Universidad Nacional de Loja

Facultad de la Educación, el Arte y la Comunicación

Carrera de Pedagogía de los Idiomas Nacionales y Extranjeros

Technological resources and reading comprehension skills among superior basic education students at a public institution in Loja, academic year 2023 – 2024

Recursos tecnológicos y habilidades de comprensión lectora en estudiantes de educación básica superior de una institución pública de Loja, año académico 2023 - 2024

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

AUTORA:

Angie Michelle Yaguana Ramírez

DIRECTOR:

Mg. Sc. Jhimi Bolter Vivanco Loaiza

Loja – Ecuador

2024

Certification

Mg. Sc. Jhimi Bolter Vivanco Loaiza
DIRECTOR DEL TRABAJO DE INTEGRACIÓN CURRICULAR

CERTIFICO:

Que he revisado y orientado todo el proceso de elaboración del Trabajo de Integración Curricular denominado **Technological resources and reading comprehension skills among superior basic education students at a public institution in Loja, academic year 2023 – 2024,** previo a la obtención del título de **Licenciada en Pedagogía del Idioma Inglés,** de la autoría de la estudiante **Angie Michelle Yaguana Ramírez,** con **cédula de identidad Nro**. **1150798682**, una vez que el trabajo cumple con todos los requisitos exigidos por la Universidad Nacional de Loja, para el efecto, autorizo la presentación del mismo para su respectiva sustentación y defensa.

Firmado electrónicamente por:
JHIMI BOLTER
VIVANCO LOAIZA

Mg. Sc. Jhimi Bolter Vivanco Loaiza

DIRECTOR DEL TRABAJO DE INTEGRACIÓN CURRICULAR

Carta de autorización por parte de la autora, para la consulta, reproducción parcial o total, y/o publicación electrónica de texto completo, del Trabajo de Integración Curricular.

Yo, **Angie Michelle Yaguana Ramírez**, declaro ser autora del Trabajo de Integración Curricular denominado: **Technological resources and reading comprehension skills among superior basic education students at a public institution in Loja, academic year 2023 – 2024**; autorizo al sistema Bibliotecario de la Universidad Nacional de Loja para que, con fines académicos, muestre la producción intelectual de la Universidad, a través de la visibilidad de su contenido en el Repositorio Institucional.

Los usuarios pueden consultar el contenido de este trabajo en el Repositorio Institucional, en las redes de información del país y del exterior con las cuales tenga convenio la Universidad.

La Universidad Nacional de Loja, no se responsabiliza por el plagio o copia del Trabajo de Integración Curricular que realice un tercero.

Para constancia de esta autorización, en la ciudad de Loja, a los treina días del mes de abril de dos mil veinticuatro.

Firma:

Autora: Angie Michelle Yaguana Ramírez

Cédula: 1150798682

Dirección: Loja-Loja-Ecuador

Correo electrónico: angie.yaguana@unl.edu.ec

Teléfono: 0990838928

DATOS COMPLEMENTARIOS:

Directora del Trabajo de Integración Curricular: Mg. Sc. Jhimi Bolter Vivanco Loaiza

Dedication

To God, for protecting me throughout my journey and giving me the strength to overcome obstacles and difficulties throughout my life and for allowing me to reach this special moment.

To my parents Sandra Ramírez and Patricio Yaguana for all their love and for encouraging me to be better every day, for supporting me even on bad days and for helping me specially economically, and for all their advice that has guided me to complete my professional career.

To my siblings Patricia, Daniela, Brigy, Juan and Scarleth and my adorable niece Genesis who through the ups and downs, have been my confidants, my partners of laughter, and above all my emotional support and I hope it serves as an example that everything can be achieved.

Angie Michelle Yaguana Ramírez

Acknowledgments

First of all, I am infinitely grateful to God for having given me the strength and courage to complete this stage of my life.

I would also like to show my greatest appreciation to the Universidad Nacional de Loja, the Facultad de la Educación, el Arte y la Comunicación and the English Department for supporting my learning process to complete my studies successfully.

Furthermore, I would like to thank the Unidad Educativa "Pío Jaramillo Alvarado" who gave me the opportunity to carry out my research. In addition, my sincere gratitude to the institutional tutor Mgtr. Adriana Prado and the students for giving me the opportunity to develop my intervention plan with them.

To my friends Adelaida and Erika for always being there for me in difficult times, and whose support and knowledge made this experience one of the most special.

Finally, my deepest appreciation to my thesis advisor Mgtr. Jhimi Bolter Vivanco Loaiza, for guiding me during the whole process of this work with patience, encouragement, and valuable knowledge.

Angie Michelle Yaguana Ramírez

Index of contents

Index of Tables:

Index of Figures:

Index of annexes:

1. Title

Technological resources and reading comprehension skills among superior basic education students at a public institution in Loja, academic year 2023 – 2024

2.   Resumen

La comprensión lectora implica un proceso intencional, comprometido y dinámico dentro de la adquisición del idioma inglés, que tiene lugar antes, durante y después de un texto, por ello, el presente Trabajo de Integración Curricular trata sobre el uso de los recursos tecnológicos y la comprensión lectora. Dentro de esos recursos se encuentran las tarjetas digitales, Quizizz, y mapas mentales en Canva, con el fin de explorar sus beneficios para mejorar los aspectos de vocabulario, conocimientos previos y resumen. Este estudio tiene como objetivo: Mejorar la comprensión lectora mediante el uso de recursos tecnológicos en estudiantes del nivel básica superior en una institución pública de Loja. En relación a este objetivo se establecieron dos sub objetivos, el primero relacionado con identificar la eficacia del uso de recursos tecnológicos para mejorar la comprensión lectora y el segundo enfocado en describir la percepción de los estudiantes respecto a la aplicación de recursos tecnológicos para mejorar las habilidades de comprensión lectora. El enfoque de investigación utilizado fue el método mixto basado en la investigación acción en el que el investigador usó métodos cuantitativos y cualitativos para lograr una mejor comprensión del problema. Además, se utilizaron notas de campo y una encuesta para recoger datos cualitativos relacionados con la perspectiva del estudiante, los cuales fueron interpretados a través de estadística descriptiva y examinados con análisis temático. Los resultados obtenidos de la implementación de recursos tecnológicos, revelan un impacto positivo y significativo en la mejora de la comprensión lectora entre los estudiantes. Finalmente, mediante el uso de estos recursos, la investigadora concluyó que los alumnos fueron capaces de comprender textos complejos facilitando un conocimiento profundo de la comprensión lectora. De este modo, permitió a los alumnos convertirse en lectores más independientes y activos, utilizando los recursos tecnológicos para navegar por los textos con mayor destreza.

Palabras clave: Comprensión lectora, beneficios, habilidades, lectura activa, recursos tecnológicos

2.1 Abstract

Reading comprehension implies an intentional, committed and dynamic process within the acquisition of the English language, which takes place before, during and after a text, therefore, this Curricular Integration Work deals with the use of technological resources and reading comprehension. Among these resources are digital flashcards, Quizizz, and mind maps in Canva, in order to explore their benefits to improve the aspects of vocabulary, background knowledge and summarizing. The objective of this study is: To improve reading comprehension by the use of technological resources among superior basic education students at a public institution in Loja. In relation to this objective, two sub-objectives were established, the first related to identifying the effectiveness of the use of technological resources to improve reading comprehension and the second focused on describing the perception of students regarding the application of technological resources to improve reading comprehension skills. The research approach used was the mixed method based on action research in which the researcher used quantitative and qualitative methods to achieve a better understanding of the problem. In addition, field notes and a survey were used to collect qualitative data related to the student's perceptions, which were interpreted through descriptive statistics and examined with thematic analysis. The results obtained from the implementation of technological resources reveal a positive and significant impact on the improvement of reading comprehension among students. Finally, through the use of these resources, the researcher concluded that students were able to comprehend complex texts facilitating a deep understanding of reading comprehension. In this way, it allowed students to become more independent and active readers, using the technological resources to navigate through the texts with greater dexterity.

Key words: Comprehension, benefits, skills, active reading

3.   Introduction

Reading comprehension encompasses an intentional, engaged, and dynamic process that takes place before, during, and after a student's interaction with a particular written work. Escar (2022) stated that "Reading comprehension is the key to all other learning abilities. It helps students expand their vocabulary, learn more about real life and understand complex concepts". In addition, it is a complex process that requires children to quickly and accurately recognize the words in a text, while simultaneously constructing meaning. Comprehension involves three elements: the reader who makes the comprehension, the text to be understood and the activity in which the comprehension is framed (Butterfuss et., al 2020). In this sense, exploring the use of technological resources becomes essential to improve reading comprehension process. Therefore, the more students delve into reading comprehension, the more understanding is enriched and the frontiers of knowledge are expanded.

Nevertheless, this research project was of great importance in addressing the reading comprehension skill problems faced by students. By exploring the potential of technological resources, the researcher focused on providing an interactive and personalized learning experience that can be useful in the development of reading comprehension. It will also allow learners to focus on the reality and thus have the opportunity to be able to read.

During the practicums the researcher detected that only a small number of students showed an acceptable comprehension in reading, however, most of them presented weaknesses. In addition, some aspects of reading comprehension were identified as key problems affecting students' development, such as vocabulary, background knowledge and summarizing. Therefore, these mentioned problems are the factors that make the students worry and feel no interest in learning the English language. Moreover, these problems were essential for the researcher to wonder about how the technological resources improve reading comprehension skills. Based on Noordan et al. (2022), "the integration of technological resources into English language teaching has provided a student-centered learning environment by allowing teachers to vary the styles of conducting classes to motivate students".

Similarly, this problem has been identified in previous studies, where the researcher is agree with Bautista (2020) that carried out a research on The Use of Technological Tools to Strengthen the Reading Comprehension Process in English, where he aimed to examine the extent to which the use of technological tools helps students improve their reading comprehension skills in English, the implementation of new strategies like the use of ICT can influence students' attitudes and this leads students to improve their reading process. Also, Muñoz (2021), carried out a research called "Technological Learning Resources to Develop

4

A1 Students' English Reading Skills" with students of the Language Center of the Instituto Superior Tecnológico Cotopaxi, the results obtained by Cronbach's Alpha showed a coefficient above 0.8, which means that the instrument of the integration of technological learning resources has excellent internal consistency.

Although the availability of educational technology tools is increasing, there may be knowledge gaps on how to integrate these tools to improve reading comprehension without compromising the fundamental principles of effective reading instruction, there are some gaps that researchers highlight for future researchers to fill this knowledge gap. Diallo (2023), suggested that the technologies are well received by most students, teachers and parents, and can be very useful for both teachers and parents in helping their students with reading.

Furthermore, this research study was significant, as they provided information on the use of technological resources to improve reading comprehension skills among students, which benefited educators, preservice teacher and students through the use of these resources to make classes more interactive and participatory. Furthermore, for the researchers, this study provides information on the integration of technological resources as language learning materials, highlighting their potential advantages and limitations. Researchers can use this information to further explore the effectiveness of these resources in educational settings and develop more in-depth studies in the language field. Furthermore, it was demonstrated that the technological resources are pedagogical materials that help learners to be more active and motivated while learning and improve their reading comprehension in a dynamic way, as they were able to improve their ability to acquire background knowledge, identify new vocabulary words and above all learn to summarize important ideas from a text. Likewise, these resources encourage the incorporation of innovative approaches in the classroom, which motivates students to learn new things and create a good classroom environment.

Moreover, the scope of this research covered the application of technological resources through lesson plans covering the types of these resources such as digital flashcards, Quizziz and mind maps: Canva, to improve reading comprehension, in particular its aspects, which are vocabulary, background knowledge and summarizing. Therefore, the participants of this study were 32 eighth grade students from a public institution in Loja, academic year 2023-2024. The intervention was developed in a period of eight weeks for more than 24 hours where it was found that the use of technological resources was positively received by the students. However, there were some limitations such as the short period of time for the execution of the intervention plan and unforeseen events during the intervention.

Eventually, to develop this research project, the following general objective was proposed: To improve reading comprehension by the use of technological resources among superior basic education students at a public institution in Loja, academic year 2023 – 2024. To achieve this goal two specific objectives were established: To identify the effectiveness of the use of technological resources to improve reading comprehension and, to describe the students' perceptions about technological resources to improve reading comprehension among superior basic education students at a public institution in Loja, academic year 2023 – 2024.

This research work begins with an introduction in which the background of the topic to be addressed is presented. Subsequently, the theoretical framework is presented, full of theoretical foundations that guided this work. This is followed by the methodology section, which details the research design, method, techniques and instruments used. Then, in the results section, the differences observed between the pre-test and post-test scores are presented, as well as the results of the questionnaire. In addition, in the discussion section, a comparison of these results with previous research by other authors is established. After that, the conclusions and recommendations obtained from the analysis of the results obtained are presented in a clear and concise manner. This is followed by the bibliography that was used as reference material for this research. Finally, annexes such as Pre-test/Post-test, Scoring Guide/Answer Sheet, Rubrics, Questionnaire, Field Notes, National Rating Scale, Informed Consent Form and Class Plans are presented.

<div align="center">

4. Theoretical framework

</div>

The following research will describe the theoretical foundations gathered from different authors and primary sources that will be related to the independent and dependent variables. Furthermore, this literature review will contribute to the educational field as it will allow readers to learn how to improve reading comprehension in English with technological resources.

4.1 Technological resources

4.1.1 *Definition*

"Technological resources mean any electronic communication system and electronic equipment, including, but not limited to, the network, online platforms, computers, communication systems, software, telephones and systems with similar functions" (Law insider, 2023, p. 1). Technological resources are constantly evolving and expanding, driven by advancements in technology. They play a crucial role in increasing efficiency, facilitating communication, enabling innovation, and supporting various aspects of personal and professional life.

According to Law Insider (2023), Technological resources are used to promote and enhance education. Limited personal use of these resources is permitted if it imposes no tangible cost, does not unduly burden the District's network resources, and has no effect on student academic performance. In the digital world, teachers have the best technology at their disposal to facilitate classroom teaching, engage students, and promote the learning process.

"Technology is a process, method or knowledge used for relevant purposes. It is best when used as a resource to help solve problems. "It is also an important part of an effective approach to language learning when used to solve problems and improve learners' language learning" (Altun & Ahmad, 2021, p. 226). The use of technological resources provides students with the concepts of self-regulation, personal content, new language patterns, and motivation to create innovation in these materials for collaboration and interaction between teachers and students (Murray, 2005). Technological resources offer a wide range of possibilities for social mediation to create, favor and enrich interpersonal learning contexts. Technology is present in almost every aspect of daily life, becoming key factors in culture, economics, education and politics, with diverse effects on the world's population. Technology is present in almost every aspect of daily life and has become an important part of culture, business, education and politics, creating many impacts on the world's population.

As we live in the world of technology we need it as a second aid. For instance, technology has created the most powerful human communication system in the world; has

allowed people to communicate with anyone wherever they are, and also within the educational environment since there are many tools that nowadays help and engage with meaningful learning of students. Moreover, it is a "comprehensive process based on the application of science and knowledge in many areas of life in an orderly and thoughtful manner to achieve important and valuable ends for individuals and communities" (The Scientific World, 2019)

4.1.2 *Importance*

The importance of technology in our society today is the main source of progress. Technological resources are important in education because they are tools that nowadays help teachers to improve learning. It is also important because it is used in all areas of life. The Scientific World (2019), states "Every day we rely more and more on technology, whether it is during communication or transportation or searching for any information or even entertainment".

According to Lopera (2023):

New technological tools have amplified the social nature of learning and placed people at the center of the process, i.e., learning is nowadays characterized by the connection between people regardless of their experience, the place where they are, or whether they are students or teachers; today everyone learns from others and with others. (p. 99)

Technology plays an important role in education and has been of increasing importance in modern classrooms because it provides students with the necessary resources and tools to develop various essential skills, such as problem solving, comprehension and teamwork. It also allows them to learn about various digital tools and platforms, which helps them become confident and competent learners. Raja & Nagasubramani (2018) claim that "Thanks to technology, education has changed from passive and inactive to interactive and active" (p. 34). "Integrating technology into the classroom helps improve English language learning. Beyond traditional methodologies, technology offers many learning opportunities. Thus, teachers have many resources and materials to use in their classrooms" (Altun & Ahmad, 2021).

The incorporation of technology into education has been shown to have beneficial effects, especially when integrated into thoughtful and deliberate lesson plans. According to some researchers, technology-enhanced education facilitates more innovative and engaging teaching methods, increasing student motivation and efficiency in real-world learning scenarios (Wei et al., 2021). The significance of technology in educational settings is undeniable, as it contributes to a more enjoyable teaching and learning experience. "The use of technological resources has become a necessity, not a privilege, because technology is included

8

in every area of our life, mobile phones, apps, computers, smart homes, and many things we cannot here count constitute the abundance of examples" (Yılmaz, 2020).

4.1.3 *Technological resources for English teaching learning*

Technology motivates students to engage in independent learning, encouraging responsible behaviors and the development of advanced cognitive skills. It helps students overcome learning challenges and discover effective and meaningful ways to apply acquired knowledge. In addition, technology helps teachers modify classroom activities, thus enriching the language learning experience. Its importance as a tool for teachers to facilitate language learning continues to grow" (Srinivasa et al., 2023). Teaching with technology is a broad topic that includes the role of implementing and integrating multimedia tools within Learning Management Systems (LMSs) and those that operate more independently across the Internet. It also entails many different types of media and their uses. "Students can use technological resources in their learning process through computers and the Internet for effective learning, in a way that can help them develop higher level thinking skills" (Altun & Ahmad, 2021). Technology offers teaching resources and provides students with a learning experience in the world.

According to Sanako blog (2021), language teachers have the option of incorporating a wide variety of digital materials such as e-books, audio files, videos, and online articles into their teaching materials. These digital resources offer greater flexibility and can be easily updated, making them an invaluable asset in the field of language teaching. Educational technology tools can help language teachers keep students engaged and improve language learning outcomes. "The use of the technological resources has become an essential part of the learning process inside and outside the classroom and is considered an essential part of modern schools and colleges" (Ahmadi, 2018).

Based on Noordan and Yunus (2022), "the integration of technology resources into English language teaching has provided a student-centered learning environment by allowing teachers to vary the styles of conducting classes to motivate students". However, it is crucial to examine the latest insights on how modern students prefer to use technology and understand the specific impact it has on their learning experiences.

The role of technology in education has four parts: as part of the curriculum, as a teaching method, as a teaching aid, and as a tool to support learning at all levels. "Using technology in the classroom can encourage English language students to achieve English. Technology offers many ways to learn besides traditional methods. Therefore, teachers have a lot of teaching and information at their disposal" (Altun & Ahmad, 2021). According to Lopera

(2023), students should be complemented and accompanied by the teacher in their learning process, as an active process through which they can take advantage of modern technological resources and help them detect what is really important from what is not. (p.97)

Technological tools offer a varied panorama of resources to search for information, teach and learn, communicate, and collaborate with each other, as well as to edit and publish content or information; they allow the creation of new knowledge networks and optimize the exchange of information and the coordination of activities. "Technologies thus become a tool to help students acquire their learning in a much more efficient and meaningful way" (Lopera, 2023).

Noordan, and Yunus (2022) stated that teachers should integrate technology in the classroom to encourage student participation and increase achievement. Online learning theory suggests that students have the opportunity to interact with content on different platforms and choose the learning plan in turn by teachers.

4.1.4 *Technological resources to improve reading comprehension*

The use of technological resources in the classroom can be very beneficial in increasing reading comprehension. According to Ahmadi (2018), students can use technology to transform their learning and access a variety of experiences that teachers cannot provide. Teachers need to be updated with new technologies to be relevant to the teaching process. The use of technology in teaching English is defined as the use of creative ideas, tools, equipment and materials for direct teaching purposes and to facilitate the achievement of the desired purpose. This is especially important when teaching reading comprehension because it has many opportunities for improvement (Qizi, 2021). "Technological resources are currently a particularly good motivational tool for students with reading difficulties. They can choose digital text and engage in multimedia reading activities to improve their reading comprehension" (Scharaldi, 2020). Through technological resources, students can have access to images and other content to help them increase their knowledge of times, places and contexts of reading.

Technological resources create interactive learning experiences that go beyond passive reading. Students can interact with multimedia elements, engage in virtual discussions, collaborate with peers, and participate in interactive exercises that promote deeper comprehension and critical thinking skills. "Teachers and students can take advantage of the benefits of technological resources to provide dynamic and interactive reading experiences that enhance comprehension, adapt to individual needs, and foster a love of reading" (Scharaldi, 2020). It is important to integrate technology in a purposeful and thoughtful way, ensuring

alignment with pedagogical goals and providing appropriate guidance and support for effective use.

The use of multiple technologies is becoming an almost mandatory tool to facilitate and improve teaching in the classroom specially to improve reading comprehension. From a very young age, children are exposed to different types of technologies.

4.1.5 *Types of technological resources*

4.1.5.1 *Digital flashcards.* They are cards that contain very little information such as words, sentences, questions, pictures, numbers and even some drawings. They are useful for learning and learning activities that involve memory. "This is because they attempt to improve a learner's active recollection of a topic's details" (Dutta, 2021). Flashcards improve memory, allowing students to quickly understand the material. Using digital flashcards as a teaching tool in the classroom can improve students' memory and retention of information.

Digital flashcards have become an effective tool for improving vocabulary. These interactive and customizable resources offer several advantages in vocabulary acquisition, such as accessibility and convenience, interactive learning, and the integration of gamification elements that make them valuable resources for learners to improve their vocabulary skills. "For students who are used to looking at the computer or notebook every day, online flashcards will be more useful. Nowadays, teachers can use many websites and applications to create different types of flashcards online" (Dutta, 2021).

They are the most widely used visual aid in language teaching, as they can be fun and colorful and children are more interested in learning vocabulary. "Flashcards are highly effective when it comes to making training materials enjoyable, they can contain important words, one-liners, images, or numbers that allow students to learn quickly and test themselves on the same, right after" (Oustlabtraining, 2021). They also offer additional opportunities from a new and more interesting perspective so as not to revert to old teachings. Additionally, it allows students to create multiple individual or group flashcards or simply use original flashcards created by others in different learning environments. However, creating a set of flashcards is not as easy as "clicking a button" (Colbran et al., 2014).

They can have some essential assets over paper flashcards in the sense that they help students learn more effectively. First, they are eye-catching and communicative, which can increase their motivation and interest. Second, they are adaptable and personalize, which means that you can create your own flashcards according to your students' interest and preferences. Third, you can take digital flashcards anywhere without the need to carry any physical objects except your cell phone or computer. Finally, they are based on validated fundamentals, such as

active memory, comprehension and feedback, which can improve learning performance (Ngarofah & Sumarni, 2018).

4.1.5.2. *Digital Pre-Assessments: Quizizz.* Pre-assessment focuses on the specific content that will be taught in a unit or series of lessons **(Brookhart & Lazarus, 2020).** Outcomes should describe students' planning, thinking, and understanding of specific content. "Pre-assess with just a few questions or tasks that are tightly aligned with the learning goal to be taught and stimulate students' thinking, inviting them to learn more" **(Hockett & Doubet, 2014)**. "Pre-assessment is done before teaching and its results depend on the quality of the questions or tasks answered by the students.

It is an interactive assessment tool where students play together, but each at their own pace. Quizizz is a free website or app that allows you to create online quizzes in a recreational and fun way, where students can answer in different ways as in a live game, as homework or individually. As an educational resource, Quizizz allows teachers to promote spaces to evaluate student learning, provide immediate feedback to the answers given by students, and gamify the teaching and learning processes generated in a course. and learning processes generated in a course. Zhao (2019) defines this tool as follows "It is a game-based educational app, which brings multiplayer activities to classrooms and makes in-class exercises interactive and fun" (p. 37).

Quizizz, for instance, is a free pedagogical and technological digital platform for classroom activities that allows students to practice individually or in teams. The main purpose of this tool is to introduce or create self-paced formative assessments in a fun and engaging way for learners of all ages and levels, but in this study, it will be used as a tool for background knowledge activities so that learners know what the reading will be about. In addition, it provides students with immediate feedback so they can adjust their learning strategies as necessary (Rahayu & Purnawarman, 2019). "This platform is designed to help teachers create a more dynamic and fun learning environment, as well as to enable students to learn in a more interesting and less boring way" (Degirmenci, 2021). Furthermore, it offers ready-to-use tests that students can access and use, including tests of various content and difficulty levels. Teachers can choose the type of questions they want, such as multiple choice, true-false, or open-ended questions. Quizizz is a program that aims to help you work smarter, not harder. That's why it offers teachers the ability to assign a question bank to the class that is tailored to each student.

4.1.5.3. *Mind map: Canva.* A mind map shows the different ideas related to a particular topic. It is an effective resource for organizing ideas. The concept is usually shown in the middle as a central idea that branches off in different directions. Mind maps can help you visualize information, write notes, or plan new ideas. Bring your ideas to life by creating a visual organization of your thoughts so you can remember information, identify correlations, and see the bigger picture. Canva's free online mind map maker lets you quickly edit and customize professional mind map examples. Enjoy online whiteboard tools like custom sticky notes, shapes, and arrows to establish and connect interrelated ideas and highlight standout insights.

Mind maps are useful for:

- Brainstorming: individually and in groups.
- Summarizing information.
- Presenting and communicating ideas
- Taking notes.
- Reinforce information from various sources.
- Presenting information clearly.
- Study and memorize information.

A mind map is a very effective way of entering and extracting information, it is a simple and logical way of taking notes that literally captures ideas. In addition, it is designed to help summarize new information by join different ideas and above all to understand how they are related. Mind maps have a natural organizational structure in which lines, figures, words, and images are used according to simple and appropriate concepts to organize information.

In this study, we will focus more on summarizing information, so we will make use of Canva, an application that is of great support to make mind maps and is something easy to use, which will motivate students to be able to summarize. Furthermore, there is a free online mind map maker from Canva that allows you to quickly edit and customize professional mind map examples. Just choose the perfect template for you and start making free mind maps until your next moment, where you can also do collaborative work, where your team can access the mind map design, apply changes, leave comments, and pitch more ideas and subtopics.

Canva makes creative design easy for everyone. From publishing images, videos, and gifs to posters, websites, brochures, presentations, mind maps, etc. Additionally, it is an essential tool that can help you hone your design skills even if you're just starting out. "Canva is a popular design tool that serves within education to create projects, presentations that are not only attractive, but also collaborative to allow students to learn the basics of digital design"

(Edwards, 2022). In school, it is a very useful learning technology resource for retaining a large amount of information. It allows students and teachers to order notes, make summaries, and design courses. When you're all done, you can download your mind map as a JPG, PNG, or PDF file, share it on social media, or email it directly to someone. The options are endless and always one click away.

4.2 Reading comprehension

4.2.1 *Definition*

Reading comprehension is the way in which we understand the texts we read. It is based on understanding the words, comprehending the content and distinguishing the key points presented in the text read (Saputri, 2019). Escar (2022) says "Reading comprehension includes creating pictures of the words recently read. Students can stablish connections to their prior knowledge as they move through the text. They can simply respond comprehension questions and sum up pieces of the text or the whole text" (par. 4). "The real goal of reading is to quickly grasp the message of the text and create a cognitive, affective or behavioral difference in the person" (Kanmaz, 2022).

Furthermore, it is the fact of understanding what is read. Although the meaning may be simple, this is not easy to teach, learn or put into practice. "Reading comprehension is the foundation for all other learning abilities. It helps children expand their vocabulary, learn new things and understand complex information" (Escar, 2022). Reading comprehension involves a voluntary, engaged, and dynamic process that takes place before, during, and after an individual's interaction with a specific written work. Also, Helmers (2017) states that "it is a fundamental skill that students must learn from a young age. Some students can analyze the images, read the text fluently and recognize certain words, but are not able to comprehend it in its entirety".

It means just reading and interpreting what is written. It is a complex skill, since it involves recognizing appropriate words and, at the same time, detecting their meanings. This meaning represents the verbal level of reading and refers to the vocabulary level of reading comprehension (Groen et al., 2019). Reading comprehension requires the synthesis of a logical mental representation of the information presented in a text. According to Butterfuss et al. (2020) The difficulty of reading comprehension has led to the growth of some useful tools and techniques that attempt to explain the various processes that constitute reading comprehension: for example, the building of background knowledge, the abilities to recognize vocabulary words, and the way in which important points are formulated. Furthermore, it is a complex process that requires children to quickly and accurately recognize the words in a text, while

simultaneously constructing meaning. Comprehension involves a few components: the person performing the comprehension, the part of the text to be interpreted, and the activity in which the comprehension is framed (Butterfuss et al., 2020).

4.2.2 *Importance of reading comprehension*

"Reading comprehension is an important skill for understanding the textual world around us. It is a conspicuous process that involves making predictions, summarizing important parts, discussing one's predictions, and explaining information not understood" (Liou, 2021). Also, it is essential for academic achievement. It allows students to comprehend textbooks, research papers, and other study materials across various subjects. Strong reading comprehension enables learners to understand complex ideas, follow instructions, and effectively engage with the content, leading to better academic performance.

"Furthermore, it is essential to function successfully in our society as it becomes a fundamental part of our lives" (Ben-Aharon, 2021). Rutzler, (2020) said that reading comprehension is important in every student's life so that they can function in life. "It is a fundamental cognitive ability for children that supports school performance and, consequently, active participation in most areas of life" (Capodieci et al., 2020). Reading comprehension occurs when the words in a text are not just words, but reasoning and knowledge. Comprehension makes reading more enjoyable, fun and enlightening. It is necessary for school, work and other aspects of life. "Reading comprehension depends on forming a logical interpretation of the information in a text" (Dorothy, 2021).

Moreover, it is a fundamental skill that plays a vital role in our personal, educational, and professional lives. It is the ability to understand, interpret, and analyze written texts effectively. The goal of teaching reading comprehension is to develop students' comprehension skills so that they can read English texts with ease and understand what the text is trying to say. In order to read with ease and comprehend, students must have a specific goal in mind before engaging with the text.

It is also, a reader's ability to understand the explicit and implicit meaning of a text or piece of writing and requires the coordination of multiple linguistic and cognitive processes including word reading ability, working memory, inference generation, comprehension control, vocabulary, and prior knowledge. Improving reading comprehension with the help of technological resources can help your students become high-achieving students in and out of the classroom, as well as enhance the teaching and learning process.

4.2.3 *Stages of reading comprehension*

4.2.3.1. *Pre-reading.* This stage is focuses on the knowledge and proficiency of the student. In this stage, teachers present a topic through pre-reading activities. Pre-reading activities can activate learners' background and existing knowledge, allowing students to acquire new knowledge and make meaning from the text they read (Güzel, 2022). According to Toprak & Gamze (2009), "some of the activities presented at this stage include: discussing the author or type of text, brainstorming, reviewing familiar stories (students activate their background knowledge before reading), considering illustrations, and skimming and scanning (looking for structure, key points, and future directions)" (p.23).

Through pre-reading activities, teachers can help students become successful readers. These activities increase comprehension by activating students' background knowledge and generating interest in the topic (Dickson, 2022).

4.2.3.2. *During-reading.* Or through reading exercises help students develop reading strategies, such us improving their foreign language skills, interpret and comprehend problematic passages of text with ease (Toprak & Gamze, 2009). Students do a series of tasks that help them understand the text and which may help them develop reading skills. The first task should help students understand the text at a very general, non-specific level. "Activities during reading have two main objectives. First, they increase students' comprehension of the text. Second, they allow the teacher or paraprofessional to check whether students understand what they read and where they need help or support" (Telfer et al., 2021). Students think carefully and actively about what they are reading. This includes making connections to the text (text to text, text to self and/or text to world), asking questions, and making and revising predictions.

4.2.3.3.Post-reading. "After, beyond reading, the exercises first check comprehension and then lead students to a more detailed analysis of the text, when justified" (Toprak & Gamze, 2009), i.e. to be able to identify main ideas and to be able to answer questions related to the text. After During tasks, students need a chance to work further with the text, its topic, its content and/or vocabulary, functions or grammar used in it, further based on the text, it could be in groups. "When discussing as a group what they have understood, students focus on the information they did not understand correctly. Discussions of this type can lead the student directly into analysis of the text, as class discussion moves from fact-finding to exploration of the deeper ramifications of the text" (Toprak & Gamze, 2009).

4.2.4 *Types of reading comprehension*

Indicators of reading comprehension refer to the observable behaviors, skills, and knowledge that demonstrate a reader's ability to understand and make meaning from written texts. These indicators may vary depending on the age, grade level, and specific reading goals of the individual.

4.2.4.1. *Vocabulary.* Vocabulary is important for reading comprehension. Without knowing the meaning of most of it, students cannot understand what they read. Vocabulary in reading comprehension refers to students' knowledge and understanding of words and their meanings (Crossroads Therapy Speech, 2022). It encompasses the set of words and terms that individuals recognize, comprehend, and use in their reading and communication. "Vocabulary plays a crucial role in reading comprehension as it directly influences an individual's ability to understand and interpret written texts" (Alqahtani, 2015).

This is important because, in order to memorize the information that has just been read, students need to better understand the words that are new to them. All students take advantage of the vocabulary explanation, but it is the struggling students who benefit the most. "Vocabulary is often developed at an early age and serves as a useful and essential tool for communication and basic literacy acquisition. Enriching a useful vocabulary is one of the basic challenges in learning a second language" (Ngarofah & Sumarni, 2018, p. 776). The importance of vocabulary is demonstrated daily on and off campus. In class, the most advantaged students are those with the most sufficient vocabulary. Reference is often made to the meaning of new words, either in books or in verbal communication. Vocabulary is considered the important basis in language teaching.

Vocabulary plays an important role in the teaching of reading. Students beginning to read must first understand the words they hear in order to understand the words they see written. It is is key to reading comprehension. Students who hear more words anywhere learn much more vocabulary and find it easier to comprehend reading texts. "While students learn to read more complex texts, they have to learn the meaning of new words that are not part of their everyday vocabulary" (Rockets, 2013).

In reading comprehension, vocabulary is very important, as they support each other; the greater a person's knowledge of words and their meaning, the easier it will be to understand even complex texts. Vocabulary is essential for language learners to understand and comprehend the context of what is meant in texts. "Nowadays, there is an advantage to acquire vocabulary differently through computers, phones, and online tools, which have to be used forever and technology becomes a fundamental part of life" (İçin & Samet, 2018).

According to Susanto (2017), acquiring vocabulary plays an interesting role in the process of learning a foreign language. The significance of understanding the meanings of new words is frequently emphasized, whether in readings or verbal communication. Vocabulary holds a central position in language instruction and holds immense value for individuals learning a new language. "Vocabulary is basic in teaching reading comprehension because without adequate vocabulary students cannot understand written expressions and ideas or express their own ideas" (Aziz, 2015).

4.2.4.2. ***Background Knowledge.*** It is an important aspect of reading, as students will more readily derive meaning from a text if they already have a general sense of the topic at hand. The more they read and the more information they encounter in the course of their lives, whether at home or in school, the more they will know (Prescott, 2022). According to research from Digital Promise (2023), which advances equitable education systems by bringing together solutions across research, practice, and technology, "students typically rely more heavily on background knowledge as they progress through school, and are required to build upon prior background knowledge".

It also, helps students of all reading levels to better understand the text. The more students activate their background knowledge, the more their reading comprehension grows. It is also a fundamental element in determining a student's success in reading comprehension. Often, this element can make a difference in a student's level. Furthermore, it is essential to a student's ability to comprehend a text. When educators, understand the importance of this component, lessons are developed that lead students to become more independent thinkers and lifelong readers and learners.

Students' retention of background knowledge is a key part of teaching and improving their reading comprehension. Thus, in order for students to make sense of the text they read, they have to connect with it. Establishing connections to the text will help students memorize the information. Students should have sufficient knowledge about the topic of the reading. Background knowledge is very important as it gives students the opportunity to choose between different meanings of words, select relevant details and make conclusions about the text.

When students have background life experiences or have acquired information about a specific topic or content, their level of reading comprehension automatically increases. Thus, learners are able to easily analyze and comprehend, explain their perspective, interpret and summarize the text simply because they have more knowledge on the topic. The more information a learner has about a specific topic, the easier it is for them to read, remember and understand the text (Chiaro, 2021). One of the ways in which background knowledge can

facilitate understanding is by acquiring a foundation on which new information can be interpreted and developed. In order to create a level playing field to support and achieve a good reading level for students, it is necessary for teachers to consider the application of background knowledge in each reading class (Chiaro, 2021).

4.2.4.3. *Summarizing.* It is the process of reducing texts or a piece of information into a shorter format while keeping the main ideas, key points, and important details. It involves extracting the most relevant and essential information from a longer passage and presenting it in a concise and coherent manner. Teachers consider it a task that students can do naturally even though it involves complex cognitive processes; UOW (2013), says: "it is enough to identify the most important information in a text. A summary will always be much simpler than the original text, but summarizing is much more than copying a few sentences from a source and omitting others"

Summarizing enables students to distinguish the most important ideas in a reading, to disregard irrelevant information, and to integrate central ideas in a meaningful way. It is important to teach students to summarize because it improves their ability to understand what they read. Summarizing strategies can be used in almost all content areas (Rockets, 2013 par.1)

It also consists of students identifying the main idea of the text and interpreting it in their own words, i.e., what they understood about the reading. They should classify the information to determine which facts are important and which are not, using as few words as possible to explain the text (Brandon, 2023). It involves condensing and restating the main ideas, key details, and essential points of a text in a concise manner. It requires the reader to identify the most important information and discard irrelevant or less significant details. Summarizing not only helps to reinforce understanding but also aids in retaining and recalling information. By summarizing a text, students show their comprehension and their ability to extract and compile the necessary information.

Furthermore, it requires identifying significant words within a paragraph, finding the topic sentence (a statement that conveys the main message and is usually found at the beginning or end of a paragraph), expressing the idea of the sentence, and repeating this procedure until the entire text is completed. As children grow older and become more proficient, they also need to acquire the ability to recognize and disregard irrelevant information.

4.3 Previous studies

In a previous academic journal article written by Abbas Gilakjani in 2018, titled "The Effect of Online Learning Tools on L2 Reading Comprehension and Vocabulary Learning," a study was conducted with high school students. The objective of the study was to compare the impact of various digital tools, including online vocabulary games, media, and online word references, on reading comprehension and English as a foreign language (EFL) vocabulary learning. To achieve this objective, the researcher employed different data collection instruments and teaching materials, such as the vocabulary and reading sections of the Oxford Placement Test. After the study, all participants were submitted to three post-tests developed by the researcher from the materials discussed during the study. The findings revealed significant differences between the media, online games, and word reference groups. Notably, the media group demonstrated superior performance in vocabulary production compared to the online games and word reference groups. Furthermore, the online games group exhibited significantly better results than the word reference group.

Bautista (2020) carried out a research on The Use of Technological Tools to Strengthen the Reading Comprehension Process in English in Ninth Grade Students of Harold Eder School, in Palmira, where he intended to analyze to what extent the use of technological tools helps students to improve their reading comprehension skills in English. The methods implemented to collect data were Qualitative since the study was based on observing students´ attitudes, and behaviors when implementing the reading activities. It comprises a questionnaire to analyze students' attitudes toward English language and reading, as well as a pretest and a posttest, which were reviewed by descriptive analysis. Likewise, this data was compared between both groups, the experimental group and the control group; the implementation of new strategies like the use of ICT can influence students' attitudes and this leads students to improve their reading process. Finally, the researcher suggested applying strategies that allow students to develop this skill more easily, no matter what strategies but to include innovation in the classroom to awaken curiosity in students.

In an academic journal article written by Menendez et al. (2021) called "Use of interactive technological teaching resources to improve English language learning in university students" the research participants were university students of the Universidad Técnica de Babahoyo. In which proposed interactive teaching resources to improve English language learning in UTB students. In the same way the research was non-experimental. Documentary analysis and surveys were also applied. The students do not obtain good grades in the pretest at the beginning of the cycles. But for the teachers it is very important to know what knowledge the

students have. After the first six weeks of class, the students have to take a summative exam, where they demonstrate how much they have learned in the first quarter of the cycle, the minimum grade obtained in the group was better than the minimum obtained in the pretest, in the final test the results can better demonstrate the relationship between the use of the Interactive Technological Didactic Resources and an improvement in the results obtained by the students.

Muñoz (2021) carried out a research called "Technological Learning Resources to Develop A1 Students' English Reading Skills" with students of the Language Center of the Instituto Superior Tecnológico Cotopaxi. With the purpose of implementing a technological instrument for the development of reading competence in the English language on students of the "Instituto Superior Tecnológico Cotopaxi", in the present research work this type of documentary research has been used, based mainly on the CEFR for Languages, to analyze reading proficiency in English. Likewise, in the current research, the results obtained by Cronbach's Alpha gave a coefficient higher than 0.8, which means that the instrument has an excellent internal consistency and had a great impact. Finally, the researcher suggested that the activity "Reading in Karaoke" be considered in all learning classes because it stimulates the learning of reading comprehension.

Magnusson et al. (2019) wrote a journal article denominated "To what extent and how are reading comprehension strategies part of language arts nstruction? A Research of Lower Secondary Classrooms". The main objective was to investigate the regular teaching of reading comprehension strategies in classrooms, for which the research team conducted video observations of an average of four consecutive classes. The present research work has used a Descriptive research type. The results showed limited evidence of explicit Reading Comprehension Strategies Instruction. Some teachers evidenced knowledge of strategies, but in some cases the teaching seemed to be oriented more toward unengaged activities than toward clear teaching of strategies.

Noordan, and Yunus (2022) wrote a journal article The Integration of ICT in Improving Reading Comprehension Skills: Systematic Literature Review with EFL students with the objective to look at the integration of Information and Communication Technology (ICT) in the Teaching of Reading Comprehension and its benefits on students' performance and motivation. The review shows that integrating ICT into teaching English reading comprehension can improve students' achievement, increase their engagement and improve their attitudes towards English.

<center>**5. Methodology**</center>

5.1 Setting and participants

This research project was carried out at a public institution in the city of Loja which is located in southern Ecuador. The geographic coordinates are approximately with a Latitude -4.00336° or 4° 0' 12" south Longitude -79.20197° or 79° 12' 7" west. The city has a population of about 485.421 citizens. In addition, the participants were selected through convenience sampling since they have an A1.1 level of English language proficiency. The researcher decided to investigate this group of individuals because she obtained the principal's permission and the representatives' consent, and the students were willing to be studied (Creswell, 2012). The participants of this research study were a group of eight grade students of superior basic education at a public institution in Loja academic year 2023-2024. Within the group of selected participants, 19 were female and 13 were male whose ages ranged between 12 and 14 years old.

5.2 Procedure

5.2.1 Method

The following research project was based on the mixed approach, in which the researcher collected quantitative and qualitative data. The quantitative method helped the researcher to collect data from a large number of participants before and after applying the technological resources to improve reading comprehension. In addition, this method allowed the researcher to obtain a wider range of information. The qualitative data collection helped to describe the participants' experiences and perceptions of the use of technological resources on reading comprehension skills. "Mixed methods designs are procedures for collecting, analyzing, and mixing both quantitative and qualitative data in a single study or in a multiphase series of studies" (Creswell, 2012). In this process, the researcher decided what importance to give each data form (priority), what form of data collect first (concurrent or sequential), how to "mix" data (integrate or connect), and whether to use theory to guide the study, for example, defense or social science theory (p. 22).

5.2.2 Research design

The researcher worked using the action research model, which helped identify problems and develop an iterative action plan with strategies to guide best practices. This model was adequate because this study was carried out following the stages suggested by Gerald Susman (1983), that have been adjusted by the researcher in this study:

5.2.2.1. Diagnosing

This study began with the identification of a problem in reading comprehension in English with the research group. Subsequently, the researcher knew some data about the problem, so it was possible to elaborate a more detailed diagnosis. Through this analysis, it was possible to state and define a general research problem. To guide the research process, the main problem was divided into two subproblems that were aligned to know the levels, strategies, and perceptions of students about technological resources on reading ability in English.

5.2.2.2. Action planning

After identifying a problem in English reading skills, the researcher extensively investigated various information and potential solutions to effectively address the issue. Taking into account all the information gathered, six lesson plans were developed in which the researcher took into account the three strategies selected. For the development of this research study, the application of the Pre, during and post model has been considered as the intervention proposal of this research. Thus, the researcher proceeded to design the lesson plans with the following phases: 1) Warm-up activity: in this part, the teacher performed an activity or game prior to the explanation and related to the topic where she introduced the students to the new topic; 2) Pre-reading: during this stage, the researcher explained in detail the content through PowerPoint presentations, digital flashcards, Quizizz questions and mind maps in Canva and additional didactic material; 3) During-reading: in this step, the researcher provided her students with worksheets where they had to apply what they had learned through the use of the technological resources; 4) Post-reading: in the last step, students worked in groups and were allowed to present and reflect on what they had learned. Finally, to achieve the established objectives, some research instruments were developed: the pretest and posttest, which were designed taking into account the principles of test validity and practicality. The survey and field notes that helped the researcher to collect qualitative data focused on the perception and reaction, of the students during the intervention.

5.2.2.3. Taking action

In this stage, the solution to the problem found was applied. First, the researcher applied the pretest to find out the level of reading comprehension of the students before applying the use of technological resources. Subsequently, during this process, the lesson plans were applied during the development of the class and, through the use of technological resources such as digital cards, questions in Quizizz and mind maps in Canva, structured help was offered to the students with the objective of improving comprehension reading. In this sense, at the end of the intervention stage, the researcher applied the post-test to evaluate the level of the students

after having applied the aforementioned resources. This instrument helped the researcher to validate the effectiveness of the use of technological resources in reading comprehension skills.

5.2.2.4.Evaluating

This section evaluates the actions, activities or proposals implemented to assess their effectiveness. This stage is very important to verify the results and thus make decisions and improvements. In this stage, the researcher organized the information, tabulated and interpreted the results making comparisons with the data taken at the beginning and at the end of the intervention process. These findings were reported efficiently using graphs and statistical tables.

5.2.2.5. Specifying learning

In this stage, data on the results of the project implementation were collected and analyzed. It included the interpretation of quantitative and qualitative data collected in the intervention plan. These results were presented in conclusions where the effectiveness of technological resources in the development of reading comprehension was analyzed. In addition, some recommendations were presented based on the results obtained. These recommendations were made to guide future researchers or professionals on how to apply the knowledge generated by the study.

5.2.3. Data Collection Sources and Techniques

In the following research quantitative and qualitative methods were used. The quantitative method was based on numerical data, using statistical techniques, whereas the qualitative method utilized narrative data to understand subjective experiences, meanings, beliefs, and behaviors. By combining both approaches, a more complete and deeper vision of the research was obtained.

First, the use of the testing technique was used where the pre-test and post-test (see Annex 1) instrument were applied, which included multiple choice, and matching questions for the collection of quantitative data. To answer the questions the researcher used the scoring guide (See annex 2) with the answers and points to each question. In addition, individual student performance was graded and categorized according to the National Grading Scale (see annex 5). Second, the qualitative data was collected using the observation technique whose instrument to be used was field notes (see Annex 4). These field notes are divided into two parts, descriptive and reflective. In the descriptive notes, the events that occurred during the classes were written in detail, while in the reflective notes, a reflection of everything that happened was made. Likewise, the survey technique was used, whose instrument was a questionnaire (see Annex 3) by using the Likert scale to analyze the students' perception of the

use of technological resources. Finally, the Likert scale consists of a series of statements on a specific topic, to which participants must respond by indicating their degree of agreement or disagreement on a response scale, and in this research, it was used to describe the perceptions of students using technological resources.

5.3.   Data Analysis

In order to know the importance of the present study via pre-test and post-test which the researcher analyzed the reading comprehension sub-skills which are vocabulary, background knowledge and summarizing, a quantitative analysis of the data was carried out through descriptive statistics. These descriptive statistics provided a clear and concise view of the quantitative data, allowing a better understanding of the patterns, trends and characteristics present in the data set. Furthermore, to show the results in a visual and informative way, the data was tabulated and presented in tables and-or graphs. This allowed for a visual representation of quantitative data, facilitating the identification of patterns, comparison of variables, and drawing of meaningful conclusions. Tables provided a structured format for presenting numerical data, while graphs, such as bar, line or pie charts, allowed a visual exploration of the relationships and distributions within the data.

Furthermore, the thematic analysis enabled the reporting of qualitative data collected as part of the research study. In this case, this information was collected through field notes that were used to make observations, interactions and contextual details during the research process, and a questionnaire previously elaborated by the researcher that was used to know students' perceptions. For this reason, the analysis of these data allowed the researcher to make reflections and at the same time support the conclusions and results, using the students' perceptions as the primary source of data collection.

<h1 align="center">6. Results</h1>

This section presents the results obtained from the quantitative and qualitative instruments to reveal the improvement in students' reading comprehension learning as a result of the application of Technological Resources. Visual representation of the data in tables and bar graphs supported this intervention, which exposed the overview of the findings. The comparison allowed to determine the significant impact the approach had on the dependent variable. In addition, a descriptive and thematic analysis will be conducted. Through these analyses, the researcher will aim not only to clarify numerical results, but also to verify narratives that contribute to a holistic understanding of the impact of educational interventions on both academic progress and students' perceptions and experiences.

6.2.   Pre-test and Post-test results

Objective 1: To improve reading comprehension by the use of technological resources among superior basic education students at a public institution in Loja, academic year 2023 – 2024

Sub-question 1: How can technological resources improve reading comprehension in superior basic education students at a public institution in Loja?

Table 1

Pre-test results on the performance of eighth-grade students' reading comprehension

Student's code	Background Knowledge (2)	Vocabulary (4)	Summarizing (4)	Total 10
UEPJA8D01	0	3,5	1	4,5
UEPJA8D02	1,5	3,5	1	6
UEPJA8D03	1	3,5	2	6,5
UEPJA8D04	0,5	2,5	2	5
UEPJA8D05	1	2,5	0	3,5
UEPJA8D06	1	0,5	1,5	3
UEPJA8D07	1,5	3	3,5	8
UEPJA8D08	0,5	3	1	4,5
UEPJA8D09	0,5	1,5	2	4
UEPJA8D10	0	1	1,5	2,5
UEPJA8D11	0	0,5	2,5	3
UEPJA8D12	0	1,5	1	2,5
UEPJA8D13	0,5	0,5	1	2
UEPJA8D14	1,5	2,5	2	6
UEPJA8D15	0,5	3	1	4,5
UEPJA8D16	0,5	3	2	5,5
UEPJA8D17	1,5	2	1,5	5
UEPJA8D18	1,5	3	1,5	6
UEPJA8D19	0,5	1,5	2,5	4,5
UEPJA8D20	0	1,5	1	2,5

Student's code			
UEPJA8D21	0	1	2	3
UEPJA8D22	1	1,5	1,5	4
UEPJA8D23	0,5	2,5	0	3
UEPJA8D24	0	3	0,5	3,5
UEPJA8D25	0	2,5	2,5	5
UEPJA8D26	0,5	1,5	2	4
UEPJA8D27	1	1	1	3
UEPJA8D28	0	2,5	2	4,5
UEPJA8D29	0	1	0,5	1,5
UEPJA8D30	1	1,5	1	3,5
UEPJA8D31	1	1,5	0,5	3
UEPJA8D32	1,5	3	1	5,5
Mean	**0,64**	**2,06**	**1,44**	**4,14**

Note: UEPJA=Unidad Educativa Pío Jaramillo Alvarado, 8D= eighth-grade "D", 01= Student's code

As it is evidenced in Table 1 students of eighth-grade obtained a mean score of 4,14/10. It is important to recall that only one student of thirty-two achieved a mean of 8/10. Analyzing the results, the average Background Knowledge score is 0,64, indicating a relatively low average level of background knowledge among students. This indicates that, on average, students may be deficient in the basic knowledge necessary for effective reading comprehension. The mean score for Vocabulary is 2,06, indicating a moderate level of vocabulary proficiency among eighth-grade students. While the average is higher than the background knowledge score, there is still room for improvement, and some students may require additional support in enhancing their vocabulary skills. The men score for summarizing is 1,44, indicating a medium level of summarize a reading.

Table 2

Post-test results on the performance of eighth-grade students' reading comprehension

Student's code	Background Knowledge (2)	Vocabulary (4)	Summarizing (4)	Total 10
UEPJA8D01	2	4	3,5	9,5
UEPJA8D02	2	3,5	2	7,5
UEPJA8D03	1,5	4	3,5	9
UEPJA8D04	1,5	4	2,5	8
UEPJA8D05	2	3,5	3	8,5
UEPJA8D06	1,5	4	2	7,5
UEPJA8D07	2	4	3	9
UEPJA8D08	1,5	3,5	3	8
UEPJA8D09	2	3,5	4	6
UEPJA8D10	1,5	3	3	7,5
UEPJA8D11	1,5	3	3	7,5
UEPJA8D12	1,5	4	2	7,5
UEPJA8D13	1,5	3,5	3	8

UEPJA8D14	1,5	3	3	7,5
UEPJA8D15	2	3	3	8
UEPJA8D16	2	3	3,5	8,5
UEPJA8D17	2	3,5	2	7,5
UEPJA8D18	2	3,5	3,5	9
UEPJA8D19	1,5	3,5	3	8
UEPJA8D20	1,5	3,5	3	8
UEPJA8D21	1,5	3	4	8,5
UEPJA8D22	2	3	4	9
UEPJA8D23	1,5	3	3	7,5
UEPJA8D24	1,5	3,5	2	7
UEPJA8D25	1	4	4	9
UEPJA8D26	2	3,5	3	8,5
UEPJA8D27	2	2,5	3	7,5
UEPJA8D28	2	3	3	8
UEPJA8D29	1,5	4	3	8,5
UEPJA8D30	1,5	3,5	3	8
UEPJA8D31	2	3	3	8
UEPJA8D32	1,5	4	3	8,5
Mean	**1,70**	**3,45**	**3,02**	**8,17**

Note: UEPJA=Unidad Educativa Pío Jaramillo Alvarado, 8D= eighth-grade "D", 01=Student's code

After performing the intervention proposal, a significant improvement was noted among eighth graders. The data from the Table 2 evidenced that students of eighth-grade obtained a mean score of 8,17/10 in reading comprehension. The finding demonstrated that the application of technological resources was effective in the improvement of reading comprehension. According to the results students show a great increase in vocabulary where students obtained 3,45/4 indicating a relatively high level of vocabulary proficiency among the students. On average, students showed a high mastery of words, which is crucial for reading comprehension of diverse texts. Likewise, the mean score for Summarizing is 3,02, reflecting a good level of mastery of summarizing skills. On average, students showed an ability to extract key information and condense it effectively, an important aspect of reading comprehension. the average Background Knowledge score is 1,70, indicating a moderate level of background knowledge among eighth graders. On average, students demonstrated an adequate understanding of the basic concepts related to reading comprehension.

Table 3

Pre-test and Post-test summary of the performance of eighth-grade students' Reading comprehension

|	Background knowledge (2)	Vocabulary (4)	Summarizing (4)	Total mean
Pre-Test	0,64 (32%)	2,06 (51%)	1,44 (36%)	4,14
Post-Test	1,70 (85%)	3,45 (86%)	3,02 (75%)	8,17
Difference	1,06 (53%)	1,39 (35%)	1,58 (39%)	4,03

Table 3 shows the data obtained for the students' reading comprehension performance in the pre and post-test, summarizing all data previously analyzed and interpreted. It can be clearly observed the low level that eighth grade students had before the implementation of the intervention plan. The purpose of the application of both tests was to measure and verify the improvement and development of this skill in English superior basic education, considering reading sub-skill such as background knowledge, vocabulary and summarizing.

The data illustrates a significant improvement in eighth-grade students' reading comprehension skills from the pre-test to the post-test, with notable advancements in background knowledge, vocabulary, summarizing, and the overall total mean. In terms of "background knowledge" in the pre-test was (0,64/2,00) while in the post-test it was (1,70/2,00) there is a difference of 1,06, which indicates than between the pre-test and post-test there was growth of 53% indicating a good level of background knowledge thanks to the technological resource Quizizz. In regards to "Vocabulary" in the pre-test was (2,06/4,00) which increased to (3,45/4,00) in the post-test, in addition, the difference between pre-and post-test is 1,39 which shows an increase of 35% after the intervention. This implies that students had a good improvement of vocabulary through the digital flashcards presented in the technological resources in the post-test. Finally, in terms of "Summarizing" in the pre-test was (1,44/4,00) which increased to (3,02/4,00) the difference between pre and post-test is 1,58 which increased by 39% showing a significant difference by the use of mind maps in Canva improving the sub-skill of summarizing which indicated that they possessed considerable ability in "summarizing" according to the post-test.

6.3. Comparison with the National Grading Scale

The comparison of the grades obtained by the students with the National Grading Scale established by the Ministry of Education shows the improvement through the following table and bar graph. It also shows the important contribution that the use of technological resources had in the learning of reading comprehension of each student.

Figure 1. *Pre-test and Post-test scores on reading comprehension compared with the National Grading Scale.*
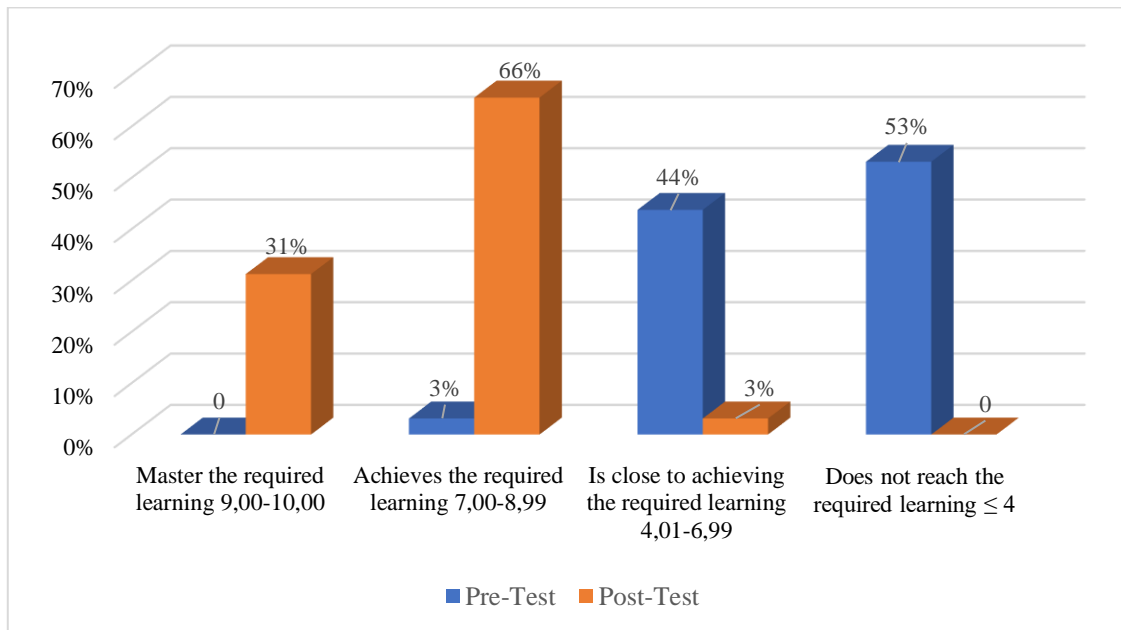
After an eight-week intervention period, Figure 1 shows the distinguished improvements in students' performance on the post-test in relation to the National Grading Scale. A considerable number of students (31%) achieved a Master the required learning, which demonstrated a meaningful improvement in comparison with the grades in the pre-test. The majority of students (66%) achieved the required learning, which students demonstrated a great improvement in reading comprehension. However, only a minimal number of students (3%) which indicates that most of the students were close to the proficiency of the required learning. Here it is also evident that none of the students scored less than or equal to four, which indicates the improvement of reading comprehension in the students.

It is essential to mention that the quantitative data mentioned above support and enrich the qualitative data obtained from the field notes and the questionnaire. The qualitative data obtained from the field notes and the questionnaire were useful to know the attitudes and perceptions of the students. The integration of both data instruments reinforces the validity of the research results, allowing a deeper and more detailed interpretation of the results.

6.4. Questionnaire results

Objective 2: To describe the students' perceptions about technological resources to improve reading comprehension among superior basic education students at a public institution in Loja, academic year 2023 – 2024.

Sub-question 2: What are the students' perceptions about technological resources to improve reading comprehension in superior basic education students at a public institution in Loja?

In order to collect qualitative data, the researcher used a questionnaire to find out the students' perceptions about the technological resources and reading comprehension among superior basic education students at a public institution in Loja.

Figure 2. *Representation of the use of technological resources into the classroom*
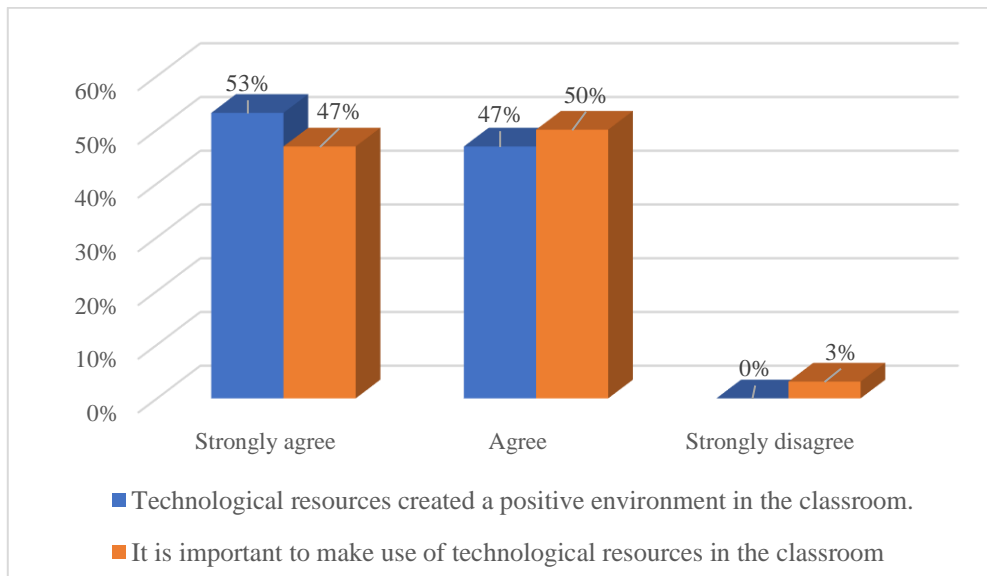

These questions were intended to identify perceptions about the level of use of technological resources in the classroom. As we can see in Figure 2, the majority of students 53% responded that they "Strongly agree" with the first statement, while 47% also "Strongly agree" with the second statement about the importance of technological resources in the classroom. The response of some students (47%) was that they "agree" with respect to the first statement indicating that maybe it attracts their attention because it creates a good atmosphere in the classroom and they can interact with their classmates and others (50%) said that they "agree" based on the second statement maybe because they like the integration of these resources. This means that the use of technological resources creates a good classroom environment for learning reading comprehension. In the same way, we can see that a small fraction (3%) "strongly disagree" with the first statement, and with the second statement there is a 0% indicating that it is important make use of these technologies. According to the field notes, the students were attracted by the use of technological resources with positive teaching, but not all of them.

Figure 3. *Representation of motivation with the use of digital flashcards*

Motivation with the use of digital flashcards
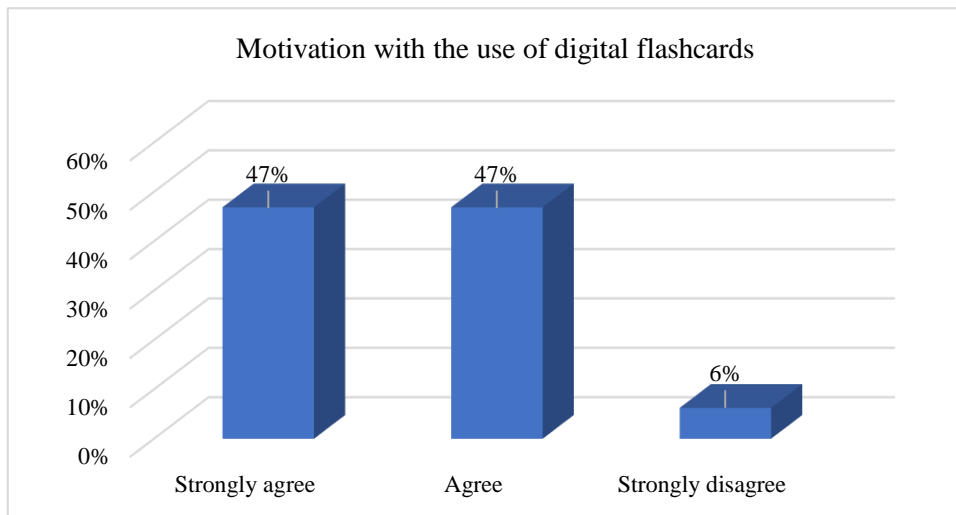
The data provided in Figure 3 presented responses related to motivation with the use of digital flashcards, indicating that 15 participants (47%) "Strongly agree" that digital flashcards contribute to their motivation. Another 15 participants (47%) "agree" that digital flashcards contribute to their motivation. Only, 2 participants (6%) "Strongly disagree" with the notion that digital flashcards contribute to their motivation, because they felt that it not was very useful. However, according to the field notes the majority of the students felt motivated to learn vocabulary using digital flashcards, since at the time of reading they were remembering with the image the name of each word that was new to them. These results indicate a predominantly positive perception of the motivational impact of digital flashcards among students. Responses of agreement and strong agreement indicate that, in general, the use of digital flashcards is associated with increased motivation in the context surveyed.

Figure 4. *Representation of the improvement of vocabulary using digital flashcards*

Improvement of the retencion of vocabulary using digital flashcards
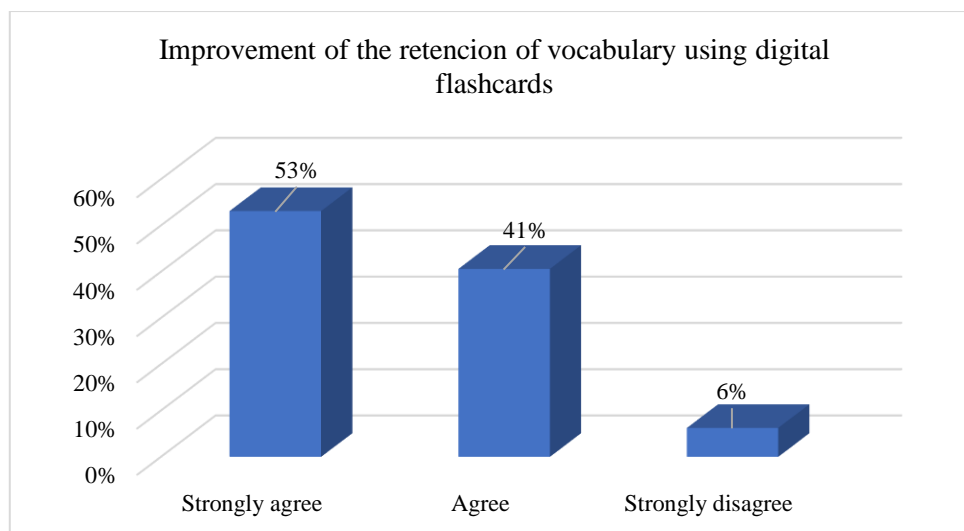
The data in Figure 4 show that the majority of the participants, 53%, "strongly agree", while 41% "agree", believing that the use of digital flashcards has had a positive impact on vocabulary improvement. A small percentage, 6%, "strongly disagree" with the notion that digital flashcards contribute to vocabulary improvement.

Overall, the results indicate that digital flashcards are perceived positively in terms of their effectiveness in enhancing vocabulary among the students. Based on the field notes the researcher could notice the improvement of the students when using the digital flashcards, as the students could see the image and the name of each word and found it easier to remember it. According to Dutta (2021), digital flashcards have become a popular method for improving vocabulary. They are helpful for memorization-intensive learning and studying tasks. This is due to the fact that they aim to enhance a learner's active memory of a topic's facts.
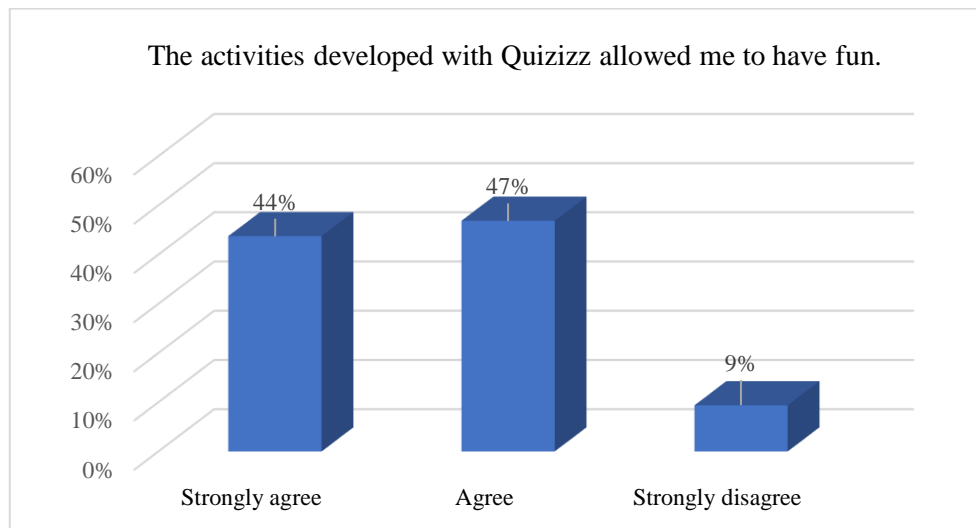
Figure 5. *Representation of effectiveness of Quizizz in enhancing grasp and retention of background knowledge*
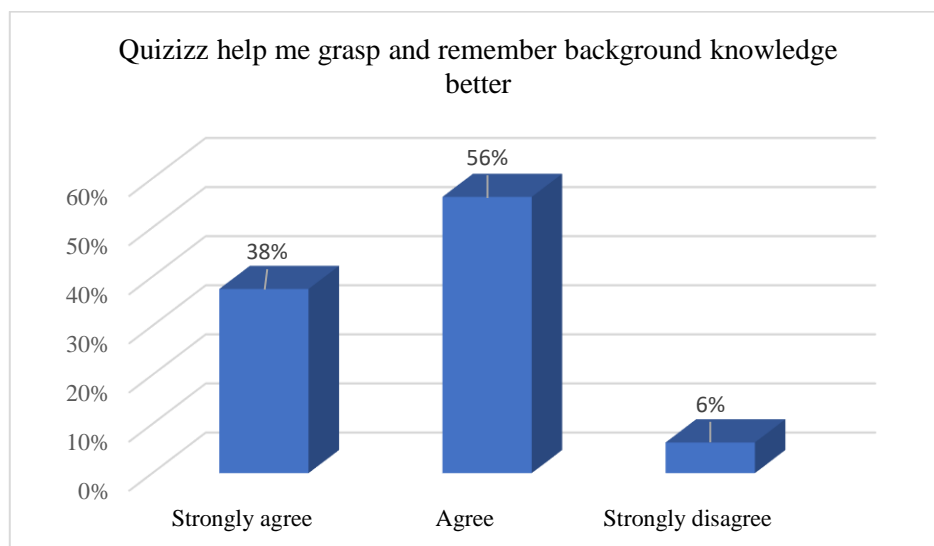
In relation to the Figure 5, 38% of the participants "strongly agree", an additional 56% of the participants "agree" indicating that Quizizz is effective in enhancing their grasp and retention of background knowledge. A small percentage, 6%, "Strongly disagree" with the notion that Quizizz contributes positively to background knowledge. While the majority is positive, understanding the reasons behind the 6% who "Strongly disagree" could provide insights into specific challenges or areas for improvement. All of this along with some observations mentioned in the field notes where making some questions in Quizzes to activate background knowledge help to the student's kwon what the reading would be about, obviously also presented some pictures in relation to the possible reading. According to Hockett & Doubet (2014), "Pre-assessing in Quizizz using a limited number of assignments or questions that are

directly related to the learning objective to be covered in class and that encourage students to learn more".

Figure 6. *Representation of funnier learning through Quizizz activities*

The activities developed with Quizizz allowed me to have fun.

(Strongly agree: 44%, Agree: 47%, Strongly disagree: 9%)

As is evidenced in Figure 6 a significant portion of participants 44% "Strongly agree" while 47% of the participants "agree", demonstrating that learning through Quizizz activities is funnier. A minority of the participants 9%, "strongly disagree" with the notion that Quizizz activities contribute positively to the enjoyment of learning. According to the field notes some of these students did not find the activities fun, but most did, because they liked to guess what the reading was about. The results indicate a predominantly positive perception of the fun learning experience through Quizizz activities among the participants. Responses of agree and strongly agree indicate that Quizizz is generally perceived as a tool that enhances the enjoyment of the learning process. Zhao (2019) defines this tool as follows "It is a game-based educational app, which brings multiplayer activities to classrooms and makes in-class exercises interactive and fun" (p. 37).

Figure 7. *Representation of the impact of technological resources on reading comprehension*

Technological resources in the process of reading comprehension

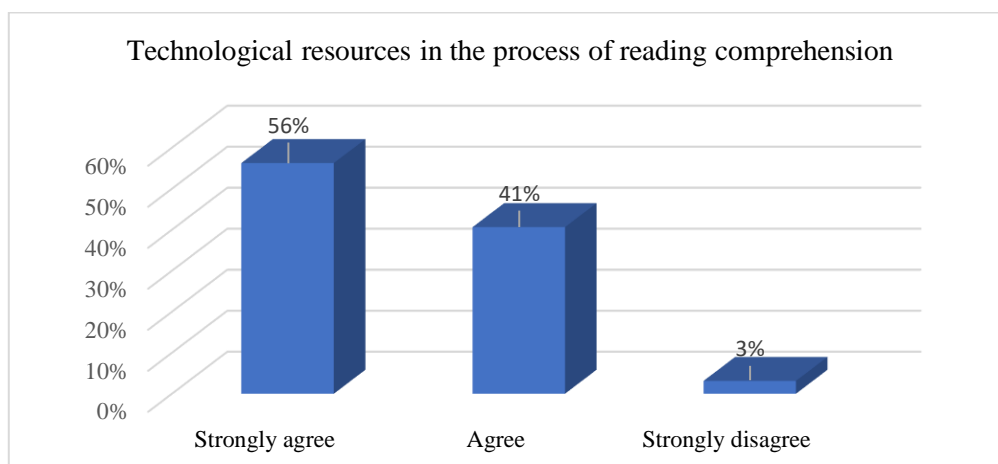(Strongly agree: 56%, Agree: 41%, Strongly disagree: 3%)

Figure 7 indicates that the majority of participants (56%) "Strongly agree", while 41% "Agree", showing that technological resources have a positive impact on their reading comprehension. One participant, 3%, strongly disagree with the notion that technological resources contribute positively to reading comprehension; however, the majority of the students indicate that technological resources are generally perceived as having a beneficial influence on the improvement of reading comprehension skills. In the field notes students felt with a great curiosity during the reading, because they worked in a different way than the teacher did, which was the traditional way, without any technological resources, so the integration of these resources kept them motivated and they were curious to learn more about them. According to Ahmadi (2018), students can use technology to transform their learning and access a variety of experiences that teachers cannot provide.

Figure 8. *Preference for learning with technological resources*
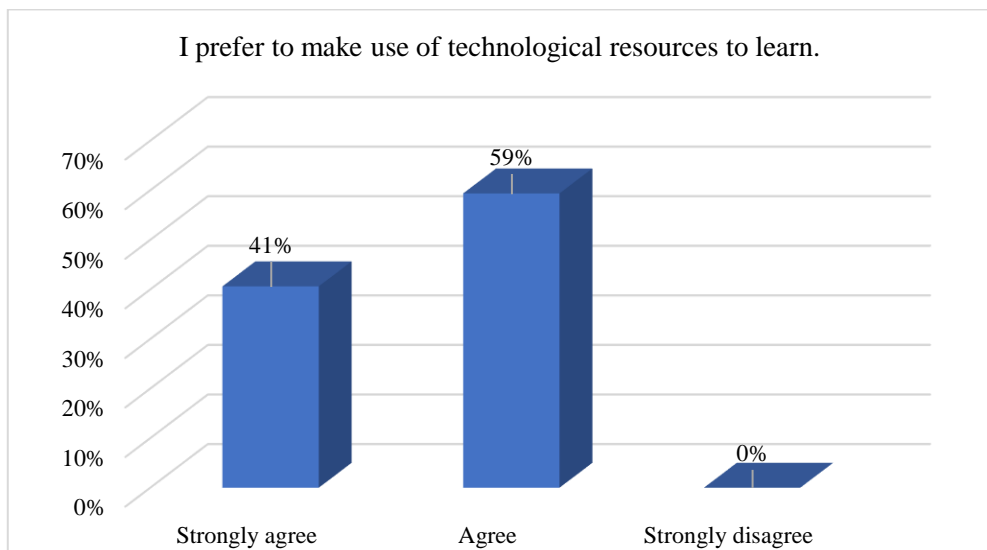
As we can see in Figure 8, a part of the participants (41%) "strongly agree" that they have a strong preference for learning using technological resources, while a significant majority of the participants (59%) "Agree" that they prefer learning with these resources, also nobody said "Strongly disagree" which means that there is a high level of acceptance and preference for technological resources as a mode of learning. The same is expressed in the field notes where students felt comfortable at the moment to using these types of resources and preferred work with them, students' enthusiasm and engagement with these resources were evident, providing valuable information about their preferences toward learning with technological tools, because they were more interesting. Based on Noordan and Yunus (2022) students prefer to use technology and understand the specific impact it has on their learning experiences.

Figure 9. *Enhanced summarizing and enjoyable reading comprehension through Canva Mind Maps*
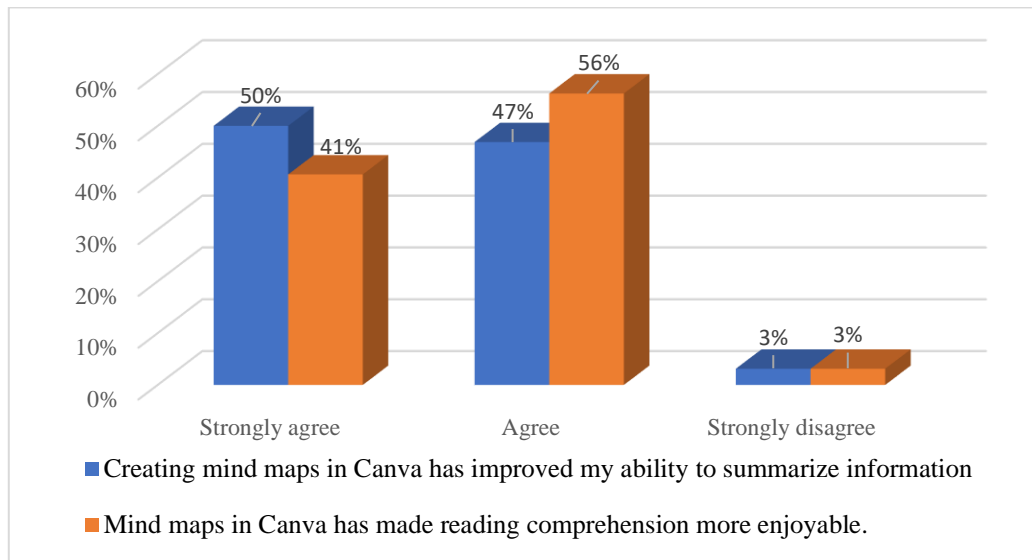
As can be seen, Figure 9 shows that 50% of the participants "strongly agree" indicating that they liked creating mind maps in Canva to improve their ability to summarize information based on the first statement. Similarly, in the second statement 41% of the participants chose "strongly agree" about the enjoyable use of mind maps in Canva to improve their reading comprehension. However, 47% of the participants expressed agreement regarding the first statement, likewise with the second statement the majority of the participants (56%) chose "agree" showing good improvement and enjoyable learning. Similar to the first and second statement, 3% said totally disagree, maybe the activities to summarize the information were not enough to improve their summarizing skills and also this activity was not enjoyable.

These results show that most students have a positive perception of the improvement and enjoyable learning of summarization skills using Canva mind maps. Also, in relation to the field notes the researcher could observed the improvement in the students at the moment of summarize the information.

7. Discussion

The present research work was designed with the aim of improving reading comprehension through technological resources among superior basic education students at a public institution of Loja during the 2023-2024 school year. Based on the general objective, this section describes the results found in this study and compares them with previous studies. Likewise, in this section, the researcher presents the answers to the main research question and sub research question posed at the beginning of the study, as well as the limitations faced during the intervention plan and offer some suggestions for future studies.

Regarding the main research question: How can technological resources improve reading comprehension in superior basic education students at a public institution in Loja, academic year 2023-2024? Based on the results obtained from the pre and post-test it was evidenced that the use of technological resources had a positive impact on the improvement of the student's reading comprehension skills. This is increased due to students were able to make a background knowledge before to read, identify new vocabulary and above all summarize texts, which helped them learn in an interactive and dynamic way. This is also stated by Ahmadi (2018), who mentions that the use of technological resources in the classroom can be very beneficial in increasing reading comprehension because learners can adapt their own learning processes, and they can obtain access to a variety of knowledge that their teachers are unable to supply.

Furthermore, concerning the first sub-question: What is the effectiveness of the use of technological resources to develop reading comprehension in superior basic education students at a public institution in Loja? In this study, it was shown that students at the beginning showed a low level of reading comprehension with a mean score of 4.14 out of 10, then, students were able to increase their reading comprehension skills with a mean score of 8.17 this means that the use of technological resources helped significantly to develop their understanding level.

Technological resources such as digital flashcards, Quizizz and Canva mind maps have been effective in improving reading comprehension. Teachers and students can take advantage of the benefits of technological resources to provide dynamic and interactive reading experiences that enhance comprehension, adapt to individual needs, and foster a love of reading. These results are corroborated with the previous studies of Scharaldi (2020) who states that "Technology can be a really good motivational tool for a struggling reader. He or she may prefer digital text and engage in multimedia reading activities". Moreover, Ahmadi (2018), states learners can adapt their own learning processes with the use of technology, and they can obtain access to a variety of knowledge that their teachers are unable to supply. Through

technological resources, students can have access to images and other content to help them increase their knowledge of times, places and contexts of reading.

On the other hand, considering the second sub-question: What are the students' perceptions about technological resources to improve reading comprehension in superior basic education students at a public institution in Loja? According to the questionnaire and the field notes, results showed that students preferred to make use of technological resources considering as an effective pedagogical approach. In addition, they emphasized that the pedagogical help provided by these resources gave them a sense of security and willingness to work on difficult tasks, which made the learning process more attractive and less boring. However, there were students who presented difficulties, such as lack of concentration and difficulty in understanding the readings. On the contrary, in relation to question number seven of the questionnaire, it was observed that the technological resources did not arouse curiosity in the reading comprehension process of some students, however, the final results were positive because there was an improvement in reading comprehension. Likewise, the students' opinions varied when selecting whether they preferred to use technological resources for learning, since in question 8, some students agreed that they preferred these resources, by which through digital cards, quizzes and mind maps in Canva they processed better the information from the readings to better understand what they were reading.

In this way, students argued that the different activities in each resource improved their comprehension, developed their creativity, kept them motivated, and ultimately encouraged active participation. Similarly, Noordan, and Yunus (2022) stated that teachers should integrate technology in the classroom to encourage student participation and increase achievement. The theory of online learning reinforces that learners have the ability to interact with content through various platforms and also to choose sequenced, scheduled and teacher-directed learning. Therefore, considering the above arguments, it can be affirmed that thanks to technological resources such as Digital flashcards, Quizizz and mind maps using Canva students had a positive impact on their reading comprehension skills, as they considered them useful, innovative and fun within their learning process.

8. Conclusions

The application of the technological resources such as Digital flashcards, Quizizz and mind maps: Canva had a positive impact on improving students' reading comprehension skills. Through these resources' students were able to understand complex texts facilitating a deep understanding of reading comprehension. In this way, it allowed students to become more independent and active readers, making use of technological resources to navigate texts with greater proficiency.

It was shown that the application of different types of technological resources was effective in improving students' comprehension reading skills, especially in the aspects of background knowledge, vocabulary and summarizing, as students improved their process to understand a reading well. These resources play an important role in improve their reading comprehension skills. Not only can these resources simplify complex concepts and make them more accessible to students, but they also offer a dynamic and participatory approach to learning.

The incorporation of technological resources had a positive impact since the students felt that, by receiving support from them and during the reading process, they were able to understand the text better. In addition, they perceived the technological resources as effective tools for academic improvement and especially in their reading skills, as they felt supported, motivated and empowered to face difficult texts.

9. Recommendations

The researcher recommends teachers to make use of technological resources such as digital flashcards, Quizizz and mind maps in Canva as effective tools to improve reading comprehension skills, since these resources are of great help in this process. It also creates a learning environment in which students feel motivated and engaged, leading to greater concentration and interest in reading activities.

It is recommended that future researchers be very mindful of time constraints when designing and carrying out research as there are sometimes unforeseen circumstances. A longer period of time could allow students to better develop their reading comprehension skills such as background knowledge, vocabulary and summarizing.

Finally, it is recommended for future researchers that the use of technological resources be applied with higher educational levels to determine and compare where there is an improvement in results. Also, consider the incorporation of additional educational tools, simulations or multimedia elements to further engage students in a dynamic learning environment.

10. Bibliography

Ahmadi, M. R. (2018). The Use of Technology in English Language Learning: A Literature Review. *International Journal of Research in English Education, 3*(2), 115-125. doi:https://doi.org/10.29252/ijree.3.2.115

Alqahtani, M. (2015). The Importance of Vocabulary in Language Learning and How To Be Taught. *International journal of teaching and education, 3*(3), 21-34. doi:http://www.iises.net/international-journal-of-teaching-education/publication-detail-213

Altun, M., & Ahmad, H. K. (2021). The Use of Technology in English Language Teaching: A Literature Review. *International Journal of Social Sciences & Educational Studies, 8*(1). doi:10.23918/ijsses.v8i1p226

Aziz, A. K. (2015). Effective Strategies for Turning Receptive Vocabulary into Productive Vocabulary in EFL Context. *Journal of Education and Practice, 6*(27). Obtenido de https://files.eric.ed.gov/fulltext/EJ1077387.pdf

Bautista, A. E. (2020). *The Use of Technological Tools to Strengthen the English Reading Comprehension Process in Nine Graders in Harold Eder High School, in Palmira. [Degree of Master Universidad ICESI].*

Ben-Aharon. (2021). *GREATSPEECH.* Obtenido de What Is the Importance of Reading Comprehension After School?: https://greatspeech.com/what-is-the-importance-of-reading-comprehension-after-school/

Brandon, D. (2023). *Alabama Cooperative Extension System.* Recuperado el 27 de junio de 2023, de The Importance of Reading Comprehension: https://www.aces.edu/blog/topics/home-family-urban/the-importance-of-reading-comprehension/

Brookhart, S., & Lazarus, S. S. (2020). *Pre-assessment to plan instruction for students with disabilities during distance.* (NCEO Brief #21) National Center on Educational Outcomes.

Butterfuss, R., Kim, J., & Kendeou, P. (2020). Reading Comprehension. En *Oxford Research Encyclopedia of Education* (págs. 1-24). Oxford University Press. doi:10.1093/acrefore/9780190264093.013.865

Capodieci, A., Cornoldi, C., Doerr, E., Bertolo, L., & Carretti, B. (2020). The Use of New Technologies for Improving Reading Comprehension. *Front. Psychol Sec. Educational Psychology, 11.* doi:https://doi.org/10.3389/fpsyg.2020.00751

Colbran, S., Gilding, A., & Colbran, S. (2014). The role of digital flashcards in legal education:theory and potential. *EUROPEAN JOURNAL OF LAW AND TECHNOLOGY, 5*(1).

Creswell, J. W. (2012). *Planning, Conducting, and evaluating quantitative and qualitative research* (4th Edition ed.). (Pearson, Ed.) 4.

Crossroads Therapy Speech. (10 de Agosto de 2022). Obtenido de Reading comprehension: https://crossroadsspeechtherapy.com/reading-comprehension/

Dakhi, S. (2019). The principles and the teaching of English vocabulary: A review. *Journal of English teaching, 5*(1). Obtenido de https://files.eric.ed.gov/fulltext/ED594288.pdf

Degirmenci, R. (2021). The use of Quizizz in language learning and teaching from the teachers' and students' perspectives: A literature review. *Language Education and Technology, 1*(1), 1-11.

Demirel, E. E. (2019). Cooperative Learning in EFL Classes: A Comparative Study on Vocabulary Teaching. *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 42*, 344-354. doi:http://dergisosyalbil.selcuk.edu.tr/susbed/article/view/1720

Diallo, M. (2023). THE ROLE AND IMPACT OF TECHNOLOGY ON STUDENTS' READING. *An Applied Research Proposal Presented for the Fulfillment Of the Requirements for the Degree of Master of Education*, 1-37.

Dickson, A. (2022). *Ellii.* Obtenido de (Formerly ESL Library): https://ellii.com/blog/pre-reading-activities-to-boost-comprehension

Dorothy, B. (26 de Marzo de 2021). Obtenido de The importance of reading comprehension: https://www.aces.edu/blog/topics/home-family-urban/the-importance-of-reading-comprehension/

Dutta, A. (2021). *Flashcards as a teaching.* Recuperado el 24 de junio de 2023, de Evelynlearning.com.: https://www.evelynlearning.com/flashcards-as-a-teaching-tool/

Edwards, L. (2022). *What Is Canva And How Does It Work? Tips & Tricks.* Obtenido de https://www.techlearning.com/how-to/what-is-canva-and-how-does-it-work-for-education

Escar, E. (2022). What are the Benefits of Reading Comprehension? *Iris Reading*. Recuperado el 21 de 07 de 2023, de https://irisreading.com/what-are-the-benefits-of-reading-comprehension/

Gay, L., Mills, G., & Airasian, P. (2012). *Educational Research Competencies for Analysis and Applications.* Pearson.

Groen, M. A., Veenendaal, N. J., & Verhoeven, L. (2019). The role of prosody in reading comprehension: Evidence. *Journal of Research in Reading,, 42*(1), 37-57. doi: https://doi.org/10.1111/1467-9817.12133

Güzel, S. (2022). The importance of reading activities in reading comprehension. *Disiplinlerarası Yen Araş, 2*(1), 29-34. doi:orcid.org/0000-0001-5212-9891

Helmers, J. R. (2017). *Using Technology and Collaboration to Support Reading Comprehension [Master's Theses y Capstone Projects, Northwestern College].* Orange City. Obtenido de https://nwcommons.nwciowa.edu/cgi/viewcontent.cgi?article=1035&context=education_masters

Hockett, J. A., & Doubet, ,. K. (2014). Turning on the lights: What pre-assessments can do. *Educational Leadership, 71*(4), 50-54. Recuperado el 24 de junio de 2023, de https://www.researchgate.net/publication/291883836_Turning_on_the_lights_What_pre-assessments_can_do

İçin, O. D., & Samet, B. (2018). Using Quizizz.com to Enhance Pre-intermediate Students› Vocabulary Knowledge. *International Journal of Language Academy, 6*(3), 295-303.

Izzah, Z. (2015). *The Use of Word Chain Game to Improve Vocabulary Mastery of the Eight Grade Students at SMP N 3 Kalibagor.* Bachelor thesis, UNIVERSITAS MUHAMMADIYAH PURWOKERTO. Obtenido de http://repository.ump.ac.id/46/3/CHAPTER%20II%20Zahrotul.pdf

Kanmaz, A. (2022). Teachers' Reading Comprehension and Use of Reading Strategies Levels: A Study on the Secondary School Teachers. *Asian Institute of Research, 5*(1), 1-14. doi:10.31014/aior.1993.05.01.413

Law insider. (2023). *Technology resources definition*. Recuperado el 21 de junio de 2023, de https://www.lawinsider.com/dictionary/technology-resources

Lessard-Clouston, M. (2013). *Teaching Vocabulary.* Alexandria, Virginia, USA: TESOL International Association.

Liou, K. (2021). *Reading Comprehension.* Recuperado el 20 de junio de 2023, de https://www.sjsu.edu/writingcenter/docs/handouts/Reading%20Comprehension.pdf

Lopera, G. A. (2023). Educational Technology to Support Reading Comprehension and Writing Competency Processes Through the Use of Writing in Virtual Learning Environments. *European Journal of Education and Pedagogy, 4*, 95-103. doi:10.24018/ejedu.2023.4.2.600

Magnusson, C. G., Blikstad-Balas, M., & Roe, A. (2019). To What Extent and How Are Reading Comprehension Strategies Part of Language Arts Instruction? A Study of Lower Secondary Classrooms. *Journal Articles; Reports - Research, 54*(2), 187-212.

Menendez, C. A., Mora, J. E., Cifuentes, M. T., & Garcia, E. P. (2021). Use of interactive technological teaching resources to improve english language learning in university students. *JOURNAL OF SCIENCE AND RESEARCH, 6*(3), 335-351. doi:https://doi.org/10.5281/zenodo.5660087

MinEduc. (2016). *Ministerio de Educacion.* Obtenido de Ministerio de Educacion: https://educacion.gob.ec/wp-content/uploads/downloads/2016/03/EFL1.pdf

Muñoz, I. S. (2021). *TECHNOLOGICAL LEARNING RESOURCES TO DEVELOP A1 STUDENTS' [Master in Pedagogy of English as a Foreign Language].* Universidad Católica del Euador, Ambato. Recuperado el 27 de junio de 2023

Murray, D. (2005). Technologies for second language literacy. *Annual Review of Applied Linguistics* , 188-201.

Ngarofah, S., & Sumarni, A. (2018). TEACHING VOCABULARY USING FLASHCARD. *PROJECT PROFESSIONAL JOURNAL OF ENGLISH EDUCATION, 1*(6), 775-782. Recuperado el 26 de junio de 2023

Noordan, M. and Md. Yunus, M. (2022). The Integration of ICT in Improving Reading Comprehension Skills: A Systematic Literature Review. *Creative Education, 13*(6), 2051-2069. doi:10.4236/ce.2022.136127.

Oustlabtraining. (2021). *Oust Labs.* Obtenido de Digital Flashcards: How to Create, Features and Benefits: https://www.linkedin.com/pulse/digital-flashcards-how-create-features-benefits-oust?trk=public_post

Prescott, J. (19 de Diciembre de 2022). *The Importance of Building Background Knowledge in Reading*. Recuperado el 2023 de junio de 24, de Houghton Mifflin Harcourt: https://www.hmhco.com/blog/the-importance-of-building-background-knowledge-in-reading/

Qizi, K. D. (2021). The use of technology in English language learning. *International Virtual Conference on Science, Technology and Educational Practices.* .

Rachmawaty, S. E. (2017). *Teaching Vocabulary through Cooperative Learning Method to the First Year Students of Islamic Boarding School of Sultan Hasanuddin Limbung Gowa.* Doctoral dissertation, Universitas Islam Negeri Alauddin Makassar. Obtenido de http://repositori.uin-alauddin.ac.id/id/eprint/4508

Rahayu, I. S., & Purnawarman, p. (2019). The use of Quizizz in improving students' grammar understanding through self-assessment. *In Eleventh Conference on Applied Linguistics (CONAPLIN 2018)*, 102-106. doi:10.2991/conaplin-18.2019.235

Raja, R., & Nagasubramani, P. (2018). Impact of modern technology in education. *Journal of Applied and Advanced Research, 3*, 33-35. doi:10.21839/jaar.2018.v3iS1.165

Rockets, R. (2013). *Reading Rockets*. Recuperado el 27 de junio de 2023, de https://www.readingrockets.org/strategies/summarizing

Rutzler, S. (Febreo de 2020). *Importance of Reading Comprehension*. Obtenido de https://www.genieacademy.com/blog/importance-of-reading-comprehension

Sabir, C. S. (2018). Principles of Learning and Teaching Vocabulary. *In Interantional Scientific and Practical Conference World Science, 5*(5), 27-29. Obtenido de https://www.academia.edu/36744546/PRINCIPLES_OF_LEARNING_AND_TEAC HING_VOCABULARY

Sanako blog. (2021). *Technology in language teaching and learning.* Recuperado el 23 de junio de 2023, de https://sanako.com/technology-in-language-teaching-and-learning#:~:text=Language%20teachers%20can%20use%20a,valuable%20tool%20in %20language%20teaching.

Saputri, T. (2019). *IMPROVING STUDENTS' READING COMPREHENSION THROUGH PREVIEW, QUESTION, READ, STATE AND TEST (PQRST) STRATEGY.* Recuperado el 21 de junio de 2023, de http://perpus.iainsalatiga.ac.id/lemari/fg/free/pdf/?file=http://perpus.iainsalatiga.ac.id/ g/pdf/public/index.php/?pdf=6182/1/COVER%20PDF%20FIX

Scharaldi, K. (2020). *TextHelp.* Obtenido de https://www.texthelp.com/resources/blog/five-reasons-struggling-readers-benefit-from-tech/

Srinivasa Rao Gundu; KV Rama Rao; K Radha Madhavi; Ch Mutyala Rao; Venkata Ramana Manipatruni. (2023). ENHANCING ENGLISH LANGUAGE SKILLS USING CUTTING-EDGE TECHNOLOGY. *EPRA International Journal of Research and Development (IJRD), 8*(2). doi:https://doi.org/10.36713/epra2016

Susanto, A. (2017). The Teaching of Vocabulary: A Perspective. *Penelitian Tentang Ilmu Bahasa Dan Sastra, 1*(2), 182-191. doi:http://dx.doi.org/10.22216/jk.v1i2.2136

Telfer, D., Ottley, J., & Howley, A. (2021). During-Reading Activities. *Ohio Partnership for Excellence in Paraprofessional Preparation*.

The Scientific World. (2019). *The Importance of Technology in Our Daily Life - How Has Technology Changed Our Lives?* Obtenido de The Scientific World:

https://www.scientificworldinfo.com/2019/11/importance-of-technology-in-our-daily-life.html

Thornbury, S. (2002). *How to teach vocabulary.* Pearson Education Limited.

Toprak, E. L., & Gamze, A. (2009). Three Reading Phases and Their Applications in the Teaching of English as a Foreign Language in Reading Classes with Young Learners. *Journal of Language and Linguistic Studies, 5*(1), 20-36.

UOW, U. o. (2013). *Summarising.* Obtenido de University of Wollongong: https://www.uow.edu.au/student/learning-co-op/referencing-and-citing/summarising/

Wei, C. Y., Kuah, Y. C., Ng, C. P., & Lau, W. K. (2021). Augmented Reality (AR) as an Enhancement Teaching Tool: Are Educators Ready for It? *Contemporary Educational Technology, 13*(3). doi:https://doi.org/10.30935/cedtech/10866

Yılmaz, A. (2020). The Effect of Technology Integration in Education on Prospective Teachers' Critical and Creative Thinking, Multidimensional 21st Century Skills and Academic Achievements. *Participatory Educational Research, 8*(2), 163-169. doi:https://doi.org/10.17275/per.21.35.8.2

Zarei, A. A., & Gilani, M. S. (2013). L2 Vocavulary learning through Collaborative techniques. *International Journal of Language Learning and Applied Linguistics World (IJLLALW), 4*(1), 71-84. doi:https://n9.cl/lyizs

Zhao, F. (2019). Using Quizizz to integrate fun multiplayer activity in the accounting. *International Journal of Higher Education, 8*(1), 37-43. doi:10.5430/ijhe.v8n1p37

11. Annexes

Annex 1. Pre-test and Post-test


UNIVERSIDAD NACIONAL DE LOJA
DEPARTMENT OF PEDAGOGÍA DE LOS IDIOMAS
NACIONALES Y EXTRANJEROS
DATA COLLECTION INSTRUMENT: PRE - TEST

Dear student, answer the following test with sincerity and honesty. Your answers will be anonymous and confidential.

Student`s code. …………………………………………………..

Date: …………………………………………….

1. **BEFORE READING: Look at the pictures and answer the following questions: (Background knowledge) (2p).**
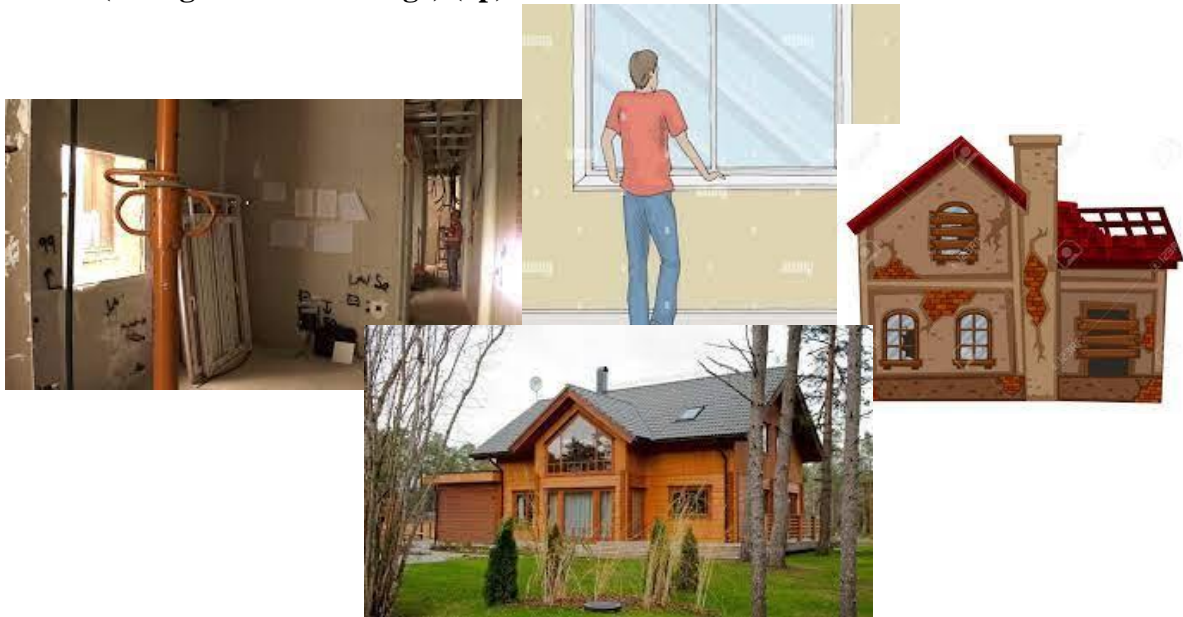
A. **What do you think the reading is about? Underline the answer.**
   a. The Francisco's Job
   b. The new home of Francisco
   c. Francisco's life
   d. A family day

B. **Where do you think Francisco is located?**
   a. Outside his school
   b. Outside a store
   c. Outside his new house
   d. Outside a friend's house

C. **What do you think Francisco is feeling as he stands outside his new house?**
   a. Excited
   b. Worried
   c. Happy
   d. Sad

D. **What do you think Francisco hopes to achieve by the end?**

a. Buying new furniture
b. Making friends in the neighborhood
c. Transforming his house into a comfortable home
d. Leaving the house in its current state

2. **Read the text and then answer the following questions: (Vocabulary) (2p.)**

Francisco transforms his new home
Francisco stands outside his new house. He reaches into his **pocket** and pulls out the **key**. He turns the key in the lock and opens the door. He steps into the **living room** and looks around. The **paint is peeling** off the **walls**. There is no **furniture**. The house is **dirty** and **smells** bad. He tries to open a **window** but it is broken. The house does not have a **kitchen** or a **bedroom** but there is a **microwave** on the **floor** on one side of the room. He **wonders** if it works. The place looks terrible but it is all he can afford. He **covers** his nose and mouth with his hand and opens the bathroom door. It is in bad condition. Francisco was worried, but he took vs a **deep breath**, **determined** to **improve** his new house, but decides to clean the living room. He goes to the **store** and buys a **broom** and some **cleaning supplies**. With each **sweep** and scrub, the room begins to look a little **brighter**. And so, he continued until he finished and left his new house nice and **tidy**.

A. **What does Francisco pull out of his pocket?**
a. Broom
b. Key
c. Window repair kit
d. Wallet
B. **What does Francisco buy from the store to clean the living room?**
a. Window repair kit
b. Blankets
c. Broom and cleaning supplies
d. Microwave
C. **What does Francisco find on the living room floor?**
a. Television
b. Microwave
c. Refrigerator
d. Waffle iron
D. **What is the condition of the living room when Francisco first enters?**
a. Bright and clean
b. Peeling paint, no furniture, and dirty
c. Filled with furniture and pleasant smells
d. None of the above

3. **Read the text below and complete the activities. (Summarizing) (2p.)**

Christmas

Talking about Christmas worldwide is fun, but it would take a long time. However, there is a clear difference between celebrations in Latin America, Europe and the United States. In Ecuador, families make a family dinner, as well as in the USA. In Europe, the traditional meal is turkey or another traditional food from the region. It's common for American people to make a reservation in a fancy restaurant, and at night they do some reading. In Ecuador, families pray "la novena." In Latin America, people usually do the shopping a few weeks before Christmas, but in the USA, parents buy gifts one or two months before. It does not matter where people are; many people celebrate the birth of Jesus, in the Catholic religion.

A. What is a common practice for Americans when it comes to dining out during Christmas?
a. Parents buy gifts three months before.
b. Make a reservation in a fancy restaurant
c. They read something.
d. They do nothing

B. Underline the statement that best expresses the main idea of the text above.
a. There are notable differences in Christmas celebrations between Latin America, Europe, and the United States.
b. In Ecuador, families pray "la novena."
c. People usually do the shopping a few weeks before Christmas
d. Many people celebrate the birth of Jesus, in the Catholic religion.

4. **In the following mid map match the unique Christmas celebration practices (1-4) with their regions (A-D). (2p) (summarizing).**
1. Families pray "la novena"
2. People usually do the shopping a few weeks before Christmas
3. Parents buy gifts one or two months before Christmas
4. Traditional meal is turkey or another regional food

A. Latin America

C. Europe

B. United States

CHRISTMAS

D. Ecuador

5. Label the pictures on the table below using words from the box (2p.) (Vocabulary)

family dinner - meal - pray - worldwide

A.		
B.		
C.		
D.		

THANKS FOR YOUR COLLABORATION!

Post-test

UNIVERSIDAD NACIONAL DE LOJA
DEPARTMENT OF PEDAGOGÍA DE LOS IDIOMAS
NACIONALES Y EXTRANJEROS
DATA COLLECTION INSTRUMENT: POST - TEST

Dear student, answer the following test with sincerity and honesty. Your answers will be anonymous and confidential.

Student`s code. ………………………………………………..

Date: ………………………………………………….

1. **BEFORE READING: Look at the pictures and answer the following questions: (Background knowledge) (2p).**

A. **What do you think the reading is about? Underline the answer.**

   a. The life of the children
   b. The last day of classes
   c. A day at school
   d. Juan's day

B. **Where do you think the children are?**

   a. At school
   b. In the cafeteria
   c. In the bedroom
   d. In the house

C. **What do you think the children are feeling?**

   a. Excited
   b. Angry
   c. Worried
   d. Sad

D. **What do you think the children expect in the end?**

   a. Make no friends
   b. Be the best in class
   c. May it be the best day
   d. Go home early

51

2. Read the text and then answer the following questions: (Vocabulary) (2p).

A day at school
Emma and Luis are two new children who go to the same school. It will be their first day of school and they are very excited because they will make new friends. Emma notices some objects in the classroom and tells her friend Luis to look at those beautiful **tables**, as well as the **blackboard** and the **chairs**, which are modern. Luis also tells her to look at the **bookshelf**, which is very large, and the teacher's **desk**, which is nicely decorated. Luis sits down and takes out a **notebook**, a **pencil** and an **eraser** from his **backpack**. Emma, for her part, takes out a new **book**, a **pencil**, a **pencil sharpener** and a **blue pen**. They want to meet their new teacher and hope that this day will be the best.

A. **What does Emma notice in the classroom?**
   a. Tables, blackboard, and chairs
   b. Bookcase and teacher's desk
   c. Notebook and eraser
   d. Book, pencil, and sharpener
B. **What does Luis point out to Emma in the classroom?**

   a. Desk, blackboard, and chairs
   b. Bookshelf and teacher's desk
   c. Notebook, pencil, and eraser
   d. Pencil, sharpener, and blue pencil
C. **What does Luis take out from his backpack?**

   a. Pen, suitcase and books
   b. Notebook, pencil, and eraser
   c. Book, pencil, sharpener, and blue pencil
   d. Bookcase and teacher's desk
D. **What does Emma take out from her backpack?**

   a. Eraser, pencil, ruler
   b. Notebook, pencil, and eraser
   c. Book, pencil, pencil sharpener, and blue pen
   d. Book, notebook, pencil
3. Read the text below and complete the activities. (Summarizing) (2p.)

Types of families

Talking about the different sizes of families in the world is fun. But it does take a little time. There are big families and small families. Big families are always made up of grandparents, parents, and many children, unlike small families that are usually parents and a child or two and others that are just the parents, i.e. husband and wife.

It is fun when there are many people in the house because you can have fun playing with cousins in the yard, playing video games in the living room or watching television and adults talking on the balcony or in the kitchen cooking. Small families like to read in their rooms and often have a bookshelf and parents have a study inside the house. No matter how big or small the families are, the important thing is the happiness within them.

A. Underline the statement that express the main idea of the text above.

    a. There are different types of families in the world like big and small families.
    b. Big families are always made up of grandparents, parents, and many children.
    c. Small families like to read in their rooms.
    d. It is fun when there are many people in the house.

B. What is the most important aspect, within every family no matter how big or small?

    a. The number of rooms in the house
    b. The location of the family's activities
    c. The happiness within the family
    d. The types of games

4. In the following mind map match following elements (A-D) with their descriptions (1-4). (Summarizing) (2p).

1. Usually consist of parents and one or two children
2. Prefer reading in their rooms and often have a bookshelf and a study
3. Enjoy playing with cousins, video games, and watching TV
4. Include grandparents, parents, and many children
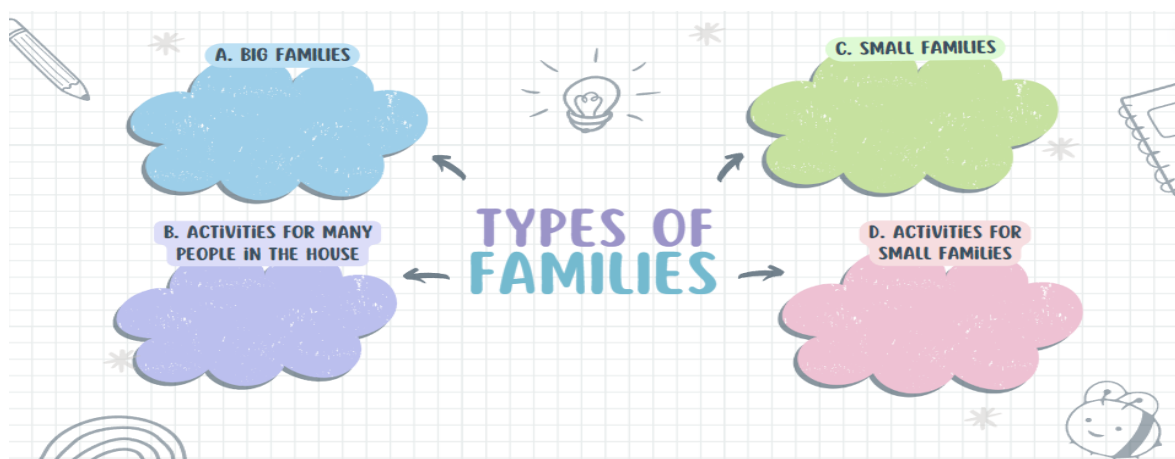
5. Label the pictures on the table below using words from the box. (Vocabulary) 2p.)

yard – cousins - living room – grandparents -		

A.		
B.		
C.		
D.		

THANKS FOR YOUR COLLABORATION!

Annex 2. Scoring guide

Nº	Question	Indicator	Score
1	BEFORE READING: Look at the pictures and answer the following questions.	Background knowledge	A. The new home of Francisco **(0,5)** B. Outside his new house **(0,5)** C. Worried **(0,5)** D. Transforming his house into a comfortable home **(0,5)**
2	Read the text and then answer the following questions.	Vocabulary	A. Key **(0,5)** B. Broom and cleaning supplies **(0,5)** C. Microwave **(0,5)** D. Pelling paint, no furniture and dirty **(0,5)**
3	Read the text below and complete the activities.	Summarizing	A. Make a reservation in a fancy restaurant **(1)** B. There are notable differences in Christmas celebrations between Latin America, Europe, and the United States **(1)**
4	In the following mind map match the unique Christmas celebration practices (1-4) with their regions (A-D)	Summarizing	A. Latin America – people usually do the shopping a few weeks before Christmas **(0,5)** B. United States – Parents buy gifts one or two monts before Christmas **(0,5)** C. Europe – traditional meal is turkey or another regional food **(0,5)** D. Ecuador – Families pray "la novena" **(0,5)**
5	Label the pictures on the table below using words from the box	Vocabulary	A. worldwide **(0,5)** B. family dinner **(0,5)** C. pray **(0,5)** D. meal **(0,5)**
	TOTAL		**10 points**

Nº	Question	Indicator	Score
1	BEFORE READING: Look at the pictures and answer the following questions	Background knowledge	A. A day at school **(0,5)** B. At school **(0,5)** C. Excited **(0,5)** D. May it be the best day **(0,5)**
2	Read the text and then answer the following questions	Vocabulary	A. Tables, blackboard, and chairs **(0,5)** B. Bookshelf and teacher's desk **(0,5)** C. Notebook, pencil, and eraser **(0,5)** D. Book, pencil, pencil sharpener, and blue pen **(0,5)**
3	Read the text below and complete the activities.	Summarizing	A. There are different types of families in the world like big and small families **(1)** B. The happiness within the family **(1)**
4	In the following mind map match the unique Christmas celebration practices (1-4) with their regions (A-D)	Summarizing	A. Include grandparents, parents, and many children **(0,5)** B. Enjoy playing with cousins, video games, and watching TV **(0,5)** C. Usually consist of parents and one or two children **(0,5)** D. Prefer reading in their rooms and often have a bookshelf and a study **(0,5)**
5	Label the pictures on the table below using words from the box	Vocabulary	A. Living room **(0,5)** B. parents **(0,5)** C. yard **(0,5)** D. cousins **(0,5)**
	TOTAL		**10 points**

Annex 3. Questionnaire

Dear student, answer the following questionnaire with sincerity and honesty. Your answers will be anonymous and confidential.

Student`s code. …………………………………………..

Date: ………………………………………….

Nº		Strongly agree	Agree	Strongly disagree
1.	Technological resources created a positive environment in the classroom.			
2.	It is important to make use of technological resources in the classroom.			
3.	I was motivated by using digital flashcards to learn vocabulary.			
4.	Using digital flashcards has improved my retention of vocabulary.			
5.	Quizizz help me grasp and remember background knowledge better.			
6.	The activities developed with Quizizz allowed me to have fun.			
7.	Technological resources awakened my curiosity in the process of reading comprehension.			
8.	I prefer to make use of technological resources to learn.			
9.	Creating mind maps in Canva has improved my ability to summarize information.			
10.	Mind maps in Canva has made reading comprehension more enjoyable.			

THANKS FOR YOUR COLLABORATION!

Annex 4. Field notes

FIELD NOTES		
Observation #: 1 **Topic:** Classroom objects (Vocabulary - digital flashcards) **Objective of the session:** To recognize and name various objects commonly found in a classroom and then read simple texts or instructions involving classroom objects and comprehend their meaning.	**Participants:** Students of ninth-year Basic General Education **Researcher:** Angie Michelle Yaguana Ramirez **Class size:** 32	**Role of the researcher:** Preservice teacher **Duration of the observation start/end time:** 3 periods of 40 minutes • Monday 7:10 – 7:55 (one hour). • Tuesday 10:40 – 12:00 (two hours).
Description of the event		**Reflective notes**
• Teacher presented and explained in digital flashcards the vocabulary about classroom objects to familiarize with a reading. • Teacher provided a short reading and students had to identify the vocabulary learned about the classroom objects.		• The students felt motivated to learn new vocabulary using digital flashcards. • On the other hand, with the help of the digital flashcards the students were able to remember with the image the name of each word that was new to them in the reading.

FIELD NOTES		
Observation #: 2 **Topic:** Common nouns (Background knowledge - Quizizz) **Objective of the session:** To identify common nouns within a given text, comprehend their role in conveying meaning showing questions in Quizizz to activate the background knowledge.	**Participants:** Students of ninth-year Basic General Education **Researcher:** Angie Michelle Yaguana Ramirez **Class size:** 32	**Role of the researcher:** Preservice teacher **Duration of the observation start/end time:** 3 periods of 40 minutes • Monday 7:10 – 7:55 (one hour). • Tuesday 10:40 – 12:00 (two hours).

Description of the event	Reflective notes
• Teacher explained briefly the concept of common nouns, then provided some examples. • Teacher showed some pictures, then in Quizizz some questions before the reading to activate the background knowledge of the students. • Students could have known what the reading was going to be about.	• The students said it was the first time they were used and asked questions on the Quizizz platform. • It was useful to use it because they were able to predict or make a background knowledge what the reading was going to be about, and in that way, they understood the text better.

FIELD NOTES		
Observation #: 3 **Topic:** Family members (Vocabulary – digital flashcards) **Objective of the session:** To identify the different family members to expand the student's vocabulary and familiarize in a reading context through digital flashcards.	**Participants:** Students of ninth-year Basic General Education **Researcher:** Angie Michelle Yaguana Ramirez **Class size:** 32	**Role of the researcher:** Preservice teacher **Duration of the observation start/end time:** 3 periods of 40 minutes • Monday 7:10 – 7:55 (one hour). • Tuesday 10:40 – 12:00 (two hours).
Description of the event		**Reflective notes**
• Teacher presented in digital flashcards pictures about the family members to activate English vocabulary. • Teacher gave the worksheet with a reading and students were able to identify the vocabulary words about the family.		• The students were motivated to learn new vocabulary using digital flashcards again. • When the researcher made them remember the family members again just by looking at the picture everyone wanted to participate and this was a good thing. Also, it was evidenced the improvement of the students' vocabulary.

FIELD NOTES		
Observation #: 4 **Topic:** Present simple and use of the verb to have (summarizing – mind map: Canva) **Objective of the** **session:** • To talk about real facts, habits and routines using the present simple in a reading context to summarize the key information of the reading. • To express possession and ownership of something using the verb to have in present simple.	**Participants:** Students of ninth-year Basic General Education **Researcher:** Angie Michelle Yaguana Ramirez **Class size:** 32	**Role of the researcher:** Preservice teacher **Duration of the observation start/end time:** 3 periods of 40 minutes • Monday 7:10 – 7:55 (one hour). • Tuesday 10:40 – 12:00 (two hours).
Description of the event		**Reflective notes**
• Teacher presented the topic that was present simple and the verb to have. • Teacher explained the structure of the present simple with have and gave some examples. • Students received the worksheet with the reading, they had a moment for read, then they had to identify the main idea and write in a template of a mind map: Canva. • Students underlined the other secondary ideas, finally, they had the most important points of the reading.		• At the beginning the students were not motivated because it was a bit difficult for them. • When they were putting the ideas in the Canva mind map, they said that it was easier to find the main idea and it makes the ideas look more organized. • The environment was enjoyable and the researcher could observe the improvement in the students at the moment of summarize the information.

FIELD NOTES		
Observation #: 5 **Topic:** Reading about my family /Age of people (Background knowledge - Quizizz) **Objective of the session:** • To describe the age of the members of family in a reading context showing questions in Quizizz to activate background knowledge.	**Participants:** Students of ninth-year Basic General Education **Researcher:** Angie Michelle Yaguana Ramirez **Class size:** 32	**Role of the researcher:** Preservice teacher **Duration of the observation start/end time:** 3 periods of 40 minutes • Monday 7:10 – 7:55 (one hour). • Tuesday 10:40 – 12:00 (two hours).
Description of the event		**Reflective notes**
• Teacher presented the topic about the family and their age of each member of the family. Then showed real examples, later the teacher asked to the students about their family and the ages of each of them. • Teacher showed some pictures then some questions about the reading that will be discussed.		• The questions in Quizizz help to the students to grasp and remember background knowledge in a better way. Additionally, they had fun trying to guess the questions in using the platform Quizizz.

FIELD NOTES		
Observation #: 6 **Topic:** There is/are + a/an/some/any **Objective of the session:** • To differentiate the uses of there is and there are with a/an/some and any. • To summarize the key information of the parts of the house using there is/are+a/an/some/ay using a mind map: Canva.	**Participants:** Students of ninth-year Basic General Education **Researcher:** Angie Michelle Yaguana Ramirez **Class size:** 32	**Role of the researcher:** Preservice teacher **Duration of the observation start/end time:** 3 periods of 40 minutes • Monday 7:10 – 7:55 (one hour). • Tuesday 10:40 – 12:00 (two hours).

Description of the event	Reflective notes
• Teacher first, presented the topic explaining the uses and the affirmative and negative form of **There is/are + a/an/some/any.** In the same way teacher provided examples to students understand very well. • Then, teacher remembered the parts of the house to familiarize with the reading. • Teacher presented the reading where students had to identify sentences with there is/are, then students read again and underline the main idea, then underline secondary ideas from the next paragraph. • After that, students put the ideas in a mind map using Canva. • Finally, students wrote the summary of the reading and answered some questions about the reading.	• Students were motivated to use Canva again to make a mind map and put the main and secondary ideas and thus make a single summary of the text. • In the same way they were able to improve their summarizing skills and above all the environment in the classroom was enjoyable, as everyone wanted to participate using Canva.

Annex 5. National Grading Scale

Qualitative scale	Quantitative scale
Master the required learning	9,00-10,00
Achieves the required learning	7,00-8,99
Is close to achieving the required learning	4,01-6,99
Does not reach the required learning	≤ 4

Annex 6. Informed Consent

Universidad Nacional de Loja

Carrera de Pedagogía de los Idiomas Nacionales y Extranjeros

DECLARACIÓN DE CONSENTIMIENTO INFORMADO

Yo, …………………………………, con cédula de identidad …………………… representante legal de el/ la estudiante …......……………………………………, autorizo que mi representado sea partícipe en una encuesta como parte del proyecto de investigación de Integración Curricular titulado **Recursos Tecnológicos y habilidades de comprensión lectora en estudiantes de educación básica superior de una institución pública de Loja, año lectivo 2023 – 2024,** llevado a cabo por **Angie Michelle Yaguana Ramírez**, estudiante de la Carrera de Pedagogía de los Idiomas Nacionales y Extranjeros de la Universidad Nacional de Loja. Comprendo que la participación de los niños y niñas en el desarrollo del presente proyecto no tendrá repercusiones en sus actividades escolares, evaluaciones o calificaciones. Además, la identidad de los niños y niñas no será publicada, y las imágenes registradas durante la propuesta de intervención, se utilizarán únicamente para fines investigativos y de aprendizaje.

Declaro haber sido informado/a que mis datos personales y de mi representado/a, serán protegidos por el anonimato y la confidencialidad. Tomado ello en consideración, otorgo mi consentimiento para que se realice el proceso inherente del proyecto antes mencionado en las clases de inglés.

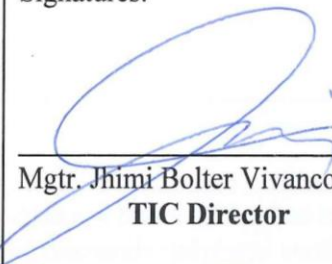Loja, 21 de noviembre del 2023

Firma: _____
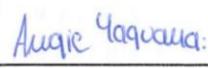
Nombres y Apellidos: _____

C.I: _____

Representante legal.

Annex 7. Lesson Plans

Lesson plan # 1				
Institution Name: Unidad Educativa "Pío Jaramillo Alvarado"				
Date:	November, 27ᵗʰ 2023		**School Year:**	2023-2024
Type of Institution	Public (x) Private ( )			
Institutional Tutor:	Mgs. Adriana Cecilia Prado Gutiérrez			
Academic Tutor:	Mgtr, Edgar Mariano Castillo Cuesta			
TIC Director:	Mg. Sc. Jhimi Bolter Vivanco Loaiza			
Preserve Teacher:	Angie Michelle Yaguana Ramírez			
Schedule:	Monday 7:55 – 8:40 (One hour)			
Time per lesson:	Monday - 45minutes		**Language Level:**	A1.1
Class: Number of Students:	8ᵗʰ "D": 32 students			
Topic: Contents:	Classroom objects (Vocabulary)			
Lesson Objectives:	• To recognize and name various objects commonly found in a classroom and then read simple texts or instructions involving classroom objects and comprehend their meaning.			
Materials	• Digital flashcards • PowerPoint presentation • Computer • Projector • Worksheets			

Starter (warmer, lead-in, review)	Time
Warm up: What's Missing? (Game) The teacher places several objects from the class on a table at the front of the room. Students observe the objects for one minute. Then they turn around while the teacher removes an object. Students open their eyes and try to identify the missing object.	5min

Pre-reading	Time
• Teacher presents and explains in a digital flashcards pictures about classroom objects to activate English vocabulary. • Teacher shows and repeat the names of each object, emphasizing pronunciation. • Teacher engages students by asking questions like "What is this?" and "Where is that?"	10min

During-reding	Time
• Teacher provides a worksheet to the students with a short reading. • During reading, students have to identify classroom objects that they found in the reading.	10min

• Students match with flashcards the corresponding names of the objects on the whiteboard.	
Post-reading	**Time**
• Students work in groups and discuss how many classroom objects they found, and then practice the pronunciation. • Students develop an activity of their workbook in relation to the vocabulary learned.	10min
Feedback/closure	**Time**
The teacher facilitates a class discussion on what was learned during the lesson and then thanks the students.	10min

Observations

....

....

Signatures:

Mgtr. Jhimi Bolter Vivanco Loaiza
TIC Director

Mgtr. Adriana Cecilia Prado Gutiérrez
Institutional Tutor

Mgtr. Edgar Mariano Castillo Cuesta
Academic Tutor

Angie Michelle Yaguana Ramírez
Preservice Teacher

Annex 8. Research Matrix

Theme	Technological resources and reading comprehension skills among ninth-grade students at a public institution in Loja, academic year 2023 – 2024			
Problem	**Objectives**	**5. Theoretical Framework**	**Methodological design. Action Research**	**Techniques/Instruments**
General problem How can technological resources develop English reading comprehension in ninth-grade students at a public institution in Loja? **Subproblems** • What is the effectiveness of the use of technological resources for developing reading comprehension in ninth-grade students of a public institution in Loja? • What are the perceptions about technological resources for English reading	**General Objective** To improve reading comprehension by the use of technological resources among ninth-grade students at a public institution in Loja, academic year 2023 – 2024 **Specific Objectives** • To identify the effectiveness of the use of technological resources to improve reading comprehension among ninth-grade students at a public institution in Loja, academic year 2023 – 2024. • To describe the students' perceptions about technological resources to improve reading comprehension among ninth-grade students at a public institution in Loja,	**Independent Variable** 5.1. Technological resources 5.1.1. Definition 5.1.2. Importance 5.1.3. Technological resources for English teaching learning 5.1.4. Technological resources to improve reading comprehension 5.1.5. Types of technological resources 5.1.5.1. Digital flashcards 5.1.5.2. Digital Pre-Assessments: Quizizz 5.1.5.3. Mind map: Canva **Dependent variable** 5.2. Reading comprehension 5.2.1. Definition 5.2.2. Importance of reading comprehension 5.2.3. Stages of reading comprehension 5.2.3.1. Pre-reading	**Preliminary Investigation** Mixed method: qualitative and quantitative **Intervention** Pre-During-Post (PDP) Model: • Pre-Reading • During-Reading • Post-Reading	• **Testing technique:** Pre/Post Test. • **Survey technique:** Questionnaire • **Observation technique:** Field Notes

comprehension in ninth-grade students of a public institution in Loja?	academic year 2023 – 2024.	5.2.3.2. During-reading 5.2.2.2. Post-reading 5.2.4. Types of reading comprehension 5.2.4.1. Vocabulary 5.2.4.2. Background Knowledge 5.2.4.3. Summarizing