary. Vocabulary is all about words. in sentences can be found nouns, verbs, adjectives etc. They are a component of words, therefore to be able to make sentences someone has got the words and vocabulary. Nation (2013) defines vocabulary as "the words and word-like units of a language, including collocations and fixed phrases, that a person knows and can use" (p. 3). This argument states the idea that vocabulary includes not only individual words, but also collocations and fixed phrases that a person knows and can use. Laufer (2017) defines vocabulary as "all the words that learners are expected to have acquired in a given context" (p. 8). This definition presents the idea that vocabulary includes all the words that learners are expected to have acquired in a given context.

Vocabulary refers to the set of words and phrases used in a language. There are several key elements of vocabulary that are important to understand in order to learn and use a language effectively:

4.2.3.1.1. Word meanings. This element of vocabulary refers to the specific definitions and connotations of words. It is important to understand the precise meaning of words in order to use them accurately and effectively (Richards & Schmidt, 2002). A strong grasp of word meanings enables speakers to choose appropriate words and expressions, leading to clearer and more precise communication. Additionally, understanding word meaning aids in comprehending what others are saying, facilitating active listening and effective communication in conversations. Building a rich and diverse vocabulary is essential for developing strong speaking skills and expressing oneself eloquently and accurately.

4.2.3.1.2. Word relationships. This element of vocabulary refers to the relationships between words, including synonyms (words with similar meanings), antonyms (words with opposite meanings), and collocations (words that are commonly used together) (Celce-Murcia et al., 2010). Understanding word relationships is vital for effective speaking skills as it allows speakers to use words in context, convey ideas accurately, and grasp the subtleties of language. It also facilitates comprehension when listening to others, enabling speakers to respond appropriately and engage in meaningful conversations.

4.2.3.2. Grammar. An essential component of learning English is grammar. When grammar is difficult for students to comprehend, they have trouble structuring sentences in English. Grammar is a way to organize the sentence and create a good language.

Moreover, Gerot and Wignel (1994) defined grammar as the theory of language which shows the process of language happened. Basically, grammar is the forming of meaning from the combination of words and it describes the language works. Besides that, Crystal (2008) argued that grammar is the way to state our feelings through the structural form of language. Grammar serves as the framework that allows us to organize and convey our thoughts, emotions, and intentions effectively. It provides the rules and structures that govern how we construct sentences, which, in turn, influence the tone, emphasis, and overall meaning of our expressions. Likewise, each speaking element, grammar possesses sub elements:

4.2.3.2.1. Punctuation. In written English, punctuation is used to signify pauses, intonation, and stress words. These punctuation marks are commas, periods, question marks, exclamation points, semicolons, colons, dashes, hyphens, brackets, braces, parentheses, apostrophes, ellipsis, and quotation marks.

4.2.3.2.2. Tense and Aspect. Tenses signify whether a statement refers to the present, the past, or the future by applying parameters to verbs. Likewise, aspect shows whether a statement refers to one single instant action, a regular or repeated action, or an ongoing or progressive action or state.

4.2.3.2.3. Phonology. This element of grammar refers to the sounds and pronunciation of a language. It includes the rules for combining sounds to form words and the conventions for stress and intonation (Brown, 2007). It involves examining the specific sounds, or phonemes, that make up a language and how they are organized, combined, and pronounced in speech. Phonology is crucial for effective speaking skills as it governs the correct pronunciation of words and the patterns of stress, intonation, and rhythm in spoken language.

4.2.3.2.4. Morphology. Morphology is the branch of linguistics that studies the internal structure of words and the rules for forming words in a language. This element of grammar refers to the structure and form of words. It includes rules for forming words by adding prefixes and suffixes, and for changing the tense, number, and case of words (Richards & Schmidt, 2002). On the whole, it involves understanding how words are built from smaller units called morphemes, which are the smallest units of meaning in a language.

4.2.3.2.5. Syntax. Langacker (2019) argues that syntax is not a separate system, but rather an integral part of our cognitive abilities and is grounded in our perception and conceptualization of the world (p. 170). This approach emphasizes the role of meaning in shaping the syntax of a language and claims that the syntactic structure of a sentence emerges from the interaction between the conceptual structure and the grammatical structure.

4.2.3.2.6. Semantics. This element of grammar refers to the meaning of words and sentences. Semantics is the branch of linguistics that studies the meaning of words, phrases, and sentences in a language. Semantics deals with the connection between words and their meanings, along with how meaning is expressed through grammar and syntax (Celce-Murcia et al., 2010). This approach claims that the meaning of sentences emerges from the composition of the meanings of its individual words.

4.2.3.3. Pronunciation. It's important to remember that proper pronunciation entails more than just producing words or sounds correctly. It needs to be seen as a crucial component of communication that is integrated into educational activities. Teachers might encourage their students to check their own pronunciation and practice speaking as much as they can both inside and outside of the classroom. A crucial aspect of effective communication is clear pronunciation.

Pronunciation refers to the way in which sounds and words are spoken in a language. There are several key elements of pronunciation that are important to understand in order to learn and use a language effectively:

4.2.3.3.1. Word Stress. Words contain syllables. When a word has more than one syllable, one of the syllables may be considered more important than the others. This element of pronunciation refers to the emphasis placed on certain syllables or words when speaking. In some languages, stress is used to convey meaning, while in others it is used for rhythm and intonation.

4.2.3.3.2. Rhythm. Rhythm is somehow tightly connected with beat or pulse. Both words may even be the other words for rhythm. When you have the sound of a drum to mark the beat of a music so that you can notice whether the beat is fast or slow for instance, then you have stress to give rhythm to your verse. Nespor and Vogel (2016) argue that rhythm is not just determined by the distribution of stress, but also by the patterns of intonation and phrasing (p. 51-62). Claiming that the rhythm of a language emerges from the interaction of stress,

intonation, and phrasing, and that it is influenced by the phonological, syntactic, and pragmatic constraints of the language.

4.2.3.3.3. Pitch and Intonation. Pitch is the degree of lowness and highness of tone in each syllable, while intonation is the going up and down of pitch over different syllables. Liberman and Whalen (2000), argue that "intonation is not just determined by the tonal contours of pitch, but also by the cognitive and affective states of the speaker" (p. 3217- 3222). This perspective argues that the way a sentence is spoken, in terms of intonation, is a result of the combination of the speaker's thoughts and emotions, and the purpose of the communication the intonation is serving. Lastly, Ladd (2008) reports that pitch refers to the perceived highness or lowness of a sound, and is determined by the frequency of the sound waves (p. 363-382).

4.2.3.3.4. Phonemes. This element of pronunciation refers to the basic unit of sound in a language. A phoneme is the smallest unit of sound in a language that can distinguish one word from another. A phoneme is the smallest unit of sound in a language that can distinguish one word from another (Crystal, 2008). For example, in English, the words "pin" and "bin" differ by only one phoneme, the /p/ in "pin" and the /b/ in "bin." This means that the difference between these two words is simply the pronunciation of one sound.

4.2.3.4 Fluency. Fluency refers to the ability to speak a language easily and accurately. Fluency is not just determined by the speaker's ability to access linguistic knowledge, but also by the order in which grammatical structures are acquired and used by the speaker (VanPatten & Williams, 2015). Fluency, however, is very distinct from these other variables, despite the fact that they are frequently addressed together and appear to be tested similarly on the surface. In studies on accentedness, intelligibility, and comprehension.

Elements of fluency in grammar include the smoothness of sentences using variable sentence structure, words, and literary devices to create a flowing quality, the flow and efficiency with which ideas are expressed, the ease with which a learner can explain themselves without pauses or mistakes, and how well a learner communicates meaning rather than how many mistakes they make in grammar, pronunciation and vocabulary. The following key-elements belong to Fluency:

4.2.3.4.1. Coherence. This element of fluency refers to the ability to use grammar in a way that creates logical and cohesive connections between ideas. Coherence refers to the degree to which a text or discourse is unified and logical. Bailey (2000) argues that "coherence refers to the ability to communicate ideas in a way that is logical and easy to follow" (p. 105).

He argues that coherence is an important skill for negotiators, as it allows them to build rapport with their counterparts and to persuade them to their point of view. In other words, this approach expresses that Coherence is the foundation of clear and understandable expression, ensuring that ideas are presented logically and in a manner that others can easily follow.

4.2.3.4.2. Interactional skills. This element of fluency refers to the ability to use language effectively in interaction with others. Interactional skills refer to the ability to effectively participate in social interactions and communication using a language. According to Bailey (2000) "Interactional Skills refer to the ability to use language to participate in conversations and to manage social interactions" (p. 106). This perspective argues that interactional skills are an important skill for negotiators, as it allows them to build rapport with their counterparts and to persuade them to their point of view.

4.2.4. Speaking Stages

When it comes to speaking in English, there are generally three stages that speakers go through: pre-speaking, while-speaking, and post-speaking. Each stage serves a unique purpose and plays a crucial role in effective communication. n language teaching, particularly in the context of speaking skills development, Richards (2006) proposed "a framework that includes pre-speaking, while-speaking, and post-speaking stages". These stages are designed to guide language instructors in structuring effective speaking activities and supporting learners' language development.

4.2.4.1. Pre-Speaking. This stage is crucial as it sets the foundation for the rest of the speaking process and can help speakers to avoid common mistakes such as going off topic, or not being able to express their ideas clearly. Kormos and Dénes (2014) outline that "The pre speaking stage, also known as the planning stage, is the time before a speaker begins to speak. During this stage, speakers may gather information, organize their thoughts, and plan out what they want to say" (p. 324).

4.2.4.2. While-Speaking. The while-speaking stage is the actual act of communicating with others, this stage is the time for the listener to process the information and communicate their understanding. This stage involves the actual performance of the speaking activity. During the while-speaking stage, learners actively participate in speaking tasks (Richards, 2006).

4.2.4.3. Post Speaking. The post-speaking stage is the time after the speaker has finished speaking, during this stage, speakers may reflect on their performance and evaluate their speaking skills. This stage is important as it allows speakers to identify areas of

improvement and make necessary adjustments for future speaking opportunities. This stage focuses on reflection, feedback, and language enhancement after the speaking activity (Richards, 2006).

4.2.5. Importance of Speaking Skills

Speaking skills are an essential aspect of communication and play a crucial role in both personal and professional life. The ability to speak effectively can help individuals to express their ideas clearly, persuade others, and build relationships. In this article, we will discuss the importance of speaking skills and how they can be developed.

One of the most important benefits of speaking skills is the ability to express oneself effectively. This is particularly important in professional settings, where the ability to effectively communicate can lead to greater success in the workplace. Furthermore, good speaking skills can also help individuals to build stronger relationships, as they allow them to express their feelings and connect with others on a deeper level.

Communication through speaking is undoubtedly the most crucial method of conveying information. While all language skills are essential for well-rounded communication, being adept at speaking offers individuals various unique benefits (Abdikholikova Dilobar, 2022). Since speaking is the primary mode of human interaction and plays a central role in our daily lives, whether it's in personal, social, or professional settings. While all language skills, including listening, reading, and writing, are important for effective communication, speaking holds a distinct advantage. The ability to express oneself articulately and confidently through speech enables individuals to engage in real-time conversations, discussions, and presentations, fostering meaningful connections and collaborations with others.

In conclusion, the literature review presented here emphasized the central role of speaking skills in language learning and highlights the potential of the ELSA Speak application. By embracing innovative tools like ELSA Speak, educators can create a more personalized and effective language learning experience, equipping learners with the necessary skills to communicate confidently and proficiently in English.

5. Methodology

5.1. Setting and participants

The present research was conducted in a public institution located in the city of Loja which is situated in the southern part of Ecuador. Loja is a province in South America with an approximate population of 483,846 people. The geographical coordinates of the institution where the research took place are approximately 3.948612128694979 in latitude and -79.217171049000192 in longitude.

Population and sample

This study involved a pre-service teacher who assumed the role of active participant observer responsible for executing an action research. The participants in the study were second-year high school students attending a local high school in Loja during the 2022-2023 school year. Specifically, the participant group consisted of 22 students, 11 male and 11 female between fifteen and sixteen years old. In order to select participants, the convenience sampling technique was chosen. Convenience sampling is a non-probability sampling technique that involves choosing individuals who are easily accessible and readily available for research purposes (Creswell, 2012). In this study, the participants were selected by their accessibility and availability. Also, the participants were specifically B1.1 level in English according to the language proficiency standards set by the Ministry of Education. To recruit the research participants and obtain permission to implement the intervention plan within the educational institution, a comprehensive process was followed. Initially, the researcher visited the institution and held conversations with the principal to obtain permission for the intervention proposal. Once the principal's approval was obtained, the next step was to engage in a constructive dialogue with the institution's English teacher to organize the intervention plan to be implemented during class hours according to her schedule. Subsequently, a formal request was submitted to the institution to obtain permission to carry out the research.

5.2. Procedure

5.2.1. Method

The present research project aims to investigate the impact of ELSA Speak application on developing speaking skills in second-year high school students at a public institution in the city of Loja, Ecuador. In order to achieve this goal, the use of a mixed research method has been considered appropriate. According to Creswell (2018), mixed method is a type of study that combines both qualitative and quantitative processes. Qualitative processes involve the

examination and analysis of non-numeric data. On the other hand, quantitative processes involve the collection and analysis of numeric data, often obtained through structured tests. In this regard with the perspective of Tashakkori et al. (2020) a mixed approach allows validating qualitative insights through the use of quantitative data and vice versa. Therefore, to ensure the reliability and validity of this study, quantitative data provided numerical indicators of the participant's performance, as demonstrated in the pre-test and post-test scores. On the other hand, the qualitative data helped to validate and provide a deeper understanding of the quantitative results through the students' answers to the open-ended questions of the questionnaire. This allowed for a comprehensive analysis, meaningful conclusions, and informed recommendations for teaching practices in English as a foreign language (EFL) classroom.

5.2.2. Research Design

The research project was developed by using the action research cycle's steps, following a mixed method suggested by Sagor (2005), that helped to effectively address the issue presented in the development of speaking skills. According to the author, action research is an approach to inquiry that involves systematic and collaborative efforts by practitioners to investigate and improve their own practice, a participatory and reflective process where practitioners actively engage in identifying problems, developing interventions, and evaluating the outcomes in real-life settings.

5.2.2.1. Identifying a problem. Based on extensive observations conducted in the EFL classroom, the researcher identified a prominent problem concerning the lack of speaking skills among students. This problem encompasses vocabulary limitations, issues with grammar and sentence structure, and lack of fluency and confidence required to speak English comfortably. Based on these findings, the researcher proposed the implementation of the ELSA Speak application as a viable solution to effectively address this problem. Consequently, to begin the study, the researcher formulated the following research problem: How does ELSA Speak application enhance speaking skills among second-year high school students at a public institution in Loja?

5.2.2.2. Gathering background information. As a subsequent step, a comprehensive review of the existing literature and previous studies about the key variables of speaking and ELSA Speak was conducted. In this study, speaking was identified as the dependent variable, encompassing indicators such as vocabulary, pronunciation, grammar, and fluency. On the

other hand, ELSA Speak was identified as the independent variable, with indicators classified as motivation, convenience, flexibility, eloquence, resources, feedback, engagement, coach, speech analyzer, study sets, dictionary, and course finder. By examining the relationship between these indicators, this research aimed to provide valuable insights into the impact of the ELSA Speak application on enhancing speaking skills. The theoretical framework was then presented, which provided a general understanding of the research project by outlining the conceptualizations of the two variables and their respective indicators. In addition to their importance in the teaching and learning process in EFL classrooms. The information presented in the development was obtained from thesis works, papers, journals, and articles found in databases such as Eric, Library Genesis, and Google Scholar. This literature review was intended to contribute to the existing body of research on speaking skills and the ELSA Speak application. After identifying this problems, the researcher asked for permission from the principal of the public institution using a request letter to conduct a detailed diagnosis with the second-year high school students, who were selected through convenience sampling since they had significant difficulties in their speaking skills.

5.2.2.3. Designing the proposal. From all these postulations, an action plan was developed with a strategy focused on improving the students´ speaking skills, the researcher made adaptations to the different features of ELSA Speak application aligned with the stages of Speaking: pre, while, and post speaking. The aim was to enhance students' vocabulary, pronunciation, grammar and fluency through an artificial intelligence-based application like ELSA Speak. In the first stage, the teacher applied activities to stimulate the students' interest and curiosity before speaking to the artificial intelligence-based application. In the second phase, the teacher used activities that were completed by students while speaking to the ELSA Speak application material. In the third phase, the teacher provided students with activities on each of ELSA Speak´s features to assess their speaking skills. These stages align with the general understanding and use of the speaking stages framework (Richards, 2006). The intervention took place over a period of five weeks, spanning the academic year of 2022-2023, a number of 5 lesson plans which included the ELSA Speak application under Richard´s speaking stages approach (See annex 5). The topics used are adapted from the internet, an English course book for second-year high school students "Live Escalate Lite 3", and other sources which were relevant to the student's needs. The researcher carried out the intervention plan as an active participant observer and collaborator, and the duration of the study was 5 weeks and a total of 15 hours during the 2022-2023 school year.

It is necessary to mention that this proposal was aligned with the research question, the characteristics of the participants and the study design, in order to provide an effective solution to the problem.

5.2.2.4. Collecting data. In the next stage, the previously designed instruments were used to implement the action plan and improve students' speaking skills. The pre-test was administered to the students before the intervention plan to gauge their current level of Speaking (See annex 1). The purpose of this pre-test was to serve as a diagnostic tool. During the administration of the pre-test, a flexible and open-minded approach was adopted. The students were informed about the researcher's presence in their classes and the purpose of the assessment. After that, their collaboration was sought, emphasizing the importance of answering the test questions honestly and to the best of their ability. It was also emphasized that the results of the pre-test would not affect their grades or disrupt the normal course of the subject.

Thus, following the full implementation of the intervention plan, a post-test was administered to assess the impact of the ELSA Speak application on students' Speaking skills (See annex 1). This critical step was intended to determine the extent to which the ELSA Speak application contributed to the development of students' speaking skills. In addition to this, a questionnaire was also administered to gain insights into the students' perceptions of the use of the ELSA Speak application as a strategy for Speaking (See annex 2). The questionnaire sought to uncover the students' perspectives on the effectiveness and relevance of the ELSA Speak application in improving their oral production.

Furthermore, in strict adherence to the ethical principle of privacy, a comprehensive code system was implemented within the pre-test, post-test, and questionnaire to anonymize the identities of individual students. This approach safeguarded confidentiality and ensured that the participants' personal information remained confidential throughout the study. By implementing these measures, the research maintained its integrity and sustained ethical standards in data collection and analysis. This structured approach ensured that students received consistent and comprehensive support to develop their speaking abilities.

5.2.2.5. Analyzing and interpreting data. This step was aimed to analyze and interpret the quantitative and qualitative data collected in the intervention plan through different statistical tables and graphs. The general results cutand findings were reported by establishing

conclusions and recommendations that helped to respond to the research sub-questions formulated by the researcher

5.2.2.6. Implementing and sharing the findings. The results and findings obtained during the research process were shared with the educational community to carry out further studies that allow teachers to improve their students` speaking skills.

5.2.3. Data Collection Sources and Techniques

The data collection for this study attached to a testing technique, in which the researcher used a pre-test as a tool to evaluate the students' speaking abilities prior to implementing the intervention plan, while the post test was employed for analyzing the level of improvement of the students´ speaking skills such as pronunciation, fluency, vocabulary and grammar (See annex 1). In that sense, the test consisted of three closed-ended multiple-choice questions that were developed through this selection method, as the students chose the correct answer from a group of options. Moreover, one open oral-computational question, which involved the use of ELSA speak application to evaluate speaking skills, the outcomes were evaluated based on the very verdict issued by the ELSA speak application.

These quantitative data obtained from the test were compared with the national grading scale established by the Ministry of Education through the criterion-referenced scoring proposed by Gay et al., (2012) which was fundamental to determining the students` performance during the assessment process (See annex 3).

Furthermore, another technique employed was the questionnaire (See annex 2), which was used as a precise method to collect data about a particular subject (Gay et al., 2012). Drawing from this context, the researcher formulated a questionnaire as a tool employing the Likert scale, ranging from "strongly agree" to "strongly disagree," to determine participants' opinions and perceptions (Gay et al., 2012), which included eight closed multiple choice questions to gather quantitative information related to students´ perceptions about the features of ELSA speak application like motivation, convenience, flexibility, eloquence, resources, feedback, engagement, coach, speech analyzer, study sets, dictionary and course finder. Simultaneously, this approach facilitated the acquisition of valid and reliable qualitative data by incorporating eight open-ended questions that encouraged research participants to provide justifications for their responses.

5.3. Data Analysis

The data obtained from both the pre-test and post-test were subjected to descriptive statistical analysis, allowing for a comprehensive examination and interpretation of the quantitative information (Creswell, 2012). The quantitative data from the pre-test and post-test were transformed into visual representations using the Excel program. Two frequency tables and a bar graph were creatively designed to visually represent the information, by using these graphical representations, the researcher was able to assess the central tendency (mean) of the obtained scores with precision and ease by second-year high school students in the four speaking skills such as "vocabulary", "fluency", "pronunciation" and "grammar".

Similarly, the descriptive statistics were employed to present the quantitative data obtained from the questionnaire, effectively capturing and summarizing the key information (Creswell, 2012), and illustrated with a table adapted to the Likert Scale (Creswell, 2012) and a bar graph that showed the students' perceptions about ELSA Speak Application features that helped to enhance their speaking skills, coach, speech analyzer, study sets, dictionary, course finder, motivation, convenience, flexibility, eloquence, resources, feedback and engagement. In contrast, the qualitative data was subjected to an exhaustive examination employing the approach of thematic analysis, which involved identifying and exploring key themes and patterns within the data.

6. Results

The following section shows the results and findings obtained by the researcher about the use of ELSA Speak application on the second-year high school students` speaking skills in order to demonstrate how the specific objectives were accomplished during the research process. In this sense, the first and second objective will be explained by using numerical data gathered from the pre-test, the post-test and questionnaire, while the narrative data collected from the questionnaire will be analyzed based on the second objective. Therefore, the data will be presented in tables and bar graphs with their corresponding interpretation and analysis.

6.1. Pre-test and Post-test Results

Objective 1

To validate the effectiveness of ELSA Speak, an artificial intelligence-based application to enhance speaking skills among second-year high school students at a public institution in Loja, during the 2022-2023 school year.

Pre-Test results

Table 1

Pre-test scores on the performance of second-year high school students´ speaking skills

Grading scale	V		FL		P		G	
(2.5/2.5)	F	%	F	%	F	%	F	%
Grades (0 - 0,5)	0	0	2	11	0	0	2	11
Grades (0,6 - 1)	4	22	3	17	3	17	3	17
Grades (1,1 - 1,5)	14	78	11	61	6	33	9	50
Grades (1,6 - 2)	0	0	2	11	8	44	3	17
Grades (2,1 - 2,5)	0	0	0	0	1	5.6	1	5.6
Total of students	**18**	**100**	**18**	**100**	**18**	**100**	**18**	**100**
Mean	1.1		1.12		1.48		1.17	

V= Vocabulary, FL= Fluency, P=Pronunciation, G=Grammar

The above table illustrates the number and percentage of second-year high school students who obtained scores between 0-0,5; 0,6-1; 1,1-1,5; 1,6-2 and 2,1-2,5 in each of speaking skills, such as "vocabulary", "fluency", "pronunciation" and "grammar" during the application of the pre-test before implementing the proposal with the ELSA Speak application.

From the data shown in Table 1, it can be seen that 78% of students achieved a score between 1,1-1,5 in the skill of "vocabulary" since students could not comprehend the word relationships. On the other hand, 22% of students got a score between 0,6-1 due to their failure

to accurately align and recognize the meaning of each word with its relevant context. Overall, these results revealed a mean score of 1.1 out of 2.5.

In terms of "fluency" the results show that 61% of the participants had a score between 1,1-1,5, which means that they were not able to fluently and coherently express themselves through ELSA Speak application, because when speaking, students became hesitant and started to overthink words. Moreover, 17% of them obtained grades between 0,6-1 since they often paused mid-sentence, searched for the right vocabulary, or self-corrected their grammar, which interrupted the flow of the speech and flexibility.

Likewise, 11% of the participants scored within the range of 0-0,5 since when recording, students performed with fear and shyness, because their classmates paid close attention to their speaking, driven by the fear of being muffed by their partners. During this recording session, students put more emphasis into avoiding the attention from their classmates and stayed away from each other, thus failing to produce a fluent speech. In summary, the results indicated a mean score of 1.12 out of 2.5.

Moreover, Table 1 provides an overview of the skilled called "pronunciation" where 44% of the sample obtained a score between 1,6-2, which shows that students' production and recognition of words through stress patterns were partially effective. Instead, 33% of the participants got grades between 1,1-1,5 due to when listening and pronouncing, students struggled to place stress into the correct syllable of the word which led to misunderstandings and affected the clarity of its speech. Lastly, 17% of them achieved scores in the range of 0,6-1 since first syllable stressed words were the most difficult to pronounce. Taken together, these data gave a mean score of 1.48 out of 2.5.

Finally, the results on the skills "grammar" demonstrate that 50% of the participants achieved a score between 1,1-1,6 because students' use of punctuation, tense and aspect lacked effectiveness. Similarly, 17% of them obtained grades in the range of 0,6-1 since they struggled with verb tenses, such as the past, present, and future, along with their continuous forms. It was difficult to consistently use the correct tense, resulting in errors such as using present tense when past tense was needed or vice versa. These errors impacted the clarity of her spoken English and made it challenging for listeners to understand her intended meaning. Ultimately, 11% of the participants achieved a score in the interval of 0-0,5 since they found it challenging to understand and differentiate the diverse range of tenses used in each sentence. Together, these results provided a mean score of 1.17 out of 2.5.

To sum it up, students' lowest performance was seen in "vocabulary", which refers to the entire set of words, phrases, and expressions that individuals have knowledge of and can use to communicate effectively. On the other hand, the highest performance was seen in "pronunciation", which stands for the way in which words are spoken or articulated. Thus, it can be deduced that students could somewhat produce or have knowledge about written words. As a consequence, the production of spoken words and overall speaking production was the real issue that helped the researcher to decide to carry out the intervention plan in this population.

Post-Test results

Table 2

Post-test scores on the performance of second-year high school students´ speaking skills

Grading scale	V		FL		P		G	
(2.5/2.5)	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**
Grades (0 - 0,5)	0	0	2	11	0	0	0	0
Grades (0,6 - 1)	0	0	2	11	0	0	1	6
Grades (1,1 - 1,5)	3	17	11	61	5	28	4	22
Grades (1,6 - 2)	1	6	3	17	5	28	9	50
Grades (2,1 - 2,5)	14	78	0	0	8	44	4	22
Total of students	18	100	18	100	18	100	18	100
Mean	2.26		1.24		1.97		1.8	

V= Vocabulary, FL= Fluency, P=Pronunciation, G=Grammar

On the other hand, after an five-week period of intervention, a post-test was applied to students to measure their speaking skills such as "vocabulary", "fluency", "pronunciation" and "grammar". Table 2 shows the number and percentage of second-year high school students who obtained scores between 0-0,5; 0,6-1; 1,1-1,5; 1,6-2 and 2,1-2,5 in the four speaking skills.

As can be seen from Table 2, 78% of the participants obtained scores between 2,1-2,5 in the skill "vocabulary" since after the intervention plan, students could identify, use and comprehend more accurately the word relationships and word meanings. This time, their understanding and range of for words was wider and precise. Even though students had improved their vocabulary, they still needed to master it. On the other hand, 17% of them had grades in the range of 1,1-1,6 because of a lack of focus during the assessment procedure. Collectively, these findings revealed an average score of 2.26 out of 2.5.

Moreover, Table 2 shows that the skill "fluency", learners' production and recognition of sounds passed from ineffective to partially effective, data reveal that 61% of the students obtained scores in the range of 1,1-1,6 since the fear of being muffed by their partners from classmates improved slightly since the class was small, and the closeness between participants was evident enough to still bothering the speaker, resulted in undesired laughs which blocked the microphone of the device. Thus, the speech analyzer that ELSA Speak possess could not recognize any of the speech. Moreover, 17% of the participants achieved a score between 1,6-2 since when speaking to the application, students overcame hesitant speech, overthinking of words and too many pauses, which helped students to produce a more confident and fluent speaking. In brief, the findings pointed to an average score of 1.24 out of 2.5.

Regarding "pronunciation", the data shows that 44% of the students achieved scores falling within the 2.1 to 2.5 range, since students showed significant improvement in the production and recognition of words through stress patterns. In the same way, 28% of the participants achieved a score between 1,6-2 because students passed from partially good to a very good pronunciation level, which showed that learners had a clear pronunciation, recognition and placing stress into the correct syllable of words. In the same vein, a score between 1.1-1.5 was attained by 28% of the participants, since students needed extra time in contact with the app to put themselves aware of the phonemes, even though this did not interfere with their rhythm. Combining these results, an average score of 1.97 out of 2 was obtained.

Finally, the results presented in Table 2 demonstrate that 50% of the students achieved a score between 1,6-2 in the skill "grammar" because students significantly improved their use of punctuation, tense and aspect. Thus, 22% of them obtained grades in the interval of 2,1-2,5 since they had a clear understanding of tenses. Students consistently used accurate verb tenses to convey different time frames, they effortlessly switched between past, present, and future tenses, choosing the appropriate tense based on the context. In summary, the results gave a mean score of 1.8 out of 2.5.

Lastly the quantitative data presented was validated through qualitative data from the field notes and questionnaire, which provided contextual information, offered further explanations, and uncovered potential limitations or alternative interpretations of the quantitative results.

Overall, students' speaking skills improved with the use of ELSA Speak Application, However, students still needed more training to master their speaking to become active language users.

Figure 2

Comparison between pre-test and post-test total means on the performance of second-year high school students` speaking skills
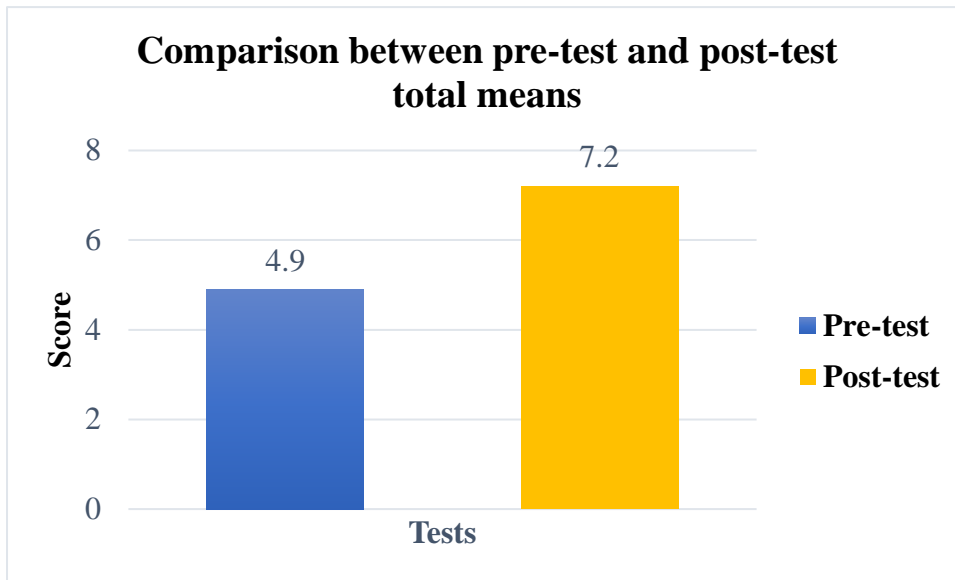
The present bar graph compares the total mean score obtained by the second-year high school students during the pre-test and post-test in order to show the impact of ELSA Speak application on speaking skills, such as "vocabulary", "fluency", "pronunciation" and "grammar".

Based on the above results, it can be seen that 100% of the students got a total mean score of 4.9 out of 10 in the pre-test, which meant that they are "close to achieving the required learning" according to the Ministry of Education, whereas the overall post-test mean was 7.2 out of 10, allowing students to "achieved the required learning". Undeniably, this data demonstrated the importance of applying ELSA Speak application to develop the students´ speaking skills.

6.2. Questionnaire results

Objective two: To identify the student's perceptions about ELSA Speak Application features that help to enhance speaking skills among second-year high school students at a public institution in Loja, during the 2022-2023 school year.

Table 3
Second-year high school students´ perceptions of using ELSA Speak application

STATEMENTS	SA		A		NAND		D		SD		T	
	F	%	F	%	F	%	F	%	F	%	F	%
ELSA Speak application motivates me student through interactive themes and content which are interesting and eye catching. (Motivation).	11	61	6	33	1	6	0	0	0	0	18	100
The resources in the form of video lessons, simulations, coaching and study sets featured through ELSA Speak Application, provided enough resources to improve speaking. (Resourceful)	12	67	5	28	1	6	0	0	0	0	18	100
ELSA Speak application personalized feedback efficiently and helped me to improve and brush up my pronunciation. (Feedback).	10	56	8	44	0	0	0	0	0	0	18	100
ELSA speak application provides flexibility to access because it gives virtual assistance to learn. (Flexibility).	9	50	9	50	0	0	0	0	0	0	18	100

SA=Strongly Agree, A= Agree, NAND=Neither agree nor Disagree, D=Disagree

The above table presents in percentages the second-year high school students` perceptions about the features of ELSA Speak application such as Coach, speech analyzer, study sets, dictionary, feedback, motivation, resources, flexibility and course finder.

As evident from the findings presented in Table 3, a remarkable 61% of the participants strongly agreed that using the ELSA Speak application provoked profound motivation within them. This exceptional tool not only provided them with an array of engaging activities, constant updates, and fresh content but also served as a source of inspiration. In a similar vein, 33% of students shared their agreement, although with slightly less enthusiasm compared to the previous group. They pointed out that the application's performance on their smartphones was not entirely fluent, possibly due to the extensive range of features and abundant content it offers. This abundance of data posed a challenge for lower-end smartphones, obstructing them from fully experiencing the highly motivating environment. Lastly, a neutral stance was adopted by 6% of the students, who acknowledged the potential drawbacks of ELSA Speak's frequent update system. They expressed concerns about the possibility of higher subscription costs, even though, in reality, this was not the case.

Similarly, the data table shows that 67% of the participants strongly agree that the resources in the form of video lessons, simulations, coaching and study sets helped and exposed them to an authentic learning experience, a wider range of content and language exposure, which was supported by one student who mentioned "al ser diferente a otros tipos de aplicaciones, puesto que es mas interactiva, nos hizo disfrutar de mejor manera el idioma inglés" [Being different from other types of applications, as it is more interactive, made us enjoy the English language in a better way] (Student #16). On the other hand, 28% of the students opted for the "agree" option, citing that the ELSA Speak app offered a commendable array of tools that empowered them to be resourceful. On the contrary, 6% remained neutral, neither agreeing nor disagreeing, as they believed that some of the resources provided by the ELSA Speak application were excessive and not essential for their English language learning journey.

Regarding statement 6, a significant 56% of the students concurred that the ELSA Speak application's personalized feedback played a crucial role in enhancing and refining their pronunciation skills, as one participant noted "En la aplicacion te marca con rojo algo que no has pronunciado bien y te pone la correcta pronunciación hasta que al fin lo logres" [In the application, it marks in red something that you have not pronounced correctly and provides the correct pronunciation until you finally achieve it] (Student #10), emphasizing in the instant and accurate feedback that ELSA Speak provided to the student. Similarly, a notable 44% of participants expressed their agreement, driven by the belief that their learning experience with ELSA Speak was both emotionally charged and highly effective. They found themselves

engaging with the speech analyzer, feedback, and algorithm of the application, tirelessly endeavoring to replicate speech with maximum accuracy. The ultimate goal was to achieve a notable score, indicating that their speaking abilities had reached a level proficient enough to progress to the next activity.

Furthermore, it is intriguing to observe a divided consensus among the surveyed individuals. A significant 50% of the students strongly agreed that the ELSA Speak application gave upon them an abundance of flexibility, granting them the freedom to access and use it anytime, anywhere, primarily owing to its virtual assistance feature. In this sense, one student pointed out that "Esta asistencia virtual nos guió y nos ayudó comprendiendo algunas cosas que no entendíamos sobre nuestro nivel de inglés" [This virtual assistance guided us and helped us understand some things that we didn't grasp about our English level] (Student #16). Likewise, 50% of students acknowledged that ELSA Speak, with the aid of its virtual assistance, served as a guiding light on their journey to enhance their speaking skills. The convenience of accessing the application from home or any location enabled them to maintain regular interaction with the virtual assistant, allowing them to accurately assess and diagnose their own progress and areas for improvement.

Figure 3

Second-year high school students´ preference for ELSA Speak features
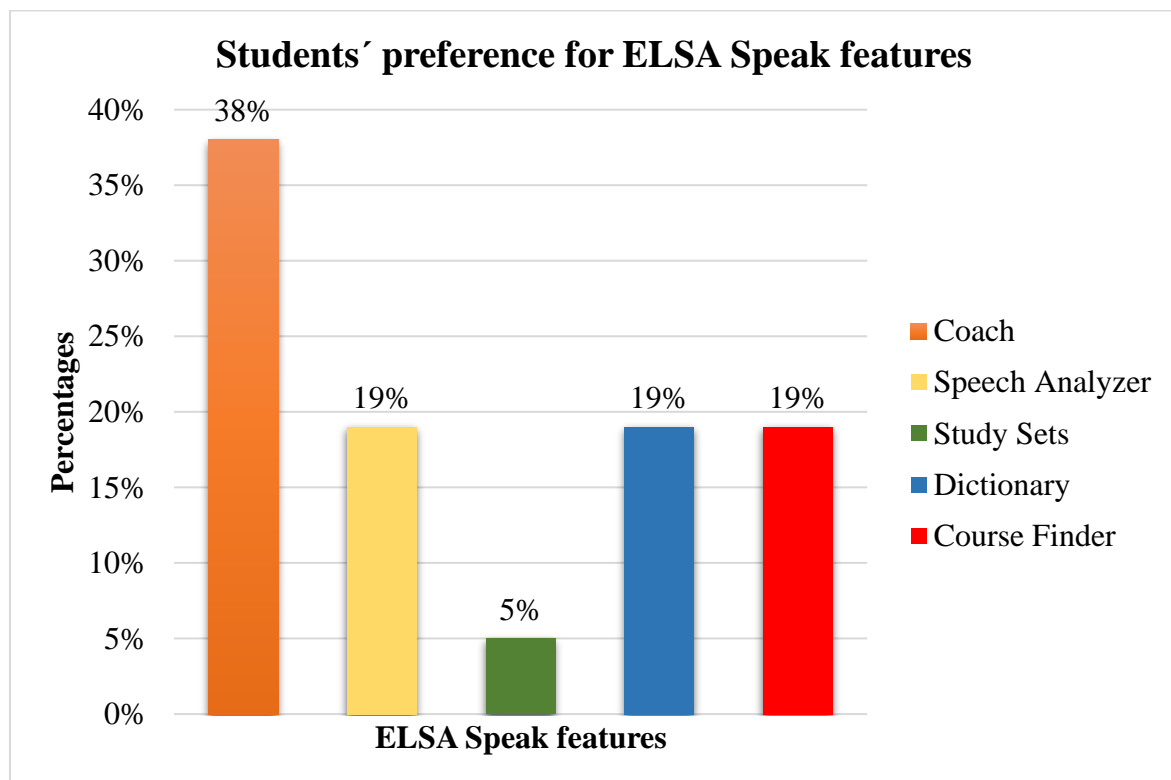
The present bar graph illustrates the second-year high school students´ preferences for the different ELSA Speak features like coach, speech analyzer, study sets, dictionary and course finder in order to show the most and least favorite feature to develop their speaking skills such as "Vocabulary", "Pronunciation", "Fluency" and "Grammar"

As seen in Figure 3, a notable 38% of students gravitated towards the "Coach" functionality, as it offered them personalized lessons tailored to conquer the challenges of the IELTS, enhance real-life communication skills, master intonation, and receive ongoing assessment. In a manner reminiscent of a real-life coach, this feature also provided a structured routine of exercises and diagnostics, elevating their learning experience to new heights. On the other hand, 19% of the participants in the survey opted for the "Speech analyzer," "Dictionary," and "Course finder" as their preferred features. These functionalities allowed them to evaluate their free speech and receive valuable feedback on their speaking abilities, access comprehensive word meanings and accurate pronunciations, and efficiently filter ELSA's extensive content to discover the most relevant lessons tailored to their specific needs.

7. Discussion

The present study was designed to improve Speaking skills by using ELSA Speak application among second-year high school students at a public institution in Loja, during the 2022-2023 school year. In the forthcoming section, we embark on an engaging discussion that illuminates the convergence of this study's outcomes with those of previous research studies expounded upon earlier. Additionally, this section contains significant insights that aspire to provide comprehensive responses to each research inquiry, and the limitations that were identified during the intervention plan.

Moreover, the present study was designed to give answer to the main research question: How does ELSA Speak application enhance speaking skills among second-year high school students at a public institution in Loja, during the 2022-2023 school year? The study demonstrated notable improvement in the speaking skills of second-year high school students after using the ELSA Speak application, with the mean post-test score increasing from the pre-test score. It is supported by Kholis (2021), found that ELSA Speak application can help and improved the students' pronunciation skills and motivation, this was confirmed by the students' results and scores. Previous research has also acknowledged the effectiveness of ELSA Speak in enhancing vocabulary, pronunciation, grammar, and fluency. The application's features, including the dictionary, video lessons, simulations, and instant feedback, were highly beneficial and contributed to an authentic learning experience. However, some limitations in content and devices availability pose challenges requiring future research attention.

The first research sub-question was **what is the effectiveness of artificial intelligence-based applications to enhance speaking skills among second-year high school students at a public institution in Loja, during the 2022-2023 school year?** The results indicated that second-year high school students obtained a total mean score of 4.9 out of 10 during the application of the pre-test, while the overall mean score of the post-test increased to 7.2 out of 10 with a statistical difference of 2.3 which means that the use of ELSA Speak application helped them to develop their speaking skills. In the same way, prior studies have noted that this application is characterized by effectively improving speaking skills like vocabulary, pronunciation, grammar and fluency (Aswaty and Indari, 2022), which is consistent with the ideas of Lesmana (2022) who also showed that ELSA Speak application is positive method for teaching speaking skills, and could improve student English speaking within the classroom since the ELSA Speak application could attract students' interest in learning to speak English

because it has many features that make it easier for students to understand it. Nevertheless, one limitation identified by the researcher was the lack of free content and specialized features for grammar.

The second research sub-question was **what are the students' perceptions about ELSA Speak Application features that help to enhance speaking skills among second-year high school students at a public institution in Loja, during the school year 2022-2023?** On this question, the study found that 61% of the surveyed agreed that using the ELSA Speak application provoked profound motivation within them, which is corroborated by Fakdawer (2020) who mentions that ELSA Speak application is helpful for promoting intrinsic motivation. At the same time, 67% of the participants strongly agreed that that the resources in the form of video lessons, simulations, coaching and study sets helped and exposed them to an authentic learning experience, which confirms the importance of applying ELSA Speak to present a variety of unique content for enhancing speaking skills (Lesmana, 2022). Additionally, 19% of the participants agreed that their second favorite ELSA Speak feature was "Dictionary", since the feature was very helpful in getting more vocabularies with its spelling. In accordance to the previous finding, a study carried out by Fakdawer (2020) demonstrated that the use of ELSA Speak application, specifically the "Dictionary" feature gave the particular words the students looked for with its spelling, likewise was one the most applied and preferred features.

Moreover, 56% of the respondent pointed out that ELSA Speak application instant feedback played an essential role in enhancing and refining their pronunciation skills, which supports the ideas of Samad and Aminullah (2019) who state that regarding the feedback of the activities, it gives good, instant and clear explanation. Finally, 50% of students strongly agreed that ELSA Speak application gave upon them an abundance of flexibility, granting them the freedom to access and use it anytime, anywhere, primarily owing to its virtual assistance feature, which embraces this application importance in terms of its design on content, assessment/ flexibility, multimedia, and automatic speech recognition (Darsih et. al, 2020).

However, one of the limitations that emerged from the research work was the lack of high-end smartphones, The students' lower-end smartphones were like a barrier for the application, muffling their speech and preventing the speech recognition system from fully embracing it. The system could not provide high-quality audio for diagnosis and improvement, and the students had to speak louder and more clearly in order to be understood. This was tiring

and frustrating, and it slowed down the process of helping the students. As a result, it can be said that this is an important issue for future research.

8. Conclusions

Returning to the research sub-questions posed at the beginning of this study, it is now possible to state that:

The implementation of ELSA speak application helped second-year high school students significantly improve their speaking skills such as: vocabulary, grammar, fluency and pronunciation. Furthermore, it granted them the ability to embrace the English language and confidently communicate their thoughts verbally using a revolutionary AI-powered application such as ELSA speak.

The second-year high school students positively perceived the features of ELSA speak application like coach, speech analyzer, dictionary, study sets and course finder, since they played a pivotal role in enhancing their oral aptitude and facilitating an efficient, flexible and resourceful mastery of the language. Additionally, students intrigued by the possibilities presented by ELSA speak application, were inspired and motivated to energetically engage with the features offered by this artificial intelligence-based assistant, it pushed them forward to connect with their peers in real-world scenarios, through personalized, immediate and accurate feedback, transcending limitations and fostering meaningful interactions.

9. Recommendations.

It is advisable for teachers to encourage and integrate the ELSA speak application into their classroom practices, using it as a valuable aid to assess student activities, evaluate language proficiency, and provide constant exposure to English. By incorporating the ELSA speak application into their teaching, educators aim to create a collaborative partnership between technology and the teacher, fostering an environment where students can benefit from English learning both inside and outside the classroom, anytime and anywhere.

In order to maximize the benefits of the ELSA speak application and enhance students' speaking skills, it is advisable for researchers to administer additional time and expenses to the array of features that the artificial-intelligence based application provides, since the most preferred tool among students belonged to an ELSA Speak pro feature. Thus, this will give students more opportunities to master their speaking skills at a higher and effective level.

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Annex 1. Pre-test and Post-test

UNIVERSIDAD NACIONAL DE LOJA

DEPARTMENT OF PEDAGOGÍA DE LOS IDIOMAS

NACIONALES Y EXTRANJEROS

Dear student, the objective of the following test is to measure your speaking skills. Please, pay attention to the instructions to answer the questions correctly. Answer the following test with sincerity and honesty. Your answers will be anonymous and confidential.

Student's code: _____

Date: _____

1. **Read the following sentences and choose the right word according each sentence (Vocabulary) (2.5 PTS)**

1A. The album's satisfying _____ paint a vivid picture of a summer, _____ dancing in the Caribbean…

A. Transitions/while   B. Colorfulness/when   C. Introduction/while

2A. _____"The melodic cawing of seagulls seamlessly blends into the next _____, bridging the gap between "Agosto" and "Callaita".

A. Wave/while   B. Track/when   C. Sound/when

3A. "The following day, he descended upon the Bronx _____ capturing a visually stunning music video for one of the album's _____ tracks."

A. Finished/while   B. Highlight/while   C. Play down/when

4A. This release plan embodies two key elements that drive Un Verano Sin Ti's spirit: Benito's fervent boricua _____ and reverence for Dominican heritage, especially _____ it's time to live performances.

A. Pride/when   B. Shame/when   C. Loyalty/while

2. **Everyday conversations through ELSA Speak app. Using the speech analyzer tool, you will answer five questions about your favorite food. Press the recorder to assess your speech, during your while-speaking stage. Results may appear instantly, then screen shot the overall score for "fluency" and send them over to the teacher. Make sure to use part of the following vocabulary while speaking (Fluency) (2.5 PTS)**

Vocabulary:

in my opinion	crunchy	have a sweet tooth	delicious	Cooked meals
pasta	French fries	Home-made	marinated	Mouthwatering meals
seafood	fried	in reality	Balanced diet	it's getting to the point were
on the whole	Tasty	Fried chicken	Chocolate cake	roasted

3. **Listen and circle the word that has the stressed syllable underlined (Pronunciation) (2.5 PTS)**
   a) **electrical** – elec<u>tri</u>cal, e<u>lec</u>trical or electri<u>cal</u>
   b) **amplifier** – <u>am</u>plifier, am<u>pli</u>fier, ampli<u>fier</u>
   c) **upload** – <u>up</u>load, up<u>lo</u>ad or uplo<u>ad</u>
   d) **extremely** – <u>ex</u>tremely, ex<u>tre</u>mely or extre<u>mely</u>

4. **Choose the correct verb tenses to complete the sentences below (Grammar) (2.5 PTS)**

   1a. I _____ anything about the night of the accident.

   a. don't remember

   b. 'm not remembering

   c. wasn't remembering

2a. After we broke up, she sold the ring that I _____ her for her birthday.

    a. give

    b. was giving

    c. had given

3a. We took off our clothes and _____ into the river.

    a. were jumping

    b. had jumped

    c. jumped

4a. A: You look fitter! B: Yes, I _____ at the gym for the last few months.

    a. 'm working out

    b. 've been working out

    c. work out

THANKS FOR YOUR COLLABORATION

UNIVERSIDAD NACIONAL DE LOJA

DEPARTMENT OF PEDAGOGÍA DE LOS IDIOMAS
NACIONALES Y EXTRANJEROS

Dear student, answer the following questionnaire with sincerity and honesty. Please circle the response that best describes your perception of using ELSA Speak application to improve your speaking skills. Your responses will be confidential and anonymous.

Student´s code: _____

Date: _____

1. ELSA Speak application motivates me student through interactive themes and content which are interesting and eye-catching. (Motivation).

Strongly Agree   (   )

Agree   (   )

Neither agree nor disagree (   )

Disagree   (   )

Strongly Disagree   (   )

Why? _____

2. ELSA speak is convenient because it allows me to use it anytime, anywhere. (Convenience)

Strongly Agree   (   )

Agree   (   )

Neither agree nor disagree (   )

Disagree   (   )

Strongly Disagree   (   )

Why? _____

3. ELSA speak application provides flexibility to access because it gives virtual assistance to learn. (Flexibility)

Strongly Agree   ( )

Agree   ( )

Neither agree nor disagree ( )

Disagree   ( )

Strongly Disagree   ( )

Why? _____

4. ELSA Speak Application promotes eloquence (clear and strong messages) with its tasks. (Eloquence)

Strongly Agree   ( )

Agree   ( )

Neither agree nor disagree ( )

Disagree   ( )

Strongly Disagree   ( )

Why? _____

5. The resources in the form of video lessons, simulations, coaching and study sets featured through ELSA Speak Application, provided and exposed me to an authentic learning experience, a wider range of content and language exposure. (Resourceful)

Strongly Agree   ( )

Agree   ( )

Neither agree nor disagree ( )

Disagree   ( )

Strongly Disagree   ( )

Why? _____

6. ELSA Speak application personalized feedback efficiently helped me to improve and brush up my pronunciation. (Feedback)

Strongly Agree   ( )

Agree   ( )

Neither agree nor disagree ( )

Disagree   ( )

Strongly Disagree   ( )

Why? _____

7. ELSA Speak Application keeps me engaged with the language because the platform is constantly updating their daily interactive lessons, based on my progress. (Engagement)

Strongly Agree   ( )

Agree   ( )

Neither agree nor disagree ( )

Disagree   ( )

Strongly Disagree   ( )

Why? _____

8. Which of the following ELSA Speak features do you like the most. (Chose as many as you like)

Coach   ( )

Speech Analyzer   ( )

Study Sets ( )

Dictionary   ( )

Course finder   ( )

Why? _____

Annex 3. National Grading Scale

Qualitative score range	Quantitative score range
Strongly Agree	9-10
Agree	7-8.99
Strongly Disagree	4-6.99
Disagree	1-3.99
Fail	0

Annex 4. Field Notes

	Observer Involvement:
Settings:	
	Date/Time:
Individual Observed:	
	Place:
Observation #:	
	Duration of Observation:
Descriptive Notes	**Reflective Notes**

Lesson plan #1	
Institution Name: Unidad Educativa Fiscal "Tcrn. Lauro Guerrero"	
Date: Tuesday 2nd, 2023	**Type of Instituttion** Public (x) Private ( )
Institutional Tutor:	Mgtr. Javier Agila
Academic Tutor:	Mgtr. Miriam Eucevia Troya Sánchez
Preservice Teacher: Bernardo Bustamante	**Schedule:** Tuesday 8h30 – 9h50 am / Wednesday 9h10 – 9h50 am **Time per lesson:** 3 hours
Class: 10th "A" **Number of Students:** 18	**School year:** 2022-2023
Language level: A2.1	**Topic:** Eating Out
Lesson Objectives:	At the end of the lesson, students will be able to produce and use accurately, vocabulary and expressions related to eating out, such as ordering food, making reservations, and asking for the bill, in a variety of contexts. Functionality wise, student will also be able to demonstrate their understanding of cultural differences in dining etiquette and the use of appropriate language and gestures when communicating with servers or other diners.
Materials	• Worksheet • Powe Point presentation: bit.ly/3HEPV7a • Students book • Video Lesson (Adapted): https://bit.ly/44Agh44

Starter (warmer, lead in, review)	Time
Play a song, pass the ball, eat out: Teacher picks a song, toss a ball to a student and then urge them to pass it to another student. The music stops and the looser must eat something out, which is food brought by the teacher.	10min

Presentation	Time
• Teacher explains the topic of eating out through a Power Point presentation, content based on food vocabulary, menu selections and a dinner date (See annex 1)	20min

Practice	Time
• The teacher projects an interactive video lesson about "eating out" about asking for a menu at a restaurant, students must answer each question with the correct expressions, related to this scene presented during the different time stamps of the video (see annex 2) • Students complete the task I and II from the page 58 of the book. (See annex 3)	20min

	Time
Production	
• Students get in groups of 5 members, and develop a speaking/role play game about taking an order, simulating a real-life situation, answering questions from prompts. (See annex 4)	30min
Assessment	**Time**
• Students complete and produce its own menu of favorite dishes, based on the guideline shared by the teacher. 10min (See annex 5)	

<table>
<tr><td colspan="3" align="center">**Lesson plan #2**</td></tr>
<tr><td colspan="3">**Institution Name:** Unidad Educativa Fiscal "Tcrn. Lauro Guerrero"</td></tr>
<tr><td>**Date:** Tuesday 9th, 2023</td><td colspan="2">**Type of Instituttion**   Public (x)   Private ( )</td></tr>
<tr><td>**Institutional Tutor:**</td><td colspan="2">Mgtr. Javier Agila</td></tr>
<tr><td>**Academic Tutor:**</td><td colspan="2">Mgtr. Miriam Eucevia Troya Sánchez</td></tr>
<tr><td>**Preservice Teacher:** Bernardo Bustamante</td><td colspan="2">**Schedule:** Tuesday 8h30 – 9h50 am / Wednesday 9h10 – 9h50 am

Time per lesson: 3 hours</td></tr>
<tr><td>**Class:** 10th "A"

Number of Students: 18</td><td colspan="2">**School year:** 2022-2023</td></tr>
<tr><td>**Language level:** A2.1</td><td colspan="2">**Topic:** Ordering a meal, special requests, asking and giving recommendations.</td></tr>
<tr><td>**Lesson Objectives:**</td><td colspan="2">By the end of this lesson, students will be able to order a meal in English using appropriate vocabulary and phrases, make special requests related to dietary restrictions or preferences, and ask and give recommendations related to dining experiences. They will be able to use modal verbs such as "can," "could," and "would" to make requests and use polite expressions such as "please" and "thank you". Additionally, students will be able to identify and use vocabulary related to different types of cuisine, dishes, and ingredients commonly found on menus.</td></tr>
<tr><td>**Materials**</td><td colspan="2">Worksheet
Power Point presentation: bit.ly/3nOZl9E
Students book
ELSA Speak study set https://share.elsanow.io/gkh4XlS8Fzb?~channel=recent_contact
Video Lesson (Adapted): https://bit.ly/3Meyzkm</td></tr>
<tr><td colspan="2" align="center">**Starter (warmer, lead in, review)**</td><td>**Time**</td></tr>
<tr><td colspan="2">2023 Tic Tac Toe: Students play the traditional game of "TIC TAC TOE" but they are not allowed to fill each gap if it's not answered with ordering and giving a meal expression placed at the empty space.</td><td>10min</td></tr>
<tr><td colspan="2" align="center">**Presentation**</td><td>**Time**</td></tr>
<tr><td colspan="2">Teacher explains the topic of Ordering a meal, special requests, asking and giving recommendations through a Power Point presentation (See annex 1)</td><td>20min</td></tr>
<tr><td colspan="2" align="center">**Practice**</td><td>**Time**</td></tr>
</table>

• The teacher projects an interactive video lesson about eating out, students must answer each question with the correct ordering expression, related to each scene presented during the different time stamps of the video (see annex 2) • Students complete the activities A, B and C from the page 63 of the book. (See annex 3)	20min

Production	**Time**
• Students complete, practice and orally use the ordering, giving and requesting expressions through a study set ELSA Speak) shared by the teacher. (See annex 4)	30min

Assessment	**Time**
Students individually develop a worksheet activity about ordering food. (See annex 5)	10min

Lesson plan #3		
Institution Name: Unidad Educativa Fiscal "Tcrn. Lauro Guerrero"		
Date: Tuesday 16th , 2023	**Type of Instituttion** Public (x) Private ( )	
Institutional Tutor:	Mgtr. Javier Agila	
Academic Tutor:	Mgtr. Miriam Eucevia Troya Sánchez	
Preservice Teacher: Bernardo Bustamante	**Schedule:** Tuesday 8h30 – 9h50 am / Wednesday 9h10 – 9h50 am **Time per lesson:** 3 hours	
Class: 10th "A" **Number of Students:** 18	**School year:** 2022-2023	
Language level: A2.1	**Topic:** Indefinite Pronouns	
Lesson Objectives:	By the end of this lesson, students will be able to use indefinite pronouns accurately in English when discussing dining experiences and food preferences related to eating out. They will be able to identify and use indefinite pronouns in sentences related to ordering food, making recommendations, discussing dining experiences and asking preferences such as, "Has anyone tried this restaurant before?" or "Does everyone like spicy food?"	
Materials	- Worksheet - Powe Point presentation: bit.ly/3LDFYs3 - Students book - ELSA Speak study set https://share.elsanow.io/vOKjWCoWxzb?~channel=recent_contact - Video Lesson (Adapted): https://bit.ly/44rvGnv	
Starter (warmer, lead in, review)		**Time**
Higher or Lower: Students have to decide whether the second card (a dish) is searched online for a higher number of searches or lower than the first card (dish). As the student progress, will be shown a new card. They guess if the dish is higher or lower searched (famous) in comparison to the other one.		10min
Presentation		**Time**

• Teacher explains the topic of Indefinite Pronouns through a Power Point presentation (See annex 1)	20min
Practice	**Time**
• The teacher projects an interactive video lesson about the use of indefinite pronouns about a cartoon called "Omelette", students must answer each question with the correct indefinite pronoun, related to each scene presented during the different time stamps of the video (see annex 2) • Students complete the activities A and B from the page 65 of the book. (See annex 3)	20min
Production	**Time**
• Students get in groups of 4 members, and develop a Dictogloss speaking activity using indefinite pronouns. (See annex 4)	30min
Assessment	**Time**
• Students complete and practice the indefinite pronouns through a study set (ELSA Speak) shared by the teacher. (See annex 5) 10min	

Lesson plan #4		
Institution Name: Unidad Educativa Fiscal "Tcrn. Lauro Guerrero"		
Date: Tuesday 23rd , 2023	**Type of Instituttion** Public (x) Private ( )	
Institutional Tutor:	Mgtr. Javier Agila	
Academic Tutor:	Mgtr. Miriam Eucevia Troya Sánchez	
Preservice Teacher: Bernardo Bustamante	**Schedule:** Tuesday 8h30 – 9h50 am / Wednesday 9h10 – 9h50 am **Time per lesson:** 3 hours	
Class: 10th "A" **Number of Students:** 18	**School year:** 2022-2023	
Language level: A2.1	**Topic:** Going to restaurants around the world / Lesson #1	
Lesson Objectives:	Students will be able to effectively communicate and discuss their experiences and preferences of going to restaurants around the world using the English language. They will engage in discussions, presentations, or written assignments to showcase their understanding of the cultural diversity and demonstrate their ability to use appropriate language when discussing international dining experiences. Students will be able to test their knowledge through a quiz about Ordering a meal, menu selections and indefinite pronouns.	
Materials	- Worksheet (Test) - Power Point presentations: https://bit.ly/3ogy1Bp - Students book - Video Lesson (Adapted): https://bit.ly/3MhgCk7 - ELSA Speak study set: https://bit.ly/3ImUJOV	
Starter (warmer, lead in, review)		**Time**
Phone doesn't work: Divided in two groups, teacher shares a message through a speaking, then the class must share it between each group, the most accurate message meant that the phone it worked! If not, the phone doesn't work.		10min
Presentation		**Time**
• Teacher explains and reinforces the topics of eating out, indefinite pronouns and ordering a meal through Power Point presentations (See annex 1)		20min
Practice		**Time**
• The teacher projects an interactive video lesson about restaurants and ordering food around the world called "Restaurant menu with Mr. Bean", students must answer each question with the correct expression, related to each scene presented during the different time stamps of the video (see annex 2)		20min

• Students complete the activities 1 and 2 from the page 68 of the book. (See annex 3)	
Production	**Time**
• Students complete the lesson #1	30min
Assessment	**Time**
• Students complete and practice their vocabulary about worldwide restaurants through a study set (ELSA Speak) shared by the teacher (See annex 5)	
	10min

Intervention plan # 1	
Class: 2do BGU "D"	**Date:** From May 2nd to 4th
Number of Students: 22 (11 boys, 11 girls)	**Schedule:** Tuesday 7h10 – 8h30 (2 periods)
	Thursday 11h40 – 12h20 (1 period)
Language Level: B1.1	**Time per lesson:** 40 minutes
	Total hours: 3 hours
School year:	2022-2023
Type of institution:	Public
Preservice teacher:	Bernardo Agustin Bustamante Rojas
Research Problem	How does ELSA Speak application enhance speaking skills among second-year high school students at a public institution in Loja, during the 2022-2023 year?
Lesson Topic	Past Continuous / Use of When and While
Lesson Objectives	Students will understand the difference between "when" and "while" and be able to use them correctly in sentences and speeches. Through interactive and accurate study sets, students will be able to practice using ELSA Speak app to improve their pronunciation, vocabulary, grammar and fluency when using these conjunctions in context. Instant feedback and scoring increases the effectiveness of each stage, students will be able to adjust and improve its oral production as soon as possible.
Pre-Speaking	Teacher presents a sort of images which are part of the following activity, and asks students to think about what it refers to. Images about the characters, culture, values to be left and identities. Students jot down ideas and express its purpose for the following speaking experience. Thus, presents the "Chinese Folk Story" (reading).
While-Speaking	The students read the text aloud, and orally produce a short opinion about the message behind the story. then its speaking skills are put into test through ELSA Speak app, which is going to feedback and present a diagnostic about how well each word has been spoke, through the "Study set" feature. Consequently, highlights by the color red an average pronunciation, and by color green, an accurate one.
Post Speaking	The students work in groups to discuss their score, and put into practice the suggestions and room of improvement provided from the ELSA Speak app, in form highlighted phonemes, audiovisual lessons, study sets, coach and speech analyzers. Suddenly, they set goals for improvement and reflect upon their own speaking
Materials /Bibliography/Research Instruments	-Pre/post test -Flashcards -Worksheet -ELSA Speak Study Set: https://share.elsanow.io/5fa6Gb02Ezb?~channel=recent_contact -Elsa Speak Application -Smartphone

<table>
<tr><td>_____
Institutional Teacher
Mgtr. Javier Agila</td><td>_____
Thesis Director
PhD. Marcia Criollo</td></tr>
<tr><td>_____
Academic Tutor
Mgtr. Miriam Eucevia Troya Sánchez</td><td>_____
Preservice Teacher
Bernardo Bustamante</td></tr>
</table>

Intervention plan # 2	
Class: 2do BGU "D" **Number of Students:** 22 (11 boys, 11 girls) **Language Level:** B1.1	**Date:** From May 9th to 11th **Schedule:** Tuesday 7h10 – 8h30 (2 periods) Thursday 11h40 – 12h20 (1 period) **Time per lesson:** 40 minutes **Total hours:** 3 hours
School year:	2022-2023
Type of institution:	Public
Preservice teacher:	Bernardo Agustin Bustamante Rojas
Research Problem	How does ELSA Speak application enhance speaking skills among second-year high school students at a public institution in Loja, during the 2022-2023 year?
Lesson Topic	Electronic Devices
Lesson Objectives	By using the ELSA Speak application, students will be able to practice and refine their pronunciation of words and phrases related to electronic devices. They will aim to enhance their fluency and natural speech patterns. Through interactive and accurate study sets, students will be able to practice using ELSA Speak to improve their pronunciation, vocabulary, grammar and fluency when using these electronic devices. Through the speech recognition feature, students will receive feedback on their intonation and stress patterns while speaking about electronic devices. They will aim to improve their spoken English rhythm and emphasis.
Pre-Speaking	Teacher projects images which are part of the following activity, and asks students to think about what it refers to. Images about the influence of electronic devices, importance, limitations and dependence. Students jot down ideas and express its purpose for the following speaking experience. Thus, presents the "Social Media Addiction" (video).
While-Speaking	The students orally produce a short opinion about the message behind the video. then its speaking skills are put into test through ELSA Speak app, which is going to feedback and present a diagnostic about how well each word has been spoke, at its components of the speaking. Consequently, highlights by the color red an average pronunciation, and by color green, an accurate one.
Post Speaking	The students work in groups to discuss their score, and put into practice the suggestions and room of improvement provided from the ELSA Speak app. Suddenly, they implement the use of the "Dictionary" feature, in order to look up the meaning and correct pronunciation of any word or phrase.
Materials /Bibliography/Research Instruments	-Projector, video: https://bit.ly/41ORBlL -Elsa Speak Application -Smartphone

_____

Institutional Teacher
Mgtr. Javier Agila

_____

Thesis Director
PhD. Marcia Criollo

_____

Academic Tutor
Mgtr. Miriam Eucevia Troya Sánchez

_____

Preservice Teacher
Bernardo Bustamante

<table>
<tr><td colspan="2" align="center">Intervention plan # 3</td></tr>
<tr>
<td>Class: 2do BGU "D"

Number of Students: 22 (11 boys, 11 girls)

Language Level: B1.1</td>
<td>Date: From May 16th to 18th

Schedule: Tuesday 7h10 – 8h30 (2 periods)

Thursday 11h40 – 12h20 (1 period)

Time per lesson: 40 minutes

Total hours: 3 hours</td>
</tr>
<tr>
<td>School year:</td>
<td>2022-2023</td>
</tr>
<tr>
<td>Type of institution:</td>
<td>Public</td>
</tr>
<tr>
<td>Preservice teacher:</td>
<td>Bernardo Agustin Bustamante Rojas</td>
</tr>
<tr>
<td>Research Problem</td>
<td>How does ELSA Speak application enhance speaking skills among second-year high school students at a public institution in Loja, during the 2022-2023 year?</td>
</tr>
<tr>
<td>Lesson Topic</td>
<td>Present Perfect</td>
</tr>
<tr>
<td>Lesson Objectives</td>
<td>Students will be able to talk about past actions or experiences that have a connection to the present, which are in relation with present perfect. They will learn to express events that happened at an indefinite time or have ongoing relevance.
Through interactive and accurate study sets, students will be able to practice using ELSA Speak app to improve their pronunciation, vocabulary, grammar and fluency when using these conjunctions in context.
Through reading exercises, students will enhance their comprehension and speaking skills by understanding texts then recording voice notes through ELSA Speak app that utilize the present perfect tense.</td>
</tr>
<tr>
<td>Pre-Speaking</td>
<td>Teacher presents images which are part of the following activity, and asks students to think about what it refers to. Images about the characters, events, tense, scenarios and topic. Students jot down ideas and express its purpose for the following speaking experience. Thus, presents the "The Misadventures of Mr. Bean" (reading).</td>
</tr>
<tr>
<td>While-Speaking</td>
<td>The students read the text aloud, and orally produce a short opinion about the message behind the story. then its speaking skills are put into test through ELSA Speak app, which is going to feedback and present a diagnostic about how well each word has been spoke, at its components of the speaking. Consequently, highlights by the color red an average pronunciation, and by color green, an accurate one.</td>
</tr>
<tr>
<td>Post Speaking</td>
<td>The students work in groups to discuss their score, and put into practice the suggestions and room of improvement provided from the ELSA Speak app. Suddenly, based on their results students reflect and practice their speaking through the "Course Finder" feature. This feature will filter the application`s content to find the most relevant lesson for the students.</td>
</tr>
<tr>
<td>Materials /Bibliography/Research Instruments</td>
<td>-Worksheet
-ELSA Speak Study Set: https://bit.ly/3BA8cPU
-Elsa Speak Application
-Smartphone</td>
</tr>
<tr>
<td colspan="2">

_____   _____
    Institutional Teacher   Thesis Director
      Mgtr. Javier Agila   PhD. Marcia Criollo

_____   _____
     Academic Tutor   Preservice Teacher
Mgtr. Miriam Eucevia Troya Sánchez   Bernardo Bustamante</td>
</tr>
</table>

	Intervention plan # 4

Class: 2do BGU "D"	**Date:** From May 23rd[th] to May 25th
Number of Students: 22 (11 boys, 11 girls)	**Schedule:** Tuesday 7h10 – 8h30 (2 periods)
Language Level: B1.1	Thursday 11h40 – 12h20 (1 period)
	Time per lesson: 40 minutes
	Total hours: 3 hours
School year:	2022-2023
Type of institution:	Public
Preservice teacher:	Bernardo Agustin Bustamante Rojas

Research Problem	How does ELSA Speak application enhance speaking skills among second-year high school students at a public institution in Loja, during the 2022-2023 year?
Lesson Topic	Communication Breakdown
Lesson Objectives	By using the ELSA Speak application, students will be able to refine their pronunciation of words and phrases related to electronic devices used for chatting, the have a conversation breakdown. ELSA Speak will be able to practice and improve the student's pronunciation, vocabulary, grammar and fluency when having a conversation.
Pre-Speaking	Teacher projects images which are part of the following activity, and asks students to think about what it refers to. Images about the influence of electronic devices used for conversations, chatting, importance, limitations and dependence. Students jot down ideas and express its purpose for the following speaking experience. Thus, presents the "Comparing the Past and the Present" (video).
While-Speaking	The students read the text aloud, and orally produce a short opinion about the message behind the video. then its speaking skills are put into test through ELSA Speak app, which is going to feedback and present a diagnostic about how well each word has been spoke, at its components of the speaking. Consequently, highlights by the color red an average pronunciation, and by color green, an accurate one.
Post Speaking	The students work in groups to discuss their score, and put into practice the suggestions and room of improvement provided from the ELSA Speak app. Moreover, an upgrade to the previous features is added, then the students asses themselves through the "Coach" feature, in order to practice lessons recommended by this coaching assistance.
Materials /Bibliography/Research Instruments	-Projector, video: https://bit.ly/3BTYzM8 -Elsa Speak Application -Smartphone

_____
Institutional Teacher
Mgtr. Javier Agila

_____
Thesis Director
PhD. Marcia Criollo

_____
Academic Tutor
Mgtr. Miriam Eucevia Troya Sánchez

_____
Preservice Teacher
Bernardo Bustamante

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<tr><td colspan="2" align="center">Intervention plan # 5</td></tr>
<tr>
<td>Class: 2do BGU "D"

Number of Students: 22 (11 boys, 11 girls)

Language Level: B1.1</td>
<td>Date: From Jun 5th to Jun 7th

Schedule: Tuesday 7h10 – 8h30 (2 periods)

Thursday 11h40 – 12h20 (1 period)

Time per lesson: 40 minutes

Total hours: 3 hours</td>
</tr>
<tr><td>School year:</td><td>2022-2023</td></tr>
<tr><td>Type of institution:</td><td>Public</td></tr>
<tr><td>Preservice teacher:</td><td>Bernardo Agustin Bustamante Rojas</td></tr>
</table>

Research Problem	How does ELSA Speak application enhance speaking skills among second-year high school students at a public institution in Loja, during the 2022-2023 year?
Lesson Topic	Communication Breakdown
Lesson Objectives	By using the ELSA Speak application, students will be able to refine their pronunciation of words and phrases related to electronic devices used for chatting, the have a conversation breakdown. ELSA Speak will be able to practice and improve the student's pronunciation, vocabulary, grammar and fluency when having a conversation.
Pre-Speaking	Teacher brings a couple images referring to the previous themes that were acknowledged during the pre-test, in order to familiarized the students with it.
While-Speaking	The students complete and fill the post-test worksheet, which involves activities to diagnose their speaking skills after the intervention.
Post Speaking	The students work in groups to discuss their results and share opinions about their experience using ELSA Speak app during the test, students proceed to put themselves in touch with the app, and continue working through the "Coach" feature.
Materials /Bibliography/Research Instruments	-Flashcards -Elsa Speak Application -Post-test -Smartphone

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<tr>
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Institutional Teacher
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