

**Fostering English reading comprehension performance by implementing CALLA instructions model and metacognitive strategies mediated by web 2.0 resources in 6th-grade students from Gimnasio Militar Fuerza Aeroespacial Colombiana.**

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Universidad Abierta y a Distancia UNAD

Escuela Ciencias de la Educación ECEDU

Maestría en Mediación Pedagógica en el Aprendizaje del Inglés

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Approval page

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MG. Edith Lorena Grande Triviño

Thesis Advisor

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Jury

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### Resumen Analítico Especializado (RAE)

<b>Title</b>	Fostering English reading comprehension performance by implementing CALLA instructions model and metacognitive strategies mediated by web 2.0 resources in 6th-grade students from Gimnasio Militar Fuerza Aeroespacial Colombiana.
<b>Document Type</b>	Research Project to obtain the Master's degree in Pedagogical Mediation of Language Learning.
<b>Research Line</b>	Pedagogy, didactics, and curriculum line.
<b>Core Problem</b>	Pedagogical praxis, English language learning, and pedagogy innovation
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<b>Institution</b>	Universidad Nacional Abierta y a Distancia ( UNAD )
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<b>Keywords</b>	Reading comprehension- CALLA model - metacognition – metacognitive strategies – - web 2.0 resources - Field notes -artifacts.
	The current research study aims to explain how metacognitive strategies, the CALLA model supported by web 2.0 resources, contribute to fostering English reading comprehension of 6th-grade students from Gimnasio Militar Fuerza Aeroespacial Colombiana TQS ( Trés Esquinas, Caquetá) by developing metacognitive strategies in

learners as the effect of instructional lesson plans implementation. Web 2.0 resources mediated it.

**tion** The study has been developed in an educative and military context surrounded by the Amazon region. Then, it is a hermetic context full of exceptions and non-common aspects compared to the national educative context. However, these conditions make this study meaningful for the English teaching practice and the Colombian Aerospace Force context.

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The document is about five chapters. The first chapter depicts the research study introduction, its context, the statement of the problem as the research questions, the general and specific objectives, and the corresponding methodology to justify the research problem.

**Content** The second chapter refers to the state of the art and the presentation of other studies based on the current research problem and methodology. In this manner, the present chapter displays the conceptual and theoretical framework to support the research and its scopes.

The third chapter sets the research design, emphasizing the method, approach, and instruments implemented alongside the research process. Moreover, the sampling

population is described as the research impact, ethical protocols, data gathering techniques, and validation procedures.

The fourth chapter addresses the findings and their analysis, the categorization process, the categories discussions, and operationalization. The fifth chapter evidences the outcomes, the research limitations, pedagogical implications, and recommendations for further studies. The annexes are set at the of the document. They are the informed consent, field notes, lesson plans and the artifacts 'list.

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The research process was grounded on an Action research approach and interpretive method; it considered qualitative data by applying flexible instruments and interpretation. In this sense, The research process was based on four phases: first, an **Method** action plan about the problem and the diagnosis; second, the action that consists of **ology** the schedule, literature on how to improve the situation in practice, evidence, and description of the action in the light of the theory; third, observation and overcoming of the action; fourth data analysis, abstraction, and theorization and fifth, outcomes and conclusions presentation.

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Nowadays, the necessity of knowing and mastering the English language in our society is mandatory for enrolling in a recognized superior educative institution or getting a job; in fact, a person who does not have proficiency in this language is cataloged as illiterate. Hence, primary and secondary schools from rural and urban areas in Colombia must strengthen English teaching differently since learners have serious difficulties acquiring this language despite the many efforts the Colombian Ministry of Education has made through standards and criteria displayed in different **Conclus** laws and guides of teaching and learning.

**ions** In this regard, the current research focuses on fostering English language reading comprehension by implementing strategies full of metacognitive and CALLA model foundations linked to Web 2.0 resources as an innovative proposal. Nonetheless, the outcomes of this mixed implementation are meaningful for the English reading since CALLA encourages metacognitive skills learners, which are essential to any learning process. It means that teachers are invited to change their traditional pedagogical practices in English language teaching to pedagogical practices that allow the learners to play an active role in their learning process mediated by technology. Nevertheless, it might be inferred from the outcomes of this study that implementing CALLA model instructions and metacognitive strategies in hand with technology might be beneficial not only to foster English reading comprehension performance but also for any other language skill. Finally, it is concluded that the present study invites teachers to deepen its proposal and discover new results that this research did not scope because of the time and experience of the researcher.

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**Append** Informed consent, field notes, lesson plans, artifacts list table

**ices**

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**Advisor** Edith Lorena Grande Triviño

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### **Abstract**

The current research study aimed at fostering the reading comprehension performance of sixth-grade students at GIMFA TQS by implementing the CALLA instructions model ( Cognitive Academic Language Approach ) and developing metacognitive strategies in learners supported by Web 2.0 resources. Then, it described how the teacher performs his classes during the implementation process using CALLA instruction model lesson plans and their effects on students' reading comprehension performance mediated by Web 2.0 resources. Then, the five stages of CALLA instruction proposed by Chamot (1995) were taken into account: “ preparation, presentation, practice, evaluation, and expansion “ ( p. 392). In unity, Planning, monitoring, orchestrating, self-evaluating, and reflecting were the five metacognitive strategies implemented, as Anderson (2002) postulated, linked to the For this, students performed artifacts designed using LIVEWORKSHEET.COM grounded in these assumptions and provided reflections posted on a personal blog. This proposal allowed learners to foster their reading comprehension performance by implementing the CALLA instruction model. The researcher implemented different instruments to collect data to analyze the findings, such as lesson plans, field notes, and student artifacts. The research process was grounded on action research foundations and contemplated qualitative data. The teacher was the researcher and the principal observer of everything in the class.

**Keywords:** Reading comprehension- Learning strategies- CALLA model - metacognition  
 – metacognitive strategies – Web 2.0 resources

## Resumen

El estudio de investigación actual tuvo como objetivo fomentar el rendimiento de comprensión de lectura de los estudiantes de sexto grado en GIMFA TQS mediante la implementación del modelo de instrucciones CALLA ( modelo cognitivo académico de aprendizaje de lenguas ), y el desarrollo de estrategias metacognitivas en los estudiantes con el apoyo de recursos web 2.0. Luego, describió cómo el docente realiza sus clases durante el proceso de implementación utilizando los planes de lecciones del modelo de instrucción CALLA y sus efectos en el desempeño de comprensión lectora de los estudiantes mediado por recursos Web 2.0. Luego, se tomaron en cuenta las cinco etapas de la instrucción CALLA propuestas por Chamot (1995) “preparación, presentación, práctica, evaluación y expansión” (p. 392). En unidad, la planificación, el seguimiento, la orquestación, la autoevaluación y la reflexión fueron las cinco estrategias metacognitivas implementadas, como postuló Anderson (2002), vinculadas a la Para esto, los estudiantes realizaron artefactos diseñados utilizando LIVEWORKSHEET.COM basados en estos supuestos y proporcionaron reflexiones. publicado en un blog personal. Esta propuesta permitió a los estudiantes fomentar el rendimiento de comprensión de lectura de los estudiantes mediante la implementación del modelo de instrucción CALLA. El investigador implementó diferentes instrumentos para recopilar datos para analizar los hallazgos, como planes de lecciones, notas de campo y artefactos de los estudiantes. El proceso de investigación se basó en los fundamentos de la investigación-acción y contempló datos cualitativos. El profesor era el investigador y el principal observador de todo en la clase.

**Palabras clave:** Comprensión lectora- Estrategias de aprendizaje- modelo CALLA - metacognición – estrategias metacognitivas – recursos web 2.0 .

## Table of Content

Introduction to the Research Study.....	<b>23</b>
Context of the Research Problem .....	25
Research Questions and Objectives .....	28
Research Question .....	28
General Research Objective.....	28
Specific Research Objectives.....	29
Rationale for the Study .....	29
Rationale for the Research Problem .....	29
Rationale for the Methodologies to Address the Problem .....	30
Literature Review .....	<b>32</b>
Introduction to the Literature Review.....	32
State of Art.....	32
Integration of Web 2.0 Tools and the CALLA MODEL to Enhance Reading and Writing Skills in ESL Beginner Students.....	32
Effects of Metacognitive Strategy Instruction on the Reading Comprehension of English Language Learners Through Cognitive Academic Language Learning Approach (CALLA) .....	33
Effect of CALLA Metacognitive Strategy Instruction on Reading Comprehension and Reading Awareness.....	34
Use of Metacognitive Online Reading Strategies by Student Teachers of English.....	34

Uso de la Estrategia Interactiva Liveworksheets Para Mejorar la Comprensión Lectora del Inglés en Estudiantes de Una Institución Educativa .....	35
Improving Language Learning Strategies and Performance of Pre-Service Language Teachers Through a CALLA-TBLT Model .....	36
A Proposal to Strengthen Reading Comprehension Skills Through Metacognitive Strategies in Advanced Students Majoring in Modern Languages at La Gran Colombia University...	37
The Impact of the Interactive Reading Approach on Seventh Graders' Reading Comprehension .....	38
Moodle-Based Worksheets to Enhance Reading Comprehension.....	39
Theoretical Framework.....	40
Language Learning Strategies.....	41
Classic Reading Comprehension and Strategies.....	42
Cognitive Academic Language Learning Approach (CALLA).....	45
Metacognition and Strategies in Language Learning .....	46
Interactive Tools in English Language Learning.....	48
Conceptual Framework.....	49
Communicative Competence .....	49
Levels of Reading Comprehension.....	51
Reading Levels According to the Common European Reference Framework for Languages (CEFR).....	52
Liveworksheets as Interactive Web 2.0 Resource in Reading Comprehension Skill.....	53



Rationale of the Research Study on the Literature .....	53
<b>Research Design .....</b>	<b>55</b>
Introduction to Research Design.....	55
Methodological Design.....	56
Research Method .....	56
Research Approach .....	56
Context of the Research .....	57
Population and Sampling Procedures .....	57
Researcher's Impact.....	58
Ethical Protocol.....	58
Data Collection Techniques .....	59
Description and Rationale of the Instruments.....	60
Validation Procedures .....	61
Pedagogical Intervention and Application.....	62
<b>Data Analysis and Findings .....</b>	<b>67</b>
Introduction to Data Analysis and Findings .....	67
Data Management Procedures .....	67
Categories .....	68
Discussion of Categories.....	69
Reading Comprehension Development .....	85

Discussions and Conclusions.....	<b>91</b>
Introduction To Arguments And Conclusions.....	91
Importance Of The Results .....	91
Pedagogical And Research Implications For The Field Of Study.....	94
Research Limitations On The Present Study .....	94
Recommendations For Further Research.....	95
Conclusions.....	96
Bibliographic References.....	<b>98</b>
Appendices.....	<b>112</b>

**List of Tables**

<b>Table 1</b> <i>Qualitative Categories</i> .....	69
<b>Table 2</b> <i>Categories in Teaching Strategy</i> .....	70
<b>Table 3</b> <i>Categories in Learning Strategy</i> .....	79
<b>Table 4</b> <i>Reading Comprehension Development</i> .....	86

## List of Figures

<b>Figure 1</b>	<i>A model of Metacognition</i> .....	24
<b>Figure 2</b>	<i>Test Scores on Reading Comprehension</i> .....	25
<b>Figure 3</b>	<i>Language Learning Strategies</i> .....	41
<b>Figure 4</b>	<i>Students Solving Artifacts</i> .....	63
<b>Figure 5</b>	<i>Bogota's Artifact Sample</i> .....	64
<b>Figure 6</b>	<i>Cartagena's Artifact Sample</i> .....	65
<b>Figure 7</b>	<i>Amazon's Artifact</i> .....	66
<b>Figure 8</b>	<i>Teacher's Actions During the Preparation Phase</i> .....	71
<b>Figure 9</b>	<i>Teacher's Actions During the Presentation Stage</i> .....	72
<b>Figure 10</b>	<i>Teacher's Actions During the Presentation Section</i> .....	73
<b>Figure 11</b>	<i>Bogota's Artifact Presentation Stage</i> .....	74
<b>Figure 12</b>	<i>Teacher's Actions During the Self-Evaluation Stage</i> .....	75
<b>Figure 13</b>	<i>Topic Explanation</i> .....	76
<b>Figure 14</b>	<i>Teacher's Actions During Expansion Sections</i> .....	77
<b>Figure 15</b>	<i>Students' Actions During the Preparing and Planning Phase</i> .....	80
<b>Figure 16</b>	<i>Students Actions During the Selecting and Using Phase</i> .....	81
<b>Figure 17</b>	<i>Students' Actions During Monitoring Phase</i> .....	81
<b>Figure 18</b>	<i>Students' Actions During Orchestrating Phase</i> .....	82
<b>Figure 19</b>	<i>Students' Actions During the Evaluating Phase</i> .....	83
<b>Figure 20</b>	<i>Categories and Subcategories Discussion</i> .....	84
<b>Figure 21</b>	<i>Boosting Prior Knowledge Section From Bogota's Artifact</i> .....	87
<b>Figure 22</b>	<i>Monitoring Section From Amazona's Artifact</i> .....	88

<b>Figure 23</b> <i>Quantitative Scores</i> .....	89
<b>Figure 24</b> <i>Blog Samples</i> .....	92
<b>Figure 25</b> <i>Evidence of Students Developing Artifacts</i> .....	93

### **List of Appendices**

<b>Appendix A. Informed Consent</b> .....	112
<b>Appendix B. A Field Notes Sample</b> .....	113
<b>Appendix C. Lesson Plan Sample</b> .....	120
<b>Appendix D. Artifacts List</b> .....	121

### **Introduction to the Research Study**

The following study obeyed the action research type and considered qualitative variables to diagnose, examine, describe, and answer the research's question problem: To what extent can the metacognitive strategies, the CALLA model supported web 2.0 resources, contribute to fostering English reading comprehension of 6th-grade students from Gimnasio Militar Fuerza Aeroespacial Colombiana TQS?. Then, the study aimed at fostering English reading comprehension performance with 6th-grade students at Gimnasio Militar Fuerza Aeroespacial Trés Esquinas (GIMFA TQS) through the implementation of web 2.0 resources as interactive reading comprehension worksheets with metacognitive strategies and CALLA instructions. The students are between 11 and 12 years old and their dreams are about making part of the Colombian Aerospace Force rows as militaries or civilians; they love participating in the English classes, demonstrating curiosity for learning.

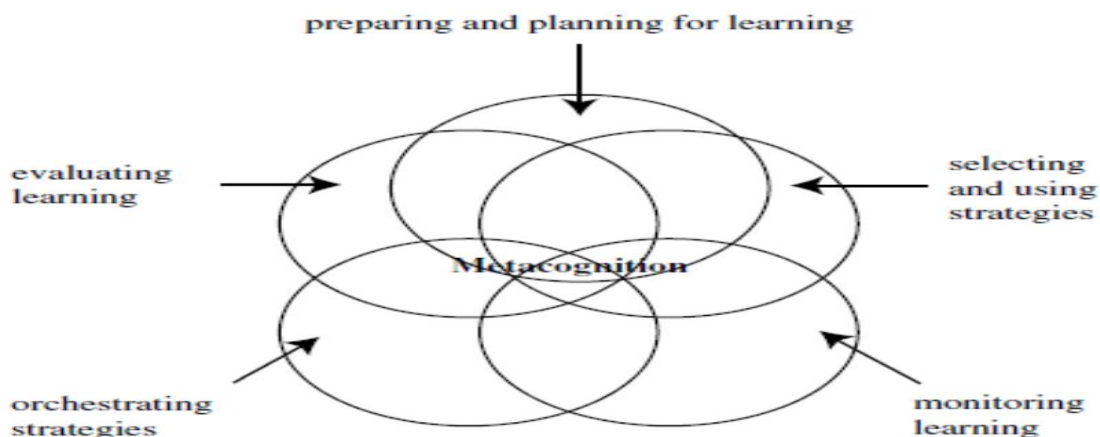
The institution is one of the five military schools from the Colombian Aerospace Force, located inside a military base named CT. Ernesto Esguerra Cubides is settled in the rural area of Tres Esquinas, Caquetá, and only the authorized staff can enter the air military unit by plane because of the armed conflict presented in the region. This factor closes the context and makes it challenging to execute any research study, requiring a protocol for asking permission. One of the school's missions is to offer well-being for the Colombian Aerospace staff; then, its population is selected, and the classes are not populated. It helps most classes to be personalized, and the teacher can center more on each student's needs.

Nonetheless, this study's starting point was the students' low performance in English reading comprehension. Therefore, five metacognitive strategies, such as planning, monitoring,

and orchestrating self-evaluating, proposed by Anderson (2002), were implemented to tackle the problem, as shown in Figure 1.

### Figure 1

#### *A model of Metacognition*



*Note.* The graph shows the five metacognitive strategies according to Anderson (2002)

These metacognitive strategies, linked to the CALLA instructional model, were implemented to support problem-solving. Additionally, for the purpose of the study, to foster English reading comprehension performance, two different Web 2.0 resources were applied. The first was interactive artifacts using the LIVEWORKSHEETS site, and the second was a personal blog using google sites. Those resources were necessary to achieve the research objectives.

Accordingly, chapter 1 presents the contextualization of the research, the research problem, its variables, background information to the research, theories and other studies that support the variables and the study assumptions, some keywords, the purpose of the research and its importance, the reasons why this study was developed, as well as the study questions, main and specific objectives to be accomplished.

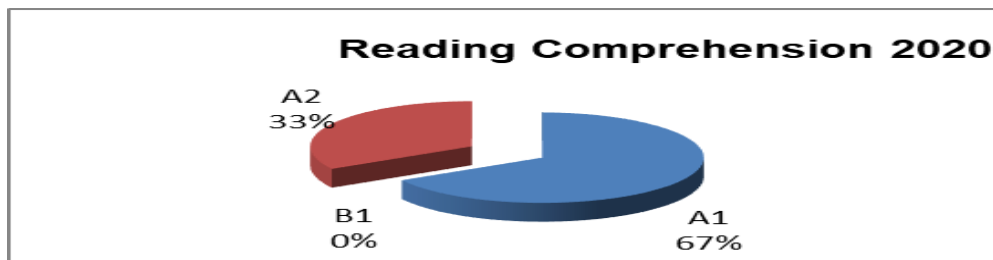


## Context of the Research Problem

The Gimnasio Militar Fuerza Aeroespacial Tres Esquinas (GIMFA TQS) school is situated in the rural zone of Solano municipality, Caquetá. Then, this research was carried out with students from sixth grade. This GIMFA is one of the five military schools from the Colombian Aerospace Force, located inside a military base named CT. Ernesto Esguerra Cubides. The school aims to educate the Colombian Aerospace Force staff (Military and Civilians) and strengthen their English. Therefore, the intensity of English classes is six hours weekly in a face-to-face modality. The COVID-19 pandemic has not had many incidences in the region due to the size of the population and the entry controls to the base. However, learners had to adopt the virtual modality a few months ago, obeying the government guidelines and having virtuality acceptance by the educative community.

### Figure 2

*Test Scores on Reading Comprehension*



*Note.* The graph shows the 5<sup>th</sup>-grade students' reading comprehension session in the English Greenwich exam in 2020. Adapted from *GIMFA school file, 2020*.

Figure 2 displays the official results of an examination applied in 2020 by GREENWICH editorial, the current edition of the English books. It is evident a low performance, according to Guia 22 (2014), which the Colombian Ministry of Education proposes for displaying the Basic Standards of Proficiency in Foreign Languages in Colombia, established A1 the level for students from 4th grade, A 2 for 5th and 6th grades (Guia 22, 2014). Then, 50 % of the students

got A1 and the other 50 % in vocabulary, while 67 % performed A1 and 33% A2 in reading comprehension skills.

Nonetheless, this report did not reveal the specific performance in the reading comprehension components; it just showed general results. Meanwhile, the Colombian Ministry of Education on the Guia 22 contemplates pragmatic and sociolinguistic competencies. Additionally, those results were from the last year, and it was necessary to update outcomes to know the current state of learners' reading comprehension and their weaknesses (Escobar & Jimenez, 2019). For that reason, the pretest was applied to the students. This test was based on a real reading comprehension section from Pruebas Saber (2018), divided into pragmatic, sociolinguistic, and literal competencies. The level of this examination was A2 since the Guia 22 demands sixth-grade students. Learners with A2 proficiency can identify primary and secondary ideas, comprehend daily information, and single and short cultural and academic texts (Guia 22, 2020).

The results confirmed that students did not have the required performance in English reading comprehension; most were under A2, and the lowest competence was literal. This way, the research problem was detected, and two variables were posed: Low English reading comprehension performance. The second was the lack of reading comprehension strategies, such as scanning and looking at pictures and highlighting main and secondary ideas. Thus, it was decided to take the low performance of the students in English reading comprehension as a general problem in this research process.

In this regard, the main goal of this research was to foster English reading comprehension performance with 6th-grade students at GIMFA TQS by implementing web 2.0 resources such as interactive reading comprehension worksheets with metacognitive supported by the CALLA

instruction model. Metacognitive strategies have a more significant role in foreign language learning because they involve students' responsibility to make them aware of their learning process (Anderson, 2002); web 2.0 resources dynamize the experience of learning through complete tools that open a wide range of possibilities to learn and teach the language (Pardo, 2013 cited in, Camargo, 2018). Thus, it was considered appropriate to mix metacognitive strategies with web 2.0 resources to dynamize the students' English language learning experience innovatively and reflectively and achieve the research goals since students who comprehend and reflect on what they read get better exam results (Garcia & Arevalo, 2018).

The following studies are related to the current research problem and aim to support the previous outlooks. Firstly, Ahmadi and Ismaili (2013) developed a research study in Malaysia with English Foreign language learners (EFL), and those learners had difficulty understanding texts, inferring meanings, and identifying main ideas, sharing similar challenges to the present study; then, they concluded that metacognitive reading strategy consciousness involves a significant role in reading comprehension and educational process.

Secondly, Lysenko and Abrami (2014) researched the effect of implementing two web-based applications, an interactive multimedia literacy software, and a digital process portfolio with early elementary students from six English schools in Quebec, Canada. The study revealed the positive impact of digital media on early elementary students' reading comprehension; students using both resources performed better in reading and writing than traditional resources. Even though the current research did not compare tools, it implemented a blog and media resources to solve English reading comprehension issues like Lysenko and Abrami's study.

Finally, Gulbinskienė et al. (2017) confirmed in their research the students' motivation, metacognitive awareness, and reading performance improvement when using Moodle as a virtual

learning environment (VLE). This study was related to the current research proposal because it intended to implement a VLE in which students applied metacognitive strategies to foster English language reading comprehension; in the same manner, students increased their metacognitive awareness. Nevertheless, more studies related to this research were addressed in the following chapter.

To conclude this section, metacognitive, reading strategies, and web 2.0 resources offer tools for helping students understand how they learn dynamically, allowing learners to reflect on mechanisms that enable them to boost their thinking. Then, it is evident that the previous studies contribute to the present study since the goal is to enhance students' English reading comprehension skills mediated by Web 2.0 resources with metacognitive and reading strategies. Hence, it is one of the essential aspects of this research; it was intended to foster English reading comprehension through innovative resources that enriched the English language learning experience.

## **Research Questions and Objectives**

### ***Research Question***

To what extent can the metacognitive strategies, the CALLA model supported web 2.0 resources, contribute to fostering English reading comprehension of 6th-grade students from Gimnasio Militar Fuerza Aeroespacial Colombiana TQS?

### ***General Research Objective***

To explain how metacognitive strategies, the CALLA model supported by web 2.0 resources contribute to fostering English reading comprehension of 6th-grade students from Gimnasio Militar Fuerza Aeroespacial Colombiana TQS

### ***Specific Research Objectives***

To implement three online interactive reading comprehension worksheets supported by CALLA instruction and metacognitive strategies.

To analyze the effects on students' English reading comprehension after implementing the three online interactive worksheets supported by CALLA instructions and metacognitive strategies

### **Rationale for the Study**

#### ***Rationale for the Research Problem***

Nowadays, ICTs have become a vital mediation tool in the teaching-learning process. It is demonstrated by noting how education worldwide has been integrating these resources into the different areas of knowledge, thus becoming a line of research in which other pedagogues and researchers have decided to deepen to describe what impacts ICT produces in a classroom and propose new strategies for integrating these with education. Hence, English language teaching as a foreign language is not the exception; there are many studies around the world, at the national and regional levels, in which ICT has been used in the teaching-learning processes like Virtual Learning Environments, Open Educational Resources, Virtual Learning Objects, blogs, interactive worksheets among others, have been implemented showing different results, almost all with positive impact (Escobar & Jimenez, 2019)

Pardo, as cited in Camargo (2018), states that ICT dynamizes the learning experience through the possibility of implementing many Web 2.0 resources that could be set in Virtual Learning environments. Metacognition encloses self-monitoring, and self-reflection on the learning process (Flavell, 1979). It is helpful to work with metacognitive strategies with web 2.0 resources for dynamizing and fostering the students' reading comprehension skills; at the same

time, they create and boost metacognitive skills, which are essential to success in any learning process.

***Rationale for the Methodologies to Address the Problem***

Low English language reading performance, poor reading strategies, and lack of awareness in the learning process hinder learning and teaching processes. Then, metacognition is necessary for English language learning and other aspects of the students' lives. In this sense, the present research aims to foster English language learning grounded on metacognition foundations as the mechanism that boosts the learners' consciousness, who must acquire the ability to decide what strategy to implement for developing a task, having the opportunity to determine how, why where, and when to expand their knowledge (Flavell, 1979).

In this manner, metacognition and its strategies offer tools for helping students understand how they learn; as a result, it refers to mechanisms that enable students to see their thinking. Accordingly, the students from Gimnasio Militar Fuerza Aeroespacial Tres Esquinas (GIMFA TQS) demonstrate the enormous challenge of learning because of how they interpret the knowledge. They expect their teachers to provide them with all of the resources they need to succeed, but they choose to wait when given a chance to develop their learning strategies. Effectively, when teachers are mindful of how students learn, they can implement the right strategy to gain new knowledge effectively, and, as a result, they will become more critical thinkers (Ku and Ho, 2019).

To address the research problem was fundamental to foster students' reading comprehension abilities since they will interpret what they read; students may interpret and complete their assignment correctly; however, it is mandatory to go further to the literal senses. Considering that readers set their text analysis or model of the text using a variety of fresh

materials, including the author's content and textual facts, their knowledge, and perceptions to write language reports (Ransiski & Padak, 2016) In this manner, students must be mindful of the various elements they will use to learn, including grammar, prior experience, creativity, and relationships, among others. In effect, learners benefit from feeling like they are a part of the article; if they can see themselves within the text, they can learn more and be more likely to keep reading reports (Ransiski & Padak, 2016).

The execution of this research is expected to promote learners and teachers at GIMFA times for performing metacognition and its tools as an essential instrument needed to develop various types of assignments helpful in their daily days; the students' academic performance will be noticeably better when they learn how to learn, besides school must encourage the habit of reading due to the positive effect on the student's attitude, academic performance including the English learning process. Moreover, they might recognize the value of collaborative work in the following social interchanges where they may be required to use metacognitive skills to complete a specific task. On the other hand, the study may provide resources to teachers from different areas of English to support the habit of reading and its progress while nurturing their pedagogical practice and supporting students' confidence when they read.

## **Literature Review**

### **Introduction to the Literature Review**

From more to less important, this chapter presents current research papers from international and national contexts on reading comprehension grounded on Metacognition and its strategies, such as boosting prior knowledge, monitoring, and evaluating/reflecting. Strategies perfectly connected to the CALLA model mediated by web 2.0 resources as an effective strategy in fostering English reading comprehension skills and language learning experience. Moreover, the subsequent studies contemplate similar strategies to collect data. Consequently, this chapter is fundamental for this research process since its theoretical foundations were grounded here.

### **State of Art**

#### ***Integration of Web 2.0 Tools and the CALLA MODEL to Enhance Reading and Writing Skills in ESL Beginner Students***

Galindo (2021 ) presented the first study in the international context, a dissertation for the Master of Arts in Teaching English to Speakers of Other Languages, and it was carried out at Greensboro College with first-grade ESL living in the USA. This study intended to develop English reading comprehension skills using digital tools, the CALLA model, and Metacognition. A virtual environment displayed and mediated didactic literacy lessons on reading comprehension. The methodology applied was based on action research since the teacher participated in the whole study, assuming a critical and reflective role in his pedagogical practices (Burns, 2010 ), and it considered quantitative and qualitative data from teacher journals, interviews, pre-tests, and worksheets.

According to the results, the CALLA and Metacognition allowed learners to build higher thinking. Similarly, the learning process mediated with Web 2.0 resources permitted teachers to



enrich their pedagogical practices and motivate and improve the student's language learning (Nejad & Masoud, 2017). Then, Metacognition and CALLA were suitable for both teacher and student since they allowed to improve both experiences by having a self-regulated learning process. In this regard, Marimuthu et al. (2016) stated that "implementing CALLA and metacognition might be a challenge for teachers whose strategies are traditional" (p. 89).

***Effects of Metacognitive Strategy Instruction on the Reading Comprehension of English Language Learners Through Cognitive Academic Language Learning Approach (CALLA)***

Nejad and Mahmoodi (2017) performed the following study. The study was applied to 111 intermediate EFL students from Iran and aimed to research the effect of metacognitive strategy training and CALLA on reading comprehension performance. For this purpose, students presented an entry test to know the language's initial level. Then, they received five sessions of instructions on metacognitive reading strategy in hand with the Cognitive Academic Language Approach. Therefore, each session kept five steps: "preparation, presentation, practice, self-evaluation, and expansion" (Nejad & Mahmoodi, 2017, p. 140), in which learners develop metacognitive strategies. Finally, students presented a final test for evaluating the whole process. The results revealed the positive and significant effect between metacognitive reading strategy and CALLA on the students' reading comprehension performance.

This study was a relevant background for the current research; it addressed and demonstrated the positive effect of the reading comprehension students' performance in 5 steps grounded on the Metacognition reading strategy and CALLA. Likewise, it applied the same instruments as entry and final tests. Even though its research model was correlational because of the size of its population, the study provided meaningful theoretical procedural foundations to the current research.

***Effect of CALLA Metacognitive Strategy Instruction on Reading Comprehension and Reading Awareness***

Tawarik et al. (2021) conducted the subsequent research study from this section. A survey was carried out by four master's students from the English Language Education Program of Tanjungpura Pontianak University, Indonesia. Then, the analysis was applied to the entire population of XI grade from senior high school in the same city and country. It analyzed the effect metacognition strategies and CALLA instruction had on students' reading comprehension and awareness. The CALLA instruction was given with web 2.0 resources in the face-to-face modality.

The researchers divided the population into two groups: an instructed group with metacognitive and CALLA supported by web 2.0 tools and a traditional-trained group. Two groups are tested differently by combining the study with a quasi-experimental research design. Before the instruction, both groups presented a pre-test, and after the corresponding instruction, they took a post-test as an instrument for collecting data. The results showed that the instructed group performed better in English reading comprehension and reading awareness than the traditional one. Then, Ahmadi and Ismaili (2013) recognized that "metacognition is probed to provide critical and understanding skills to learners" (p. 235). These results put in evidence the benefits of mixing Metacognition and CALLA in the English reading, being significant to the context of the present research since the English class from GIIMFA obeys a traditional mastering class.

***Use of Metacognitive Online Reading Strategies by Student Teachers of English***

Öztürk (2018) conducted a study that did not give the CALLA model in its proposal. Still, it aimed to explore the impact of mixing online metacognitive and reading strategies on the

English reading comprehension performance of 147 first-year international students from different Turkish universities. Here, the participants performed their reading using online tools using their laptops and cellphones. Diverse instruments were applied as a pre-test to know the students' reading comprehension level and a checklist for checking the final state of participants' Metacognition. The previously addressed instruments supported action research as a research methodology and its design and quantitative and qualitative data.

However, the study concluded that online reading supported by prior knowledge and monitoring stages become more vital since online reading requires exploration due to the peak of new literacies (Öztürk, 2018). Similarly, Guapacha et al. (2017) stated that "metacognition is an indirect strategy, and the CALLA model involves direct strategies" (p. 104). Therefore, the metacognitive strategies might fit perfectly with the CALLA model as a direct and instructional mediator between boosting students' skills and making them aware of their learning process. For that reason, mixing these strategies might benefit the reading comprehension enhancement of GIMFA TQS students.

***Uso de la Estrategia Interactiva Liveworksheets Para Mejorar la Comprensión Lectora del Inglés en Estudiantes de Una Institución Educativa***

Gómez (2022) addressed another study from the international context. It was a master's dissertation sponsored by the Cesar Vallejo university from Lima, Peru, and 30 secondary students applied for it. The objective of the present study was to determine the effect of the Liveworksheets and Google Classroom implementation as an interactive strategy in English reading comprehension enhancement. Additionally, this study kept the action research design, observation, and pre / post-tests as the instruments for gathering the data.

Notwithstanding, this research was not grounded on metacognition and CALLA foundations; it was based on web 2.0 resources such as Liveworksheets, Google Classroom, and devices in hand with reading comprehension strategies that promoted a virtual interaction, an interactive approach. The reading comprehension strategies also stated similar stages like thinking before reading, scanning, and skimming, closely similar to what the metacognition and CALLA models address. Likewise, the CALLA model involves an interactive approach, which might trigger the implementation of CALLA instructions (Thomas et al., 2022). This study is essential background for the present research. It proposes fostering English reading comprehension by implementing CALLA and Metacognition mediated by web 2.0 as liveworksheets workshops displayed on the Google Classroom platform.

It is convenient to highlight other secondary research whose findings provide validity and support to the present study's proposal. Nigerian research carried out by Fola-Adebayo (2014) stated that integrating Blogging and Web 2.0 resources is a practice that leads to continuous knowledge construction and encourages metacognition skills development and peer interaction. Furthermore, Susanti et al. (2021), in their study executed in Indonesia during the COVID-19 pandemic, demonstrated that some of the several positive effects that Google Class Room media had on English learners were the flexibility and the motivation reflected in the improvement of their English reading comprehension skills.

### ***Improving Language Learning Strategies and Performance of Pre-Service Language Teachers Through a CALLA-TBLT Model***

Guapacha et al. (2017) present the first study in the national context. The University of Valle sponsored this study, which was applied to 33 language teachers of first-year pre-service students from the university. It intended to improve the teachers' English language performance

and learning strategies by implementing CALLA instruction grounded on Oxford taxonomy, which states Metacognition into the indirect processes and cognition into the direct methods (Oxford, 1990 cited in Guapacha et al., 2017). Regarding the research design, this study proposed an action research model based on quantitative and qualitative data gathered through questionnaires, surveys, and field notes during the three stages that stood out: observations, planning, intervention, reflection, and evaluation (Guapacha et al., 2017, p. 106).

However, the study was not grounded on technology or Web 2.0 resources but considered more language skills like writing, listening, and reading; it probed the effectiveness of CALLA instruction on the language learners since they demonstrated the best performance in reading skills. Learners powered new capacities such as selecting a reading plan, reflecting on what they read, and self-evaluating them; then, they enhanced their Metacognition because Aghaie and Zhang (2017 ) considered that CALLA boosts students' Metacognition and better comprehension of their learning process through explicit instructions In this manner, the study's findings provided a meaningful background for the present research scope.

***A Proposal to Strengthen Reading Comprehension Skills Through Metacognitive Strategies in Advanced Students Majoring in Modern Languages at La Gran Colombia University***

The following national study to be presented was developed by Ardila and Gonzales (2020). The research study was a bachelor's degree in English requirement carried out in the mentioned university and intended to strengthen English reading comprehension in advanced modern language students by designing a handbook full of infographics with metacognition and CALLA foundations. Therefore, the study proposed planning, monitoring, self-reflecting, and evaluating stages. Moreover, it contained surveys, questionnaires, and field notes to gather quantitative and qualitative data framed in an action research design.

Even though this study only proposed infographics to improve English reading comprehension, they are cataloged as new educational environments due to the web 2.0 boom as blogs and online worksheets are (Yildirim, 2016). It articulated Metacognition, CALLA, and reading strategies to enhance reading skills, which resulted in remarkable results for the present research study. As the current research study proposed, it presented a fresh way to broaden reading comprehension issues. Additionally, "the researcher's intervention during the research process was an outstanding characteristic of the action research design" (Burns, 2010, p.3).

***The Impact of the Interactive Reading Approach on Seventh Graders' Reading Comprehension***

The present study was conducted by Mena (2021). It was a master's dissertation for getting the Master of English didactics title from the University of Caldas. This research was conducted with 30 students in seventh grade from a public school in Manizales, and it aimed at analyzing the impact of the interactive reading approach by the mediation of web 2.0, reading, and metacognitive strategies such as making predictions, summarizing, and inferring. Additionally, the study stood out as an action research methodology and gathered quantitative and qualitative information from reading tests, classroom observations, and a checklist.

However, the study's theoretical foundations were not about CALLA; it linked metacognition and reading strategies that make part of direct and indirect strategies and CALLA. Hence, it showed the usefulness of implementing the stages of reflecting, monitoring, self-reflecting, and evaluating in an instructional design, as the present study posed at GIMFA TQS students. Likewise, both studies found it convenient to implement action research, quantitative and qualitative data, and online interactive activities to enhance English reading performance. Their population was similar, aged between 11 and 13 years old.

### ***Moodle-Based Worksheets to Enhance Reading Comprehension***

This research was implemented by Castro (2017). It was a master's dissertation for graduating from the Master's Emphasis on English Didactics and applied to undergraduate students from Externado University in Bogota. The study intended to determine Moodle-worksheets' effect on English reading comprehension performance by using reading strategies promotion. It presented an action research design and collected qualitative data from tests, artifacts, and interviews. Then, Castro (2017) found in her study that "virtual learning environments and interactive worksheets enhance English learning performance, and students unconsciously develop reading strategies autonomously, boosting metacognitive strategies" (p. 95).

The study is relevant because it provided the foundations for the current research study. For example, it stood for online worksheets and virtual learning environments (Moodle) as resources and mediators of language learning. Hence, the recent research posed Google Classroom as a virtual learning environment, and interactive live worksheets were the resources for aiding the enhancement of English reading, a proposal like the previous one. Although metacognition and reading strategies were not explicitly mentioned in its title, it is demonstrated that "implementing web 2.0 resources, as MOODLE, foster Metacognition in learners" (Gulbinskienė et al., 2017, p. 183). In this manner, it might result in a valuable proposal to implement at the GIMFA TQS school.

To conclude the state-of-the-art section, it was said that there were studies regarding implementing web 2.0 resources in hand with reading strategies, Metacognition, and CALLA model ground on action research and similar instruments to the present investigation. However, some papers were displayed alongside the section with other research designs but focused on

similar problems, objectives, theories, and instruments feeding the current research foundations; in another sense, the most outstanding papers were from the international context, documents from the national context were more challenging to find, and studies in the school's local area were impossible. For that reason, this research study led to innovative national and local pedagogical practices in English language teaching typical of an action research study, as "a further consequence of action research is to innovate the teaching practices" (Krause & Eilks, 2019, p. 20)

### **Theoretical Framework**

The CALLA model, Metacognition, and web 2.0 resources provide language learning strategies that power English reading comprehension because they incentivize a pleasant and dynamic atmosphere that engages non-native English speakers students in learning this language (Caicedo, 2021). Therefore, the present section displayed some theories and definitions that support the current research outlooks to corroborate its assumptions. Language learning strategies in reading comprehension was the principal analysis unit, bounding its research scope in categories that outlined the present research study.

"Reading comprehension must be assisted instructional, and the first step is to raise students' awareness" (Safadi & Rababah, 2013, p.21). Teachers must help learners by adopting an instructional model with language learning strategies that connect instructions to the student's awareness to enhance English reading comprehension. In this manner, it was convenient to delimit the English teaching to an instructional model that supported suitable strategies for overcoming the students' difficulties in English reading comprehension.



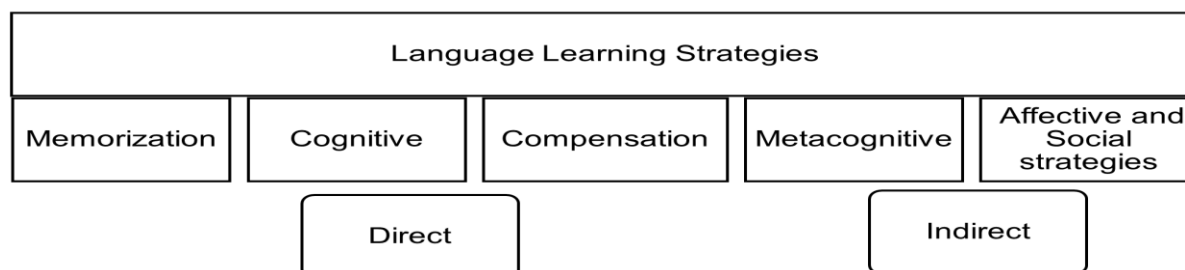
### *Language Learning Strategies*

“Foreign or second language (L2) learning strategies are certain activities, behaviors, procedures, or methods that students employ, frequently purposefully, to advance their understanding of, internalization of, and proficiency with the L2” (Oxford, 1994, p. 3). Many researchers have defined learning strategies throughout history according to their culture, educative background, and intentions (Guapacha et al., 2017). Language learning strategies are based on self-regulating foreign language learning, learners’ strategic knowledge of language learning, and students’ motivation and attitudes (Wenden, 1987, as cited in Lee, 2010). Then, three components link the aspects of language learning behaviors and cognitive and affective assumptions.

Time after, in future research, O’Malley & Chamot (1987, as cited in Lee, 2010) classified language learning into “metacognitive, cognitive and social affective.” Consequently, Oxford (1990, as cited in Guapacha et al., 2017) presented in his taxonomy the direct and indirect strategies with the corresponding sub-division obeying direct and non-direct learners’ mental processing of the target of language. Figure 3 illustrates the language learning strategies according to Oxford (1990)

**Figure 3**

### *Language Learning Strategies*



*Note.* Based on Language Learning Strategies proposed by Oxford (1990)

In this regard, Goh and Foong (1997) said that there are two main language learning strategies: direct and indirect. Direct strategies involve actively processing the target language, while indirect strategies focus on learning it passively without explicitly targeting it. However, it seems that direct and indirect strategies work independently; studies demonstrated that the direct and indirect strategies support each other in language learning, confirming the close relationship between language learning strategies and reading comprehension ( Marzaban and Barati, 2016 ). In this respect, Arismendi et al. (2011) emphasized that language-learning strategies complement reading comprehension since the reader masters metacognition for encompassing his prior knowledge of different reading strategies and regulating according to the reading's purpose. It is inferred that Metacognitive and cognitive strategies in English reading as a second language are inseparable from the reader.

### ***Classic Reading Comprehension and Strategies***

Reading comprehension has always been challenging to define and tackle (Bruder & Henderson, 1985 ). Thus, many psychologists, philosophers, and linguistics have proposed theories and strategies to promote and enhance students' reading comprehension skills. Unfortunately, those strategies have not been enough yet because it continues to be one of the most challenging skills to master for native and foreign learners ( Ngabut, 2015). Therefore, it is necessary to go back to address the different theories alongside history and comprehend some essential underpinnings.

As reading is a complex skill involving inner and outer aspects, psychology has chiefly explained it ( Aldhanhani & Abu-Ayyash, 2020). Then, Psychology appeared in 1879 as an independent discipline thanks to Wilhem Wunt to understand the mental life with human conditions (Wunt, 1879, as cited in Moore, 2013). In this regard, Titchener, in 1982, created

structuralism as an approach that considered the conscious and the subjective mental life. Then, the reading process is a structural, systemic process depending on personal cognitive factors, avoiding the influence of the context (Moreno & Carvajal, 2009). Moore (2013) highlights that functionalism was born to center on the role of consciousness and adaptation, in this case, the influence of context care. As both theories connected themselves, there was a lack of agreement and explanation of the reading comprehension process (Moreno & Carvajal, 2009); it was necessary to adopt other theories.

Pardede (2008) points out that cognitivism and behaviorism were two learning theories that supported reading comprehension in 1950. Watson created behaviorism and postulated the learning process as a group stimulus and response (Nagowah, 2009). The learning was based on observable behaviors in which repetition was the secret of learning; but, in contrast to this theory, cognitivism arose in 1970. Cognitivism focuses more on mental processes like memorization and how the brain organizes information (Al-Jarrah et al., 2019). Nonetheless, reading comprehension is a complex skill that circles sub-skills grounded on behaviorism and cognitivism precepts, the bottom-up or perceptual, and the top-down or cognitive (Harris & Sipay, 1984, as cited in Ngabut, 2015).

The Bottom-up strategies are based on behaviorist foundations. For that reason, reading comprehension is based on observing pictures and the form of the text; language is seen as code, and the reader's role is passive, just decoding symbols (Pardede, 2008). Meanwhile, the top-down strategies obey cognitive principles. Reading is a process of constructing knowledge through vocabulary and graphics (Ngabut, 2015); the reader interacts with his thoughts and the text and adopts an active role. However, Rumelhart pointed out that bottom-up and top-down-strategies interact simultaneously during the reading process. It is called the interactive model or

Schema theory (Rumelhart, 1984, as cited in Pardede, 2008). The reader's prior knowledge plays an important role, and the reading task implies cognitive and behaviorism strategies. Still, no reflection or other action is taken from the reader or learner.

In this view, "reading is difficult for humans since there are too many factors to master, such as skills, vocabulary, strategies, and approaches" (Mena, 2021, p. 7). The fact is that some learners are motivated to learn by reading, but most contemporary students are not; they just read for reading, not for learning. In this sense, reading is the most challenging skill in English or Spanish, although schools teach these skills through complementary strategies. Consequently, Gamboa (2017) supported that "teachers struggle to stress the importance of reading deeply since teachers are mindful of the significance of English reading comprehension in the present and future students' lives" ( p. 175)

In this regard, English reading comprehension is considered a reception process in which two kinds of readers are involved as efficient and effective (Carrell & Devine, 1998, as cited in Gamboa, 2017). Then, both can build meaning with the difference with the second one who keeps building knowledge, implementing strategies, and reflecting during the whole process (Ryle, 1971, as cited in Tharp and Gallimore, 1985 ). Hence, it makes an obligation for teachers to encourage students to be effective readers, which implies mastering different approaches with strategies that make students aware of the importance of English reading so they can self-reflect on the learning process innovatively and playfully.

Additionally, the internet holds much information about many more reading strategies according to the students' ages, classroom sizes, and other aspects. It makes to consider that reading strategies address the reading process to diverse stages to enhance reading comprehension, but it always results in ambiguous what reading strategy is suitable. Thus,

Brown (2007) displayed five valuable reading strategies: "previewing, predicting, skimming and scanning, guessing, and paraphrasing" (p. 126).

The previewing strategy is about having a previous sense of reading through pictures, graphs, and headlines. Predicting strategy makes predictions based on the vocabulary and topic's article. Skimming and scanning strategies look for a general view of the text after a fast reading and confirming meanings or previously predicted ideas. Guessing the text proposes identifying the meanings of the words or expressions using the context and the views from the previous strategies. The paraphrasing strategy makes the readers interpret the text using their own words. For Guapacha et al. (2017), "these strategies are posed for overcoming reading performance, which implies connecting those strategies to an instructional approach for engaging students in the reading process" (110)

### ***Cognitive Academic Language Learning Approach (CALLA)***

As previously presented, this research stated CALLA as one of the innovative approaches to lighten English reading comprehension. CALLA was defined as a flexible approach that allows teachers and students to check prior stages of instruction as often as necessary (Marimuthu et al., 2016). The fathers of CALLA were Chamot and Omalley (1987), who intended that English learners could apply some strategies such as prior knowledge, inferring, and monitoring for language learning. Then, implementing CALLA in language teaching allows teachers to understand learners' necessities in terms of language. For this, it makes it mandatory that teachers are aware of their students' weaknesses and impart valuable strategies in their instructions that students might acquire, inspiring them to boost new ones linked to a reflective process that might check the learning progress.

In accordance, There were proposed five phases: preparation, in which students boost prior knowledge by implementing different familiar strategies; presentation, in which teachers present new content through new strategies; practice, learners adopt the latest strategies and solve new tasks; self - evaluation, here students check their performance, and if it is necessary they consider to adopt other strategies; expansion, students master the strategies and develop more complex tasks; and, assessment teacher evaluates the whole process (Chamot & Omalley 1987). Nevertheless, Nejad and Mahmoodi (2017) emphasized that many research studies revealed that students performed better in CALLA instruction using metacognitive strategies. In this manner, the current study is also grounded on Metacognition foundations.

### ***Metacognition and Strategies in Language Learning***

As formerly addressed, this research establishes Metacognition as a second tool that aids language learning. The father of Metacognition was Flavell, who noticed the importance of regulating one's activities in learning (Flavell, 1979, cited in Anderson, 2002). Since then, researchers have defined it as: "thinking of thinking" Anderson (2002, p. 2); Haque (2008 ) considered it "learning about learning" ( p. 186). Alvarez (2010) called it " an efficient method to teach and learn" (P. 80 ); in accordance, "metacognition is a guide that allows learners to organize their learning, check their progress and reflect on it " (O'Malley & Chamot,1990, p.98). It might be said that metacognition is the primary key in learning since it queries the most suitable learners' tools, contrasting what Jacobs and Paris (1987) found: "Some educators consider that emphasize on reflection, planning, and cognitive strategies will lead to excessive drills on cognitive skills remove from the context of reading" (p. 256).

The previous definitions share ideas linked to knowledge, awareness, and thinking, all connected to metacognition scaffolding. This scaffolding supports the whole procedure, in which

learners must establish objectives, plan, assess, and adjust their learning process to various conditions most effectively. Additionally, three types of metacognitive knowledge are distinguished: "personal, which is about one's knowledge and inferences; tasking presents the factor concerning the tasks; and strategic evokes the dynamism of the strategies while performing the assignment." (Khun, 2000, p. 179).

Furthermore, Jacobs and Paris (1987) considered "declarative, procedural, and conditional knowledge as parts of cognitive knowledge" ( p. 259). In this manner, Merchán ( 2020 ) defined them in the following way: "Declarative knowledge relates to what he/she knows; to know how to perform things is referred to as procedural knowledge; why and when make part of cognition is pointed out as conditional knowledge" ( p. 10 ) In this perspective, "individuals with high declarative, procedural, and conditional knowledge accomplish tasks more naturally and efficiently, having a broader repertoire of methods and successfully sequence tactics." (Forrest- Pressley & Waller, 1989, p. 208).

However, this study was grounded on the five metacognitive components set up by Anderson (2002): "preparing, planning, monitoring, orchestrating and evaluating" ( p. 2). In preparing, learners previously boost their knowledge before beginning the activity; in planning, learners select their best strategies for accomplishing the reading; in monitoring, learners monitor their learning to adjust or change the strategy for learning better; in orchestrating, learners practice diverse strategies to achieve the task; and lastly, evaluating knowledge, where learners self-evaluate and self-reflect about their performance.

Jacobs and Paris ( 1987) postulated that metacognitive strategies aid students in comprehending their learning process. In other words, the metacognitive strategies involve procedures helpful in making students think about their thinking. In this sense, Livingston (

2003) considered learning metacognitive strategies a simple process requiring clear instructions. As a result, teachers may assist students in achieving better academic performance by implementing metacognition knowledge regulated by the students' contexts.

Flavell ( 1979, as cited in Papeleontiou, 2003 ) affirmed that the proposal to encourage Metacognition in learners encompasses several actions to support learners' control of their process. Hence, the present study supported the idea that metacognitive control can help students enhance their performance in various ways. The benefits were better control of reading techniques and understanding of comprehension flaws. As a result, when pupils master reading strategies, problem-solving methods, and task-solving methods, their autonomy and self-regulation increase.

### ***Interactive Tools in English Language Learning***

Since digital technologies have become so popular and have entered the environment of all human activities, they have also transformed the way of teaching and learning. Among these digital technologies is the evolution of the web and its tools, both for work "online" and work "offline," downloading programs or applications from the network. Most of these applications are tools that allow users to interact differently; when these tools have a pedagogical objective, they are used in learning media, and their purpose is that through interaction, the person achieves some knowledge.

In this order of ideas, it was necessary to mention the point of view of some authors on the application of interactive tools in education. Segovia et al. (2016) indicated that "the integration of multimedia elements to the educational process helps to improve the teaching and learning processes, developing multimedia educational resources integrate innovative elements that conceive motivation in students, and thus achieve significant learning" (p. 9). It implies that



interactive tools are practical means for learning more quickly since they increase motivation and interest. In addition, these educational resources can be personalized according to the sought learning. Therefore, "interactive tools allow the generation of content that supports a specific process, such as developing reading comprehension in English of short texts" (Bolaño, 2017, p. 6).

On the other hand, Bolaño (2017) recognized that "the evolution of technology and computing had generated tools that help stimulate the senses and responses of users through their manipulation, which is called interactivity" ( p. 3). However, correctly integrating these tools with different multimedia elements allows the development of meaningful teaching-learning processes to achieve educational objectives.

### **Conceptual Framework**

This section presented some arguments and concepts to clarify the previous theoretical assumptions. Therefore, it was necessary to address first communicative competence and its classification into sub-competences. Then, the reading comprehension proficiency levels and their classifications were presented according to the Common European Framework ( CEFR). Later, it was highlighted some conceptual assumptions relating to ICT resources.

### ***Communicative Competence***

The way we interact with others, verbally or in written form, is considered an innate ability in each individual, and this is developed as we grow; the way we appropriate the language and how we use it in specific sociocultural contexts is what we know as communicative competence. Thereupon, communicative competence is a person's ability to communicate, including knowledge of the language and the ability to use it. "Communicative competence is acquired through social experience and the needs and motivations of the person" (Hymens, 1972,

p. 58 ). Then, the Colombian Ministry of National Education ( 2020) displayed the different communicative competence in guide 22, "Literal, pragmatic and sociolinguistic competencies" (p. 12)

**Literal Competence.** The Colombian Ministry of National Education, in guide 22 (2020), states that literal competence is "all the knowledge and lexical, phonological, and syntactic skills that one has of the language as a system, and the ability of the speaker to use it orally and in writing and understand it" ( p. 11). Likewise, interpret it in any communicative context. Hence, "Linguistic competence allows the processing of information from a symbol system to recognize the phonological, syntactic, or semantic validity in the act of meaning of that language" (Hymens, 1972, p. 54).

**Pragmatic Competence.** It refers to "the practical use of linguistic resources and includes the discursive competence in which sentences are organized and structured to produce coherent fragments of the language and the functional competence that refers to the use of spoken discourse and written texts" ( Colombian Ministry of National Education, 2020, p. 12). Thus, this competence puts into practice the linguistic forms and their functions in real communicative situations, providing relevance to the speaker and allowing the interlocutor to adapt it to the communicative context.

**Sociolinguistic Competence.** The Colombian Ministry of National Education (2020 ) considers this competence as "the knowledge and skills of the speaker to address the social dimension of language use, that is, to know the social and cultural conditions that are implicit in its use." ( p. 12). In this sense, sociolinguistic competence includes the knowledge product of social interaction treatment between different age groups, social groups, or categories. It affects all linguistic communication, even if the participants are unaware. As a result, it is deduced that

the need to know many aspects of the language, such as knowing how to use it within the communicative act, is understood as communicative competence.

### ***Levels of Reading Comprehension***

"The reading process initiates from the reader's previous knowledge, and the level of comprehension increases progressively through practice" (Ardila and Gonzales, 2020, p. 19). In accordance, Zuluaga et al. (2020) posed the different levels of reading comprehension, which are relevant to keep in mind in language teaching and learning: "literal, inferential, and critical" (p. 25). This research considered those levels during the process, though its proposal centered on the literal and critical levels, as Metacognition involves multiple reading levels (Soto et al. 2019).

**Literal or Comprehensive Level.** For Alptekin (2006), this level involves "distinguishing between relevant and secondary information, finding the main idea, identifying cause-effect relationships, following directions, identifying analogies, finding the meaning of words with multiple meanings, mastering the basic vocabulary corresponding to their age" (p. 495). In this regard, learners must identify principal and secondary ideas, understand meanings, and master the basic vocabulary corresponding to their age.

**Inferential Level.** At this level, "readers go beyond the text's literal meaning to understand what it says and is about through knowledge-driven processes such as synthesizing, summarising, generalizing, and extrapolating." (Alptekin, 2006, p. 495). Nevertheless, the reader constantly interacts with the text information, activates previous knowledge, and formulates hypotheses about the content of the text from the indications; these are verified or reformulated while reading. Here, "It makes necessary the teacher's intervention to motivate the

learners to predict results, to infer meanings and foreseeable effects to particular causes, to glimpse the cause of specific impacts” ( Soto et al., 2019, p.7)

***Reading Levels According to the Common European Reference Framework for Languages (CEFR)***

North (2016) defined the Common European Framework of Reference for Languages (CEFR) as a standard that aims to serve as an international measure of the level of oral and written comprehension and expression in a language composed by a scale of six standard reference levels. The division displays three blocks that respond to a more classic division of basic, intermediate, and advanced levels: "A1, A2, B1, B2, C1, C2". (Council of Europe, 2001, p. 38)

In the national context, the Colombian Ministry of Education (2020 ) designed and created the Guia 22, "which sets the basic standards of English language competencies grounded on the CEFR" ( p.6). Then, English teaching in Colombia focuses on students' communicative skills in the level of reading and use of language regarding the Guia 22. Proficiency in English is according to the following levels: A–, A1, A2, B1, and B +, considering there are students below the A1 level in Colombia, which is called A- (Colombian Ministry of Education, 2020, p . 14).

Now, it is briefly explained the corresponding levels contemplated in Colombia. A1 is the lowest level of generative command of the language that can be established. The learner provides basic communication skills and information exchange (Council of Europe, 2001). The student can interact, and asking questions about elementary personal information is expected. The grades first to third must be placed in this level (Colombian Ministry of Education, 202). A 2-level speaker exposes social functions. They can start a conversation with common vocabulary and phrases about the family; they can describe past experiences, usual greetings, places, professions,

and interests. In this level are placed the grades fourth to seventh. It is relevant to highlight that seventh grade must have the A2 + proficiency (Colombian Ministry of Education, 2020, p. 16).

The following proficiency language levels are contemplated in Colombia: B1 and B1+. B1 reflects the intermediate level for speakers. “They demonstrate the ability to interact and be understood in various situations and know how to deal with everyday problems” (Morrow, 2004, p. 77). According to the Colombian Ministry of Education (2020), eighth- and ninth-grade students must perform at this level. B1 + level Corresponds to a high degree of the level, the same main characteristics of the previous level, but speakers are more focused on exchanging amounts of information, and students from tenth and eleventh grades must have this performance in the foreign language. (Colombian Ministry of Education, 2020)

### ***Liveworksheets as Interactive Web 2.0 Resource in Reading Comprehension Skill***

For Mukti et al. ( 2021 ), it is “an interactive platform that permits teachers to create interactive worksheets to encourage students' language skills: speaking, listening, writing, and reading” (p. 128) ). The students' artifacts were developed using this tool. They were focused on reading skills grounded on metacognition assumptions such as “prior knowledge and monitoring” ( Anderson, 2002, p. 2 ) linking reading strategies such as skimming and scanning, and predicting through this tool, learners had the opportunity to interact, saw their own mistakes in a less stressful manner and comprehend what they needed to improve.

### **Rationale of the Research Study on the Literature**

This study demanded finding extra dissertations, articles, and other academic materials to scaffold the methodology to foster English reading comprehension skills. The additional educational material permitted reinforcement metacognition and the CALLA model as a proposal to foster English reading comprehension in GIMFA. It supported the corresponding

methodology, data procedure, interpretation of the results, and validation. In this manner, the presented research study took the necessary theoretical foundations.

## Research Design

### Introduction to Research Design

The present chapter depicts the methodology and different instruments implemented by the researcher to collect and treat data for analyzing the findings presented in the next chapter. Sharma (2022) considered that the instruments obeyed primary data since they obtained it directly from the implied people in the research study; they were classroom participant observation, field notes, and students' artifacts designed and validated before implementation.

The same researcher teacher conducted the participant observation during the class implementation, focused on facts, and evaluated them (Searle, 1993). The field notes were registered to what was observed, and they were characterized by the two sections of teacher's actions and students' actions since it was convenient to analyze the effects on learners that had the teacher's actions based on CALLA instructions. The students' artifacts were designed using web 2.0 resources in which students started mastering some reading strategies to foster their English reading comprehension performance and metacognition.

Hence, it is underlined that this study fits a qualitative research method and action research approach considering the rural context and the size of the population, the research aims, and the researcher's intervention alongside the research process; as Burns (2009) addressed, "Action is placed in a particular social group, and Research is based on the actions 'observations to analyze the outcomes'" (p. 289). Moreover, this chapter addresses the sample population and its characteristics, ethical protocols, and the different procedures to validate, gather, and analyze data.

## **Methodological Design**

### ***Research Method***

The research study was grounded on qualitative methodology foundations since it tends to analyze attitudes demonstrated during the implementation of the lessons, and qualitative methodology implies being flexible; as Ngulube (2015) highlighted, “Qualitative method is sufficiently adaptable to allow changes during data collection” ( p. 4). Likewise, the teacher was the principal observer of the class, which is common in action research studies: “In AR studies, the researcher takes place in own study” (Burns, 2009, p. 291). The teacher focused on comprehending people's behaviors, assuming the role of qualitative investigators, centered on what people have constructed through their senses and world experiences (Bryman & Burgess, 2002). In that sense, the researcher analyzed his instructions as a teacher and described how those issues could affect students ‘progress, affecting language comprehension. Additionally, the students provided new strategies to foster their reading and English learning process during the execution of this research.

### ***Research Approach***

This study was grounded on action research approach foundations since Searle ( 1993) considered “ AR provides teachers the opportunity to assess teaching purposes and practices” ( p. 3). Thus, the action research approach was more applicable to teachers' everyday issues than to hypothetical assumptions found by innate scholars in the sense of a discipline of knowledge; in this set, certain aspects are suitable for carrying out the investigation.

Furthermore, “observation and reflection play an important role in AR” ( Kemmis et al ., 2014, p. 19 ). Hence, this research gazed at the CALLA instructional model from the teacher’s role and the metacognitive development as effects of those instructions on learners; then, it was



demanded to plan, observe, implement, apply, and change or modify. In this sense, the current study stood out from the action research cycles supported by many researchers, such as Burns (2009) and Kemmis et al. (2014).

**Action Research Cycles.** The action research has five phases: first, an action plan about the problem and the diagnosis; second, the action that consists of the schedule, literature on how to improve the situation in practice, evidence, and description of the action; third, observation and overcoming of the action; and fourth data analysis, abstraction, and theorization. (Kemmis et al., 2014) . It is demonstrated that Action research strives to change attitudes and behaviors, encouraging active learning in creating information and facilitating individual growth in cognitive areas. It also promotes knowledge acquisition and personal skills development, such as observing and analyzing. (Burns, 2009). Consequently, action research in the classroom will quickly find solutions to problem situations that arise in different contexts from teaching and learning.

## **Context of the Research**

### ***Population and Sampling Procedures***

The current research targeted students from the sixth course at GIMFA TQS School, a military educative institution inside a Colombian Aerospace Force base surrounded by the Colombian Amazonia jungle. Eight students composed the sample population, six boys and two girls aged 10 to 12 years old, and all are inhabitants of the military unit in the base as all base staff. Therefore, the students' plans relate to military life or planes, such as pilots and aeronautical engineering. The present study selected this population since they demonstrated difficulties in English reading comprehension and a lack of reading strategies implementation in their language learning process. Likewise, this group of students likes to participate.

This study employed a non-probability control group suitable for the size of the study's population and its qualitative approach. Furthermore, the sampling method was convenience sampling since it was a small population, and most were available to participate in the study ( Tahedoorst, 2016 ). Using this sampling method, it was possible to easily select the population as they were a small group willing to work on the implementation.

### ***Researcher's Impact***

During the complete research study, the teacher-researcher assumed the role of an agent of change in practices and pedagogical settings, own of a researcher ( Arteaga, 2009). The researcher broke traditional trends in an airtight environment into contemporary practices that significantly impact the community since students, parents, and other teachers noticed the students' improvements and motivation in English class. As the study was based on the CALLA instructions model and metacognitive strategies as effect on learners mediated by web 2.0 and technology resources, the participants developed reflection and awareness of their language learning process, favoring educational change through intervention proposals that start from the actual context of the participants, proposing goals that can be integrated into the immediate environment (Fernandez & Salvador, 2013).

### ***Ethical Protocol***

Bassey and Owan (2019) defined ethical protocols as “issues that are about all the ethical principles necessary for making a moral and trustworthy design and development of a research project” (p. 1288); in this sense “integrity, honesty, truthfulness, and privacy as ethical principles in research” (Nicholls, 2021 p. 265). Then, implementing any proposal, it is mandatory to get the necessary permissions and consent to protect the adolescent's identification and the information obtained in this process and, thus, protect the research legally. Therefore, the parents

or guardians authorized their children's participation through a consent document in this research (Appendix A).

Regarding values and ethical standards, integrity is essential because it creates trust, confidence, and credibility in the research process. Honesty provides the quality of truthfulness to the research results. It means that the results and the analysis are trustworthy and the findings are meaningful. In this manner, this research process has carried out an honest study, avoiding plagiarism and falsification.

### **Data Collection Techniques**

It was required to consider prior observations and official test outcomes to establish the needs of the current research study. The study gathered the data by conducting participant observation during the sessions; the field notes were divided into teacher and learner's sections to analyze and assess the CALLA instructions' effects on learners and student artifacts as media technological media to encourage students to read and master reading strategies. The artifacts' implementation phases were also registered on the field notes.

Three phases made part of the collecting data procedures corresponding to the three lesson plans having a sequential process allowing the teacher researcher to fix or re-address issues. As each lesson plan was implemented, the impressions were described in the field notes to have the analysis and reflect on it later. After applying the lesson plans and the corresponding analysis of the field notes, the data were organized, triangulated, categorized, and analyzed. The data were set according to theoretical foundations focused on the CALLA instructional model "teacher's role" and metacognitive strategies "students' role." Thus, the collected data were triangulated and categorized (see Chapter 4) as "triangulation allows to understand phenomena" (Denzin (1989 as cited in Fusch et al., 2018, p. 20)

### ***Description and Rationale of the Instruments***

To ensure the validity and importance of the current study. Data from the real context was required as “the action research approach demands qualitative instruments such as participant observation, field notes, and students’ artifacts” (Gamboa, 2017, p. 167). Thus, this section sets the corresponding instruments implemented for gathering the data, bearing in mind the aims of this research. The data collection instruments included lesson plans, field notes, and students’ artifacts. After triangulating, these instruments were analyzed into the teacher and learner’s roles to comprehend the CALLA effects on learners' learning process.

In this context, the data were analyzed using the interpretive method, as the attitudes of students and teachers must be interpreted in the light of the CALLA model and metacognition theories. Action research works well with this method (Burns, 2010). Hence, the interpretive method allowed the researcher to interpret and analyze all the effects and performances of the research participants. This analysis was displayed in the field notes based on what was proposed in the lesson plans and the development of the students ‘artifacts.

**Field Notes and Lesson Plans ( Participant Observation).** Kemis et al. (2014) described field notes as “explanations of activities in the study context written in a fairly realistic and analytical manner, with an emphasis on teachers' and students' dialogue and interactions with one another.” (p. 108). It is taken before, while, or after class, depending on how the class progresses. Thence, this instrument helps display, describe, interpret, and analyze circumstances (Appendix B)

In the current study, the field notes played an essential role because they allowed the teacher, who was the researcher and observer of distinctive aspects from an action research study, to describe the facts presented in all the interventions and then, with the aid of other

instruments, it was likely to analyze and interpret the information. Another goodness of this instrument depicted the diversity of variables that have influenced the performance of the class, including teacher and student attitudes, responses, and time to reflect on the activities. In that manner, the researcher carried out field notes during the implementation of each lesson plan (Appendix C ). It was organized into two sections, the teacher's role and the students' role, and sub-divided into five different stages proposed by the congruence between metacognition and CALLA foundations: "Preparation, presentation, practice, assessment, and reflection, expansion" (Guapacha et al., 2017, p. 105).

**Liveworksheet.com Artifacts.** In research, artifacts allude to systematic mechanisms that validate the research (Calderon, 2015 ). In congruence, the media artifacts dynamize the learning process, demonstrating that their use affects the learners' achievements (Agostino, 1999). Nonetheless, some studies consider them a simple help, but it has been shown that implementing media artifacts implicitly promotes learning, transcending beyond practice (Espinoza, 2008). This research implemented three artifacts designed using LIVEWORKSHEET.COM as this technological tool allows proposing online interactive activities. The LIVEWORKSHEET.COM artifacts were about three Colombian cities and regions, Bogotá, Cartagena, and Amazonia region, and they were grounded on metacognitive strategies; the activities were fixed according to the student's performance ( Appendix D)

### **Validation Procedures**

The validation procedures of instruments refer to the steps to achieve reliability and guarantee truthful results concerning the research aims (Hernández & Barrera, 2018). Hence, the designing and validation procedures of the three instruments from the current research assured an honest protocol grounded on conceptual referents "first phase: theory and research aims, second

phase: expert's approval, third phase piloting, and fourth phase consolidate data" ( Soriano, 2015, p. 25). In this regard, it was necessary to find literature about validation procedures and select the best according to the research; they were designed and presented to the tutor; they were given to the students and fixed in each session, and finally, the data were consolidated and directly set in a word document.

### **Pedagogical Intervention and Application**

According to the problem addressed in 6th-grade students from GIMFA TQS school, the main research goal was to explain how metacognitive strategies, the CALLA model supported by web 2.0 resources contribute to fostering English reading comprehension of 6th-grade students from Gimnasio Militar Fuerza Area Colombiana TQS (GIMFA TQS), bearing in mind that students liked reading neither English nor Spanish since they did not have an awareness of reading strategies use.

Consequently, the pedagogical action implemented three lesson plans: Knowing Bogota, Cartagena, and Amazon region. CALLA model instruction, metacognitive strategies boosting, and liveworksheets as a web 2.0 resource mediated the application. The syllabus content of the fourth term at school was about vacations and tourist places; then, it was convenient to present Colombia and its tourism as a topic of this implementation to follow the institution's guidelines. Therefore, the three artifacts took the readings from the Colombia travel website because students had worked with it previously and its reliable information.

The pedagogical proposal was to foster English reading comprehension by implementing and analyzing the effects of mastering the three instructional lesson plans grounded on metacognitive strategies and CALLA instructions on students' reading comprehension performance. Hence, the analysis undertook two perspectives: the teacher's role in promoting

metacognition in students and the student's role in noticing the metacognition development alongside implementing these three artifacts and the instructions. The implementation was in the system's room from the institution, furthering face-to-face and virtual interactions.

In this regard, students worked on each artifact three hours per week, and the implementation stage lasted three weeks or nine hours as it was three artifacts. The teacher-researcher assumed an active role as he prepared the students, presented the artifacts by introducing their topics using the video beam, encouraged students to practice the strategies, and led the reflection. In this manner, the teacher mastered CALLA instructions to stir students to solve problems through metacognitive awareness development. In this sense, Figure 4 demonstrates a class model during the implementation.

#### **Figure 4**

##### *Students Solving Artifacts*



*Note.* The implementation took place in the computer room from the school.

Regarding the liveworksheets artifacts, figure 5 evidences Bogota's artifact. The artifact's vocabulary and tasks were initially complex for students as it was the first design. Something

remarkable was the students' curiosity and obedience in following the teacher's instructions. It is relevant to mention that each artifact was improved according to the concerns presented during the previous implementation, being a flexible implementation at any moment.

## Figure 5

### *Bogotá's Artifact Sample*



**Bogotá**, as a city for all, offers many different activities that make it an ideal tourist destination. One of these activities is discovering Colombia's history and its importance. To learn more about Colombia's history, you can go downtown, where you will find the **Plaza de Bolívar**, the **Primatial Cathedral**, and the **Casa de Nariño**, which houses the Colombian government.

You can also visit touristic places like the **neighborhood of La Candelaria**, the heart and historical epicenter of **Bogotá**. There you will find great mansions built in the colonial

### 1. BOOSTING PRIOR KNOWLEDGE

#### 1.1 Preview (Before reading – antes de leer)

Look the pictures and skim the title of the article and do (*Mira las imágenes y échale un vistazo al título y desarrolla*)

a. Select 5 words or ideas relating to the pictures and title. (*Selecciona 5 palabras o ideas relacionadas con las imágenes y el título*)

1.	<input type="text"/>	3.	<input type="text"/>	5.	<input type="text"/>
2.	<input type="text"/>	4.	<input type="text"/>		

b. List 3 things that you know about Bogota (*Enumere tres cosas que sepas de Bogota*)

1.	<input type="text"/>
----	----------------------

*Note.* Boosting prior knowledge section from Knowing Bogotá's artifact.

Figure 6 shows the next artifact, named Cartagena, as it was a different place; the tasks were fixed considering the previous students' difficulties. In this artifact, students followed the teacher's instructions but became more committed to developing the tasks.



Figure 6

*Cartagena's Artifact Sample*

## 1. BOOSTING PRIOR KNOWLEDGE

### 1.1 Preview (Before reading – antes de leer)

- a. Scan the entire article before reading it and think about what you already know about the reading's topic. Select the words that correspond to the topic.

*(échale un vistazo al artículo e imágenes antes de leerlo y piensa acerca de lo que ya conoces del tema . Selecciona las palabras que corresponden con el tema de la lectura )*

Vacations <input type="checkbox"/>	Traffic <input type="checkbox"/>
Trips <input type="checkbox"/>	History <input type="checkbox"/>
Job <input type="checkbox"/>	Tourism <input type="checkbox"/>
Sea <input type="checkbox"/>	Study <input type="checkbox"/>

*Note.* Boosting prior knowledge section from Cartagena's artifact.

Figure 7 evidences the Amazon region's artifact. Students knew what to do at this point and worked on it autonomously, even though the teacher gave some instructions. It was interesting to see the student's performance in appropriating the different reading strategies because asking the teacher for a strategy was unnecessary. Students applied them by themselves.

**Figure 7***Amazon's Artifact***1. BOOSTING PRIOR KNOWLEDGE****1.1 Preview ( Before reading – antes de leer)**

1. Look at the pictures and skim the article "Not read" it and think about the topic. Drag the words to where you consider they are (Mira las imágenes y el artículo rápidamente "No leerlo "solo ojéalo" y piensa sobre el tema. Arrastra las palabras donde correspondan)



- It is called the lungs of the Earth: \_\_\_\_\_
  - The Amazon region has much diversity of \_\_\_\_\_
  - It is the river of this region \_\_\_\_\_
  - The Amazon River is the \_\_\_\_\_ of the world
- Note.* Boosting prior knowledge From Amazonas' artifact.

## **Data Analysis and Findings**

### **Introduction to Data Analysis and Findings**

The following chapter addresses the discussion of qualitative gathered data outcomes since they allow interpreting and reflecting the participants' behaviors (Yates & Leggett, 201). Then, Qualitative data were considered the most appropriate methodology for the present Action research study as they imply "Knowledge of process, outcome and change" ( Ngulube, 2015, p. 4). Therefore, the three instruments needed to obtain the data were three lesson plans with their corresponding field notes and students' artifacts. They were thoroughly analyzed to depict the results, classify them aligned to the research aims, and present the conclusions in the next chapter.

### **Data Management Procedures**

Before starting this study, it was necessary to have the commander's approval from the base, the permission of the school's principal, and meet with the parents to share the problem, the objectives, and the scope of the study. Concerning the research's aims, it sought to gather and analyze the teacher's actions and their effects on learners' English reading performance mediated by Web 2.0 resources. Therefore, the researcher qualitatively analyzed the teacher actions' impact on learners' performance by implementing qualitative instruments such as lesson plans, field notes, and student artifacts since qualitative instruments focus on analyzing and interpreting the research participants' actions (Ngulube, 2015).

The information was set using the word program as the field notes and lesson plans were designed in this program. Afterward, the teacher researcher took screenshots from these instruments and executed the corresponding analysis and interpreting the students' attitudes demonstrated alongside the implementation, having the necessity to triangulate the information

from these three instruments to later display into the categories as “triangulation is fundamental in category identification qualitative data analysis” Williamson et al. (2013 as cited in Ngulube, 2015, p. 6).

Therefore, the teacher researcher used a descriptive analysis approach to find patterns and connections between the teacher’s actions’ effects and students’ attitudes. In this regard, Garcia et al. (1994) cited the following stages to guide the qualitative data collection process: “A common analytical process for studies that use qualitative data can be established through a series of tasks or operations. These include reduction, disposition, transformation, and obtaining results and verifying conclusions.” (p. 188)

### **Categories**

Category can describe various things, including contexts, situations, instructions, behaviors, viewpoints on a subject, approaches, and processes (Yilmaz, 2013). Then, the present section addresses the categories to analyze CALLA instruction and metacognition's influence on English reading comprehension performance. Therefore, Marimuthu et al. (2016) concluded that “students from teachers who conduct CALLA instruction could lead better performance in reading comprehension as they develop metacognition awareness” (p. 90).

Then, it is understood that CALLA instruction makes part of the teaching strategy category, which is centered on the teacher role; meanwhile, metacognition integrates the learning strategy category, which is focused on the student’s role alongside the reading comprehension process. These categories are placed in Table No. 1 after analyzing the qualitative data obtained from the three lesson plans and field notes.

**Table 1***Qualitative Categories*

Research question	How to foster the English reading comprehension performance in 6th-grade students from Gimnasio Militar Fuerza Aeroespacial Colombiana TQS by implementing metacognitive strategies and the CALLA model linked to web 2.0?	
Categories	Teaching strategy	Learning strategy

*Note.* Own authorship

*Discussion of Categories*

**Teaching Strategy.** The first category to be discussed is teaching strategy. The analysis was based on the teacher's role, and attitudes displayed descriptively and reflectively on the field notes. Consequently, part of the analysis was centered on the section on teacher's actions, as field notes encourage reflection on interactions between teachers and students ( Hossein, 2020 ). It is valuable to clarify that the field notes had two sections: the teacher's and student's roles. For analyzing this category, it was necessary to focus on the first section: the teacher's role.

Moreover, the notes were registered after applying each lesson plan, where the teacher assumed an active mediation role between instructions and knowledge. Concerning the teacher's actions during the implementation, it was evidenced that implementing new teaching strategies based on interactions and instructions promotes better student reading performance as they innovate the learning process; in this case, the reading comprehension performance was fostered. As a result, teachers' instructions lead to more reflective and meaningful teaching practices (Nejad & Mahmoodi, 2015).

Notwithstanding, the teachers' instructions are centered on CALLA instruction and its five phases or stages: "CALLA is a recursive model that also provides flexibility and assists

teachers and students according to its instructional phases” Chamot (2004, as cited in Marimuthu et al. 2016, p. 71). Hence, this category and its phases with its criteria, “preparation, presentation, practice, self-evaluation, and expansion” Chamot, (2009 as cited in Guapacha et al. 2017, p. 105) are set in Table No. 2

**Table 2**

*Categories in Teaching Strategy*

Category	Phase	Criteria
Teaching Strategy (CALLA)	Preparation	Questions and brainstorming about the topic to boost prior knowledge.
	Presentation	Use resources web 2.0 to introduce and model new reading strategies.
	Practice	Reminders to use and look for adequate reading strategies/ Feedback.
	Self-Evaluation /Reflection	Assess reading strategies by questions and corrections and reflect on performance.
	Expansion	New tasks to implement strategies and expand knowledge.

*Note.* Designed based on strategies CALLA instructional model proposed by Chamot ( 2009)

**Preparation.** The teacher always sought to boost the student’s prior knowledge, a fundamental action to activate learners to learn (Nejad & Masoud, 2017). Figure 8 evidences that the teacher opted to make previous questions relating to the topic, and the answers helped make

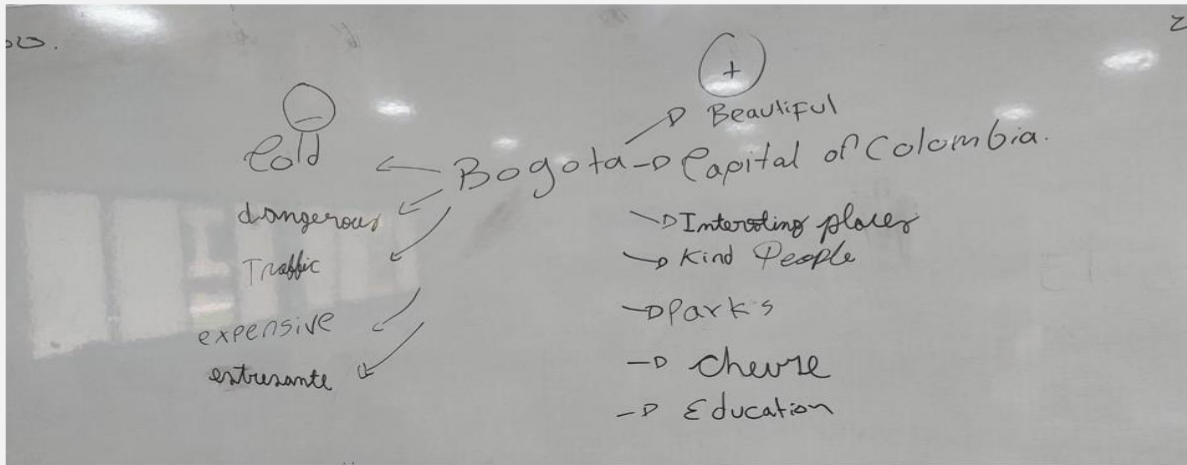
up a mind map. In this manner, students boosted their prior knowledge and gained new vocabulary by providing answers and main ideas. This subcategory is featured by the positive effects of giving previous instructions to learners before starting a reading comprehension task; furthermore, Guapacha et al. (2017) outstand that when teachers promote instructions to boost prior knowledge in the preparation stage make, students are involved in the target of the language.

### Figure 8

#### *Teacher's Actions During the Preparation Phase*

##### **What did I do? (teacher)**

I started the class by writing and presenting the objectives. Afterward, I posed questions about Bogota to boost their prior knowledge and promote the students' group participation through a short debate. The questions were oral, "what do you know about Bogota?, What is the thing you like the most about it? And why?". Simultaneously, I guided the brainstorming about this city; It was developed on the board in the preparation stage. Something remarkable, it was that students were interested in continuing participating by giving more words and they were more curious.



*Note:* Brainstorming on the board created by the students

However, Gurses and Adiguzel (2013) state that "the teacher's instructions in the preparation stage must be clear, relating to the topic and center on the students 'needs in the language starting from basic ideas or vocabulary towards the unknown or more difficult ones" (p. 65). Then, mastering prior knowledge strategies implies the teacher's reflection on his

student's needs and later, "learners could reflect on their own need propitiating the metacognition awareness" (Nejad & Masoud, 2017, p. 140); but first, the teacher must gain his students' confidence in knowing their interests, origins, and necessities. Then, the teacher can design and conduct instructions meaningful for their learning process.

**Presentation.** The teacher's instructions aimed to raise the students' awareness of reading strategies they already know and guide them toward the new ones (Gurses & Adiguzel, 2013, p. 58). Then, Pardo (2013), cited in Camargo (2018), supports that the teacher provided strategies with students using technology and Web 2.0 resources as technology dynamizes any teaching and learning process. The instructions were more significant thanks to technology, and it aroused students' curiosity and interest; nevertheless, the teacher had to adopt an active role of motivator and supporter at any moment of the implementation, as Figure 9 demonstrates.

### Figure 9

#### *Teacher's Actions During the Presentation Stage*

I continued with the Presentation stage. I logged on to live worksheets websites and socialized the Knowing Bogota artifact and its section. I solved some questions as students were curious and interested. Then, I accompanied the first section of the development of the artifact, motivating active reading by providing them with different reading strategies such as looking at the pictures and deducing topics, skimming, and scanning.

*Note.* Teacher's descriptions from the presentation stage.

In addition, the artifacts had sections to boost students' prior knowledge. They are encouraged to use other reading strategies with instructions and guidance from the teacher since "the Presentation stage in CALLA, the teacher needs to introduce and model reading strategies" (Guapacha et al., 2017, p. 105) shown in Figure 10. Then, this stage is vital in the category



because the teacher demonstrates to the students how to boost prior knowledge and model reading strategies as fundamental in improving learning performance.

## Figure 10

### *Teacher's Actions During the Presentation Section*

## 1. BOOSTING PRIOR KNOWLEDGE

### 1.1 Preview (Before reading - antes de leer)

Look the pictures and skim the title of the article and do (*Mira las imágenes y échale un vistazo al título y desarrolla*)

a. Select 5 words or ideas relating to the pictures and title. (*Selecciona 5 palabras o ideas relacionadas con las imágenes y el título*)

1.	<input type="text"/>	3.	<input type="text"/>	5.	<input type="text"/>
2.	<input type="text"/>	4.	<input type="text"/>		

b. List 3 things that you know about Bogota (*Enumere tres cosas que sepas de Bogota*)

1.	<input type="text"/>
----	----------------------

*Note.* Boosting prior knowledge section from Bogota's artifact

**Practice.** “The practice stage implies instructional strategies aimed to implement different reading strategies to solve the reading task” Chamot (2004, as cited in Marimuthu et al., 2016, p. 71). It implies that the teacher gave students different strategies that sought cooperation and orchestrated different reading strategies by themselves while they accomplished the task.

Nonetheless, the teacher accompanied the process, making the necessary corrections and providing feedback on the section. At this point, the interaction between the teacher and students was strengthened, creating a more effective learning process. Figure 11 demonstrates these assumptions.

### Figure 11

#### *Bogota's Artifact Presentation Stage*

Later, I presented the Practice stage. Here, I socialized the second part of the artifact; I encouraged students to monitor their reading process by questions like *Was the message clear? What did I not understand? How to understand it?*; I motivated students about how to solve the lack of understanding in the text by reading strategies like find its synonym.

Find one synonym for each word (*Encuentra un sinónimo para cada palabra*)

1. Village	<input type="text"/>
2. Mansions	<input type="text"/>
3. Cuisine	<input type="text"/>
4. Dishes	<input type="text"/>
5. Destinations	<input type="text"/>

 LIVEWORKSHEETS

*Note.* Finding synonyms as reading strategy

**Self-Evaluation / Reflection.** This stage provides opportunities for self-assess and reflection on their performance after implementation (Caicedo, 2021, p. 17). Thus, the teacher inspired students to self-assess and reflect through questions intended to have extra features of the topics seen. Another strategy to promote reflection on students was their blogs, in which they

posed some thoughts, opinions, and reviews at the end of the three implementations. Figure 12 presents teachers' attitudes toward encouraging students' reflection and evaluation.

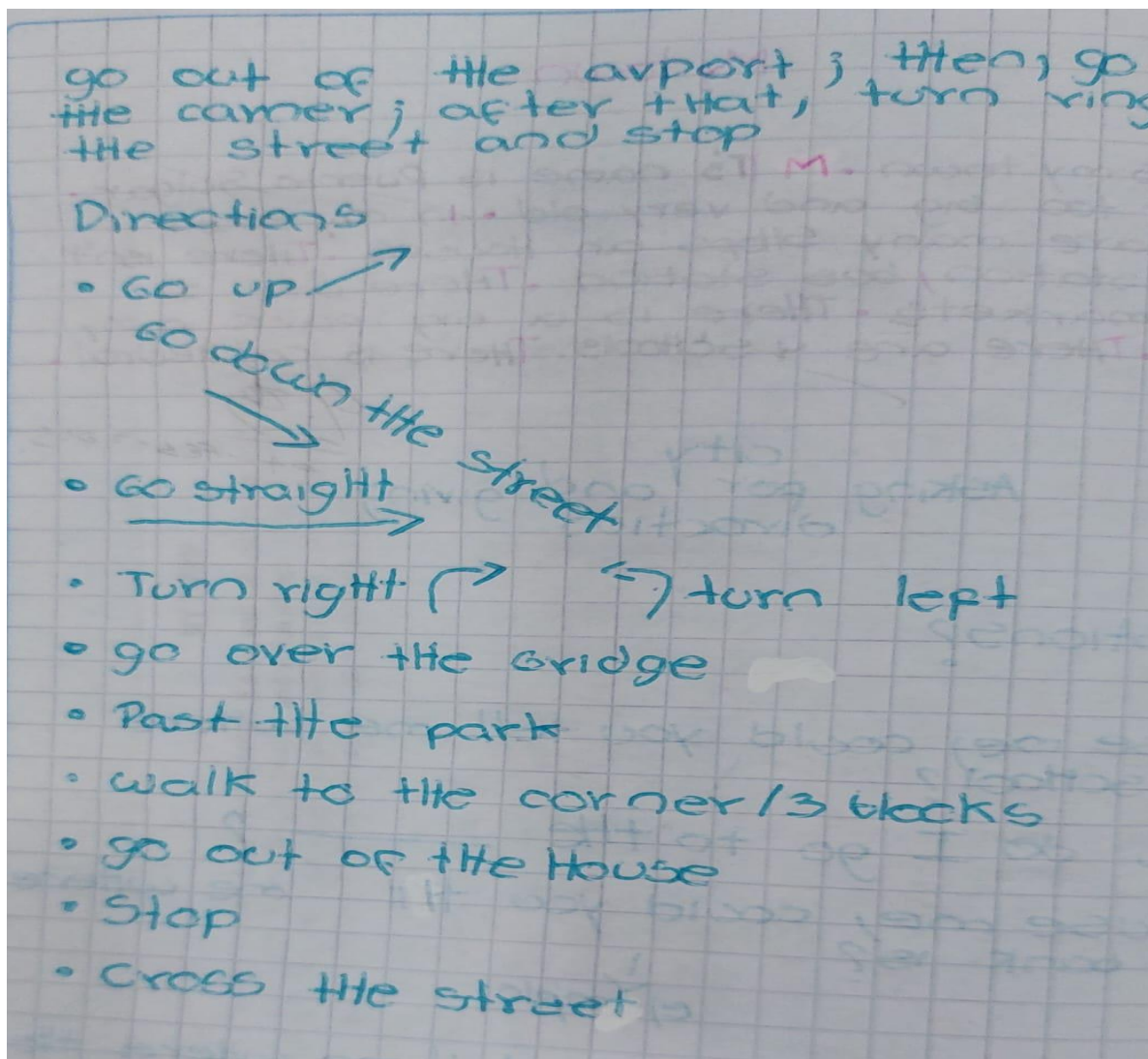
### **Figure 12**

#### *Teacher's Actions During the Self-Evaluation Stage*

During the assessment and reflection stage, I inspired students to participate in expressing places and features from Bogota. I made some corrections and helped students with some ideas. I had the opportunity to revise prepositions of place and the city's vocabulary; it was an excellent opportunity to link the topics from the school curriculum and the artifact

*Note.* Descriptive and reflective notes

The present stage of the teacher's instructions category is vital for any language target goal since it boosts reading, grammar, or vocabulary. In a particular case, the teacher had the opportunity to revise the prepositions of place and the city's vocabulary; it was necessary to review those topics because most students presented doubts when expressing their reflections or when they wanted to provide opinions. In this manner, the teacher must make his pedagogical practice, and the CALLA instruction aids in this purpose. Figure 13 demonstrates the explanation of grammar and vocabulary.

**Figure 13***Topic Explanation*

Notes. Notes from a student's notebook about explanation of directions

**Expansion.** Puerto (2020) outstands that this last stage of the category “deals with the application of the information into the learners ‘lives and make a connection to their contexts’” (p. 64); for this purpose, the teacher needs to master instructions that encourage students to connect the content learned with his students’ reality. However, most students, at this point, can use strategies independently in new tasks. The teacher asked the students for extra tasks to expand their knowledge, applying the strategies they learned from each session. Then, Figure 14

summarizes the different tasks to expand learners' knowledge in the three field notes corresponding to the three artifacts' implementation.

### **Figure 14**

#### *Teacher's Actions During Expansion Sections*

The assessment, reflection, and expansion stages were worked on in the blog. Then, the teacher guided the blog creation process; however, some students understood how to create it. The teacher provided instructions to decorate the blog as they wanted and wrote about what was learned during the implementation of the artifacts and the instructions to self-assess and reflect on their learning process. It was essential to highlight that just 6 students out of 8 accomplished this task because the others traveled with their families during this process. *Students 001, 002 004, 005, 006, and 007* were the students who participated in the entire implementation.

Finally, I encouraged students to expand their knowledge by reading extra information about Cartagena and applying the reading strategies learned.

Finally, I encouraged students to expand their knowledge by writing a short report about their hometown. At this point, students connected the artifact's topic with the city's vocabulary to write about their hometowns, expanding their knowledge and putting it into practice. They were really motivated.

*Note.*Expansion sections displayed by the teacher-researcher

**Learning Strategy.** It is the second category to be discussed. This category focuses on the learners' role, as previously addressed in the chapter. Then, the analysis was grounded on the second section of the field notes. Notes from students' notebooks, data from students' personal blogs, and their attitudes were paramount for the present analysis of this second category as the primary evidence of students' performance and evolution during the implementation of each session, bearing in mind that notebooks and portfolios are instruments that corroborate the appropriation and master the strategies mediated during the sessions (Guapacha et al., 201).

Relating the students' attitudes during the sessions where the teacher mastered CALLA instruction, it is outstanding that students took ownership of their learning process, having a more autonomous and reflective role in impacting their reading comprehension performance, as Caicedo (2021) concluded in his research "CALLA and Metacognition make students feel more independent and in charge of their learning process, which boosts motivation and improves academic performance." (p. 33) In this way, it is understood that CALLA instruction encourages students' metacognition development.

In this respect, the learning strategy is centered on Metacognitive strategies, the students' attitudes towards accomplishing the reading tasks posed in the sessions. "Metacognitive strategies direct the language learning tasks and involve thinking about the learning process" Vandergrift (2002, cited in Marimuthu et al., 2016, p. 65). Therefore, this category, with its phases and criteria, "preparing and planning for learning, selecting and using strategies, monitoring strategy, orchestrating various strategies, evaluating strategy use and learning" (Anderson, 2002, p. 2).

However, displaying this category, its phases, and the criteria previously addressed in Table No. 3 for the corresponding analysis and discussion was considered significant.

**Table 3**

*Categories in Learning Strategy*

Category	Phase	Criteria
Learning strategy (Metacognitive strategies)	Preparing and planning for learning	Preparation and boosting of prior knowledge.
	Selecting and using strategies	Different and new reading strategies mediated by web 2.0.
	Monitoring strategy	Interaction for monitoring strategies.
	Orchestrating	Coordination of different strategies
	Evaluating strategy	Evaluation and reflection on learning performance

*Note.* Designed based on learning strategies under the model of Anderson (Anderson, 2002)

**Preparing and Planning for Learning.** Essential skills that enhance the student's learning process look to activate the learners' prior knowledge (Anderson, 2002), and what learners did during the preparation and planning for learning was to boost their prior knowledge through the questions posed by the teacher as it was addressed in the first category. Figure 15 provides evidence of this. In concordance, Guapacha et al. (2017) addressed, in their study, the

effect that the preparation phase in CALLA encourages the preparing and planning for learning in metacognitive strategy ( p. 105). Therefore, the students started developing metacognitive strategies unconsciously.

### Figure 15

*Students' Actions During the Preparing and Planning Phase*

#### What did students do?

In the preparation stage, students sit on the floor and answer orally the questions posed by the teacher, some of them answered in English, and others mixed both languages ( English and Spanish ) as they do not have the same proficiency in the language. Most importantly, students boosted their prior knowledge and reminded vocabulary, and others memorized that new vocabulary related to the topic; they participated dynamically and were motivated in the brainstorming construction.

*Note.* The first stage and section from the field notes centered on students' behaviours

**Selecting and Using Strategies.** Oxford (1990 cited in Anderson, 2002 ) emphasized that readers must know how to use reading strategies. Then, the present phase looks at choosing and using the best strategies for the task (Anderson, 2002, p. 3). Students applied different reading strategies like scanning and skimming, inferring meanings by the contexts, and tried translating into Spanish using it as a learning strategy to compensate for the lack of knowledge; as Goh and Foong (1997) point out, “compensation allows learners to fill in gaps in their learning by guessing the meaning or translating it into their native language “ ( p. 42).

Figure 16 shows how well the CALLA teaching model and metacognitive skills complement one another because CALLA is a recursive model that helps students select and employ effective learning strategies (Marimuthu et al., 2016, p. 72).



## Figure 16

### *Students Actions During the Selecting and Using Phase*

Students knew the Cartagena artifact. They did not ask many questions, but they had an eager attitude, they were curious about what was next. After learners had the opportunity to read the text twice, fastly and slowly, but first, they already knew the necessity to look at the pictures and infer meanings and topics. Here the students intended to translate again.

*Note.* The second section of the field notes from Cartagena's artifact implementation

**Monitoring Strategy.** In this phase, while implementing the three lesson plans, learners interact with themselves and become more independent and focused on the reading task.

Anderson (2002) recognized that in monitoring strategy, “learners need to ask themselves to check and change reading strategies” ( p. 7 ). Figure 17 demonstrates the interaction and attitudes that learners presented in this phase. Furthermore, it is significant to highlight that CALLA also complimented the present metacognitive phase since it involves the learners’

## Figure 17

### *Students' Actions During Monitoring Phase*

In the practice stage and monitoring , students aimed to ask and answer themselves for meanings; it was interesting to see how students interacted with themselves to guess meanings, mostly translated, but others tried to follow the teacher's instructions. In this stage, students mastered conscious and unconscious reading strategies.

*Note.* The third section of the field notes from Bogota's artifact

**Orchestrating.** Anderson (2002) considers it an “ important metacognitive strategy that organizes and makes among different strategies to understand the words” ( p. 4). In this case, students used translation at any time to understand and to give their impressions about the activity. Figure 18 presents it. In this sense, translation became one of the different strategies orchestrated during the implementation since it intends to make understandable what is read,

compensating for the lack of knowledge of the students; translation results in a bridge of knowledge transmission ( Ajideh et al ., 2018, p. 81).

## Figure 18

### *Students' Actions During Orchestrating Phase*

Students revised vocabulary of the city and prepositions of place as grammar topics found in the reading. They got clear on the topic and practiced with some exercises connecting the content of the artifact. Students reflected on their impressions and the different reading strategies implemented. Some comments were like: “*fue dificil pero con la ayuda de estrategias dadas por el profe pude entender, tengo que seguir leyendo mas*”; “*I did not know about Reading strategies and infered meanings by the strategies , I love to read in English.*”

*Note.* The fourth section of the field notes from Bogota's field notes

It is interesting how students coordinated strategies to understand readings and transmit messages in writing. Then, it might be said that the orchestrating phase is centered on the evaluating and reflecting phase in this analysis because, from the CALLA overview, the teacher's actions create the necessity that learners constantly coordinate different strategies to understand the reading and be understood when writing their reflections.

**Evaluating Strategies.** This phase is about assessing the whole cycle of the learning process and its effectiveness (Anderson, 2002, p. 4). In this study, evaluating strategy is seen as part of the expansion phase seen from the teacher's role, as when learners expand, they become aware of what they learned and what to have to learn. Even though the current research focuses on reading comprehension, this mixed implementation encourages learning to read and write.

Figure 19 shows the learners' self-evaluation using resources Web 2.0 and some writing.

However, it is outstanding that not all the students have the same language level; some write in Spanish.

**Figure 19**

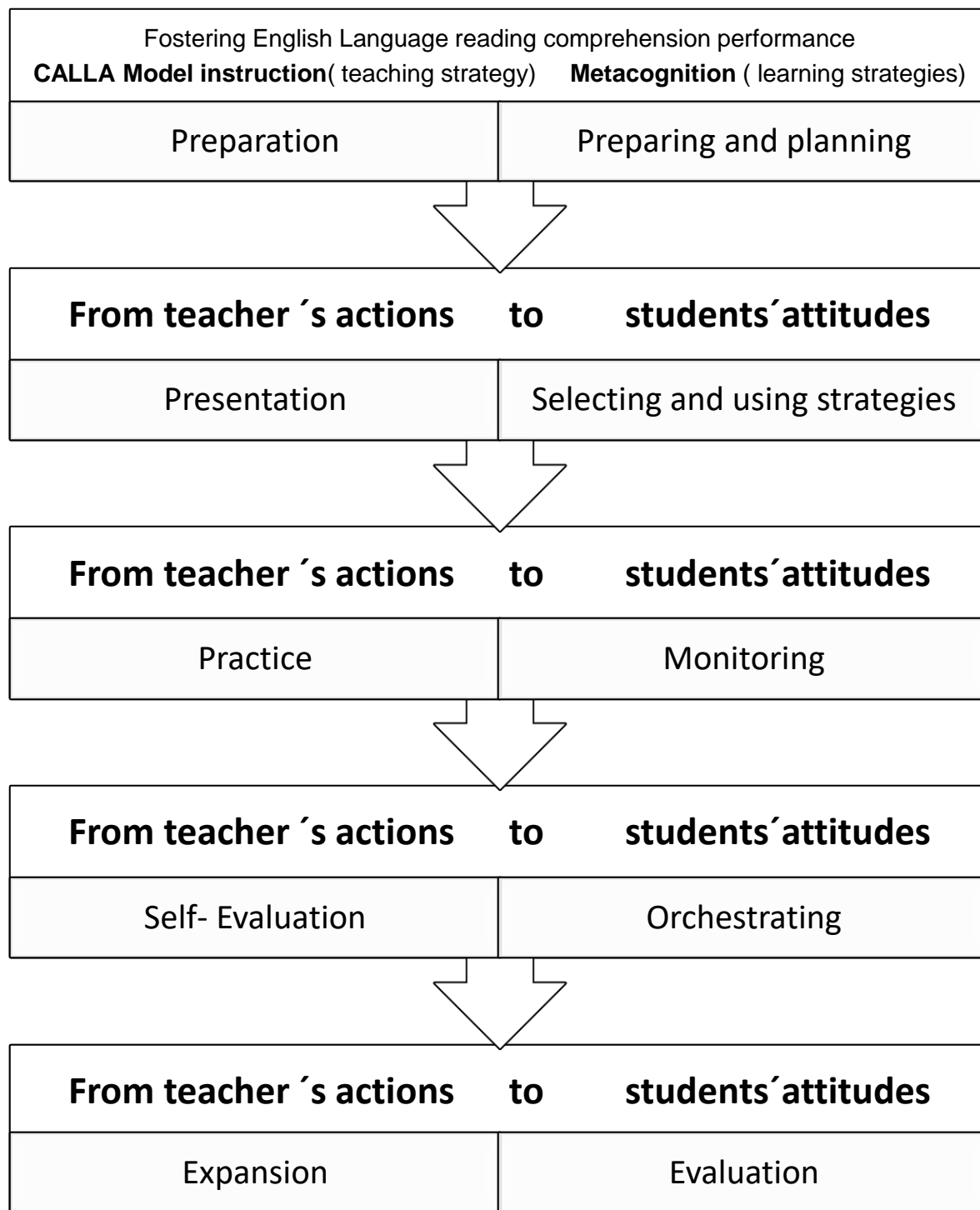
*Students' Actions During the Evaluating Phase*



*Note.* A blog example designed by a student participant

To make it more understandable, the previous categories and sub-categories discussion to foster English reading comprehension performance are presented in Figure 20. It demonstrates that the teacher's role grounded on CALLA model instructions encourages metacognition in learners with the corresponding strategy.

Figure 20

*Categories and Subcategories Discussion*

*Note.* Own authorship

### ***Reading Comprehension Development***

As aforementioned in the categories and subcategories discussion, CALLA instructions led students to master metacognitive strategies in their reading comprehension tasks when working on the students' artifacts. It means that reading comprehension development requires the implementation of some teacher's instructions to encourage metacognitive attitudes in students and then foster English language reading comprehension performance; as Arismendi et al. (2011) emphasized, " Readers need explicit instructions and training from the teacher " ( p. 15).

In this sense, the teacher instructed and supported the three artifacts implementation, promoting reading comprehension development by mastering reading strategies accompanied by CALLA instructions, metacognitive strategies, and ICT resources mediation. Moreover, during the stages of development, students appropriated and boosted metacognition, which is beneficial in any learning process. The present section tackles the different strategies to develop English reading comprehension during the proposed development stages of the three students' artifacts.

Table 4 lists the reading strategies and the steps grounded on the theoretical foundations presented to develop English reading comprehension. It is essential to highlight that the same steps and strategies shown in Table 4 were applied in the three artifacts; however, the strategies and tasks were continuously corrected according to the students' performance during the previous artifact implementation as any learning process is flexible, dynamic and changeable ( Puerto, 2020).

**Table 4***Reading Comprehension Development*


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Reading Comprehension Development

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	Stages	Strategies and steps
Bogota, Cartagena, and Amazonas artifacts	Preparation	Predicting topics through brainstorming and questioning
	Presentation	Boosting prior knowledge through visualizing, making inferences
	Practice	Skimming and scanning, click and clunk for guess meanings, peer interaction, and asking students to use reading strategies.
	Assessment and reflection	Discussing strategies use, reviewing
	Expansion	Evaluating strategies and blog working

---

*Note.* Own authorship

In the preparation stage, the teacher projected a collage from the specific city to encourage students to predict the topic through brainstorming on the board and quick oral questions about the place as strategies to boost vocabulary and motivate students to prepare for reading. Moreover, students mentioned and tried to describe the collage projected. Consequently, the teacher set as goal to comprehend Bogota, Cartagena, and Amazon's information by learning

and applying different reading strategies mediated by teacher instructions and ICT resources. It might be said that in the presentation stage, learners start to prepare and plan for learning unconsciously. In the presentation stage, the teacher socialized the artifacts and their sections, and students worked on boosting the prior knowledge section, which was the first part of the artifact. Students boosted their prior knowledge by making inferences from pictures and titles and connected ideas placed in the previous brainstorming. In the first artifact, learners tried translating some words as a compensation strategy; nevertheless, learners avoided translation in the two later artifacts. At this stage, learners started to select and use different learning strategies. Figure 21 shows some tasks from this section and how students performed them.

## Figure 21

*Boosting Prior Knowledge Section From Bogota's Artifact*

### 1. BOOSTING PRIOR KNOWLEDGE

#### 1.1 Preview (Before reading – antes de leer)

Look the pictures and skim the title of the article and do (*Mira las imágenes y échale un vistazo al título y desarrolla*)

a. Select 5 words or ideas relating to the pictures and title. (*Selecciona 5 palabras o ideas relacionadas con las imágenes y el título*)

1.	Food	3.	trees	5.	restaurants
2.	coffe	4.	drinks		

*Note.* The artifact developed by a student

During the practice stage, the teacher introduced the second section of the artifacts, monitoring. In this part, the teacher promoted monitoring learners reading through questions such as: *was the message clear? What did I not understand? How to understand it?* Then, learners mastered click and clank and get the gist as reading strategies to find synonyms to enrich their vocabulary and identify main ideas to comprehend the text better. Additionally, students

needed to interact with themselves to help and learn cooperatively. Figure 22 demonstrates the second section of the artifact and the reading strategies proposed.

**Figure 22**

*Monitoring Section From Amazona's Artifact*



## 2. MONITORING:

### 2.1 CLICK & CLUNK (After reading – después de leer).

- a. Identify and write the "click " and "clunk" words. ( Identifica las palabras click y las palabras clunk ) .

CLICK	CLUNK
<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>window tourist adventure historic people</p> </div>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>glance towering interspersed wildlife leaders</p> </div>

- b. Read again the clunk sentences and focus your attention on their context. Now, let's try to define three of them ( Lee las oraciones que tienen las palabras clunk y enfoca tu atención en su contexto . Ahora , intenta definir tres de ellas )

<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <p>leaders: community</p> </div>
<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <p>wildlife: life of the peoples</p> </div>
<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <p>towering: natural</p> </div>

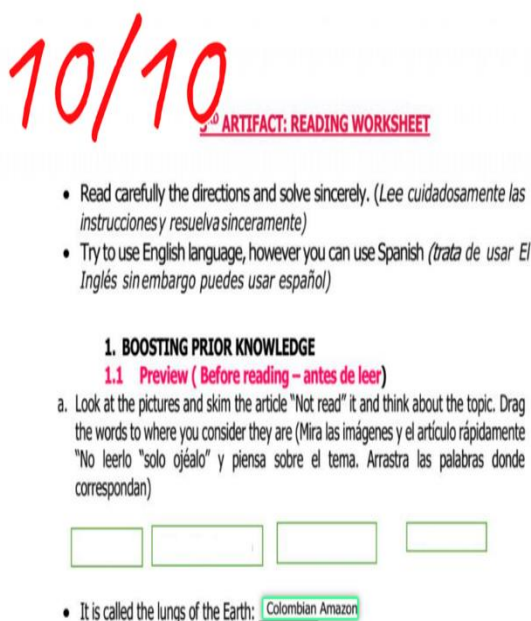
*Note.* A sample developed by a student



The teacher discussed the reading strategies used in the assessment and reflection stage with learners. Learners assess and reflect on their performance in each task and mastering the reading strategies. The teacher self-evaluated and reflected on their artifact proposals and corrected some tasks as an outcome of those reflections. Alongside the reflection stage, teacher-reviewed topics related to the cities as prepositions and vocabulary proposed in the school curriculum since some students had difficulty writing their thoughts. In this manner, students worked on metacognition by implementing reading and metacognitive strategies such as self-reflection. Figure 23 reveals some quantitative scores of the students after implementing the artifact; however, the significant outcome was the students' self-assessment and reflection since they became aware of their real performance, what and how to learn.

**Figure 23**

### Quantitative Scores



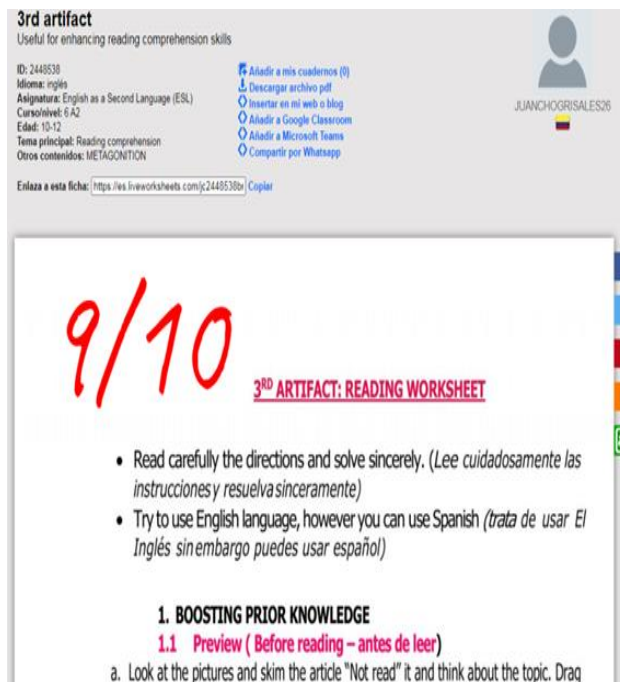
**10/10** **3RD ARTIFACT: READING WORKSHEET**

- Read carefully the directions and solve sincerely. (*Lee cuidadosamente las instrucciones y resuelva sinceramente*)
- Try to use English language, however you can use Spanish (*trata de usar El Inglés sin embargo puedes usar español*)

**1. BOOSTING PRIOR KNOWLEDGE**  
**1.1 Preview ( Before reading – antes de leer)**

a. Look at the pictures and skim the article "Not read" it and think about the topic. Drag the words to where you consider they are (*Mira las imágenes y el artículo rápidamente "No leerlo "solo ojealo" y piensa sobre el tema. Arrastra las palabras donde correspondan*)

- It is called the lungs of the Earth: **Colombian Amazon**



**3rd artifact**  
Useful for enhancing reading comprehension skills

ID: 2448538  
 Idioma: inglés  
 Asignatura: English as a Second Language (ESL)  
 Curso/nivel: 6 A2  
 Edad: 10-12  
 Tema principal: Reading comprehension  
 Otros contenidos: METACOGNITION

**9/10** **3RD ARTIFACT: READING WORKSHEET**

- Read carefully the directions and solve sincerely. (*Lee cuidadosamente las instrucciones y resuelva sinceramente*)
- Try to use English language, however you can use Spanish (*trata de usar El Inglés sin embargo puedes usar español*)

**1. BOOSTING PRIOR KNOWLEDGE**  
**1.1 Preview ( Before reading – antes de leer)**

a. Look at the pictures and skim the article "Not read" it and think about the topic. Drag

*Note.* Evidence of some artifacts developed and checked

In the expansion stage, the teacher proposed extra tasks such as researching more information about a particular city and writing a short report about their hometowns to link the vocabulary seen in the artifacts and the school curriculum. Learners had to implement the strategies studied during the implementation. In this stage, they also created a personal blog where students reflected on their performance artifacts that demonstrated their reading performance improvement and acquired a more reflective and comprehensive awareness of their learning process, a metacognitive awareness.

Alongside the description of these stages and what instructions the teacher mastered and students acquired or implemented, it is clear that reading comprehension development was a process based on strategies and a self-reflection of the teacher's instructions and the impact on the learners' performance. The simple fact of implementing an ICT resource with young learners encourages the reading comprehension process. Moreover, creating a metacognitive awareness is not about explicitly teaching it; it might implicitly use resources and strategies to promote it.

## **Discussions and Conclusions**

### **Introduction To Arguments And Conclusions**

The current research goals were to foster the English language reading comprehension performance in 6th-grade students from Gimnasio Militar Fuerza Aeroespacial Colombiana TQS by implementing metacognitive strategies and the CALLA model mediated by reading comprehension strategies and Web 2.0 resources. Therefore, designing and applying three sessions with the CALLA model supported by Web 2.0 resources where the teacher mastered CALLA strategies to reach the aims was necessary. Thus, it was required to consider describing and analyzing the teacher and learners' roles during the implementation to notice the effects of the teacher's strategies on learners' performance. As an outcome, it was found that master CALLA model strategies promote metacognition in students, having a good effect on English reading comprehension performance.

The literature review found several studies that support the CALLA model and Metacognitive strategies mediated by web 2.0 resources and reading strategies in English language learning, even though few studies aimed at analyzing the impact of CALLA model strategies on students' reading and metacognition development. In this sense, the present study results are meaningful for the language research field since its findings were not only about answering questions and providing statistical facts but also proposed a different perspective of CALLA and metacognition.

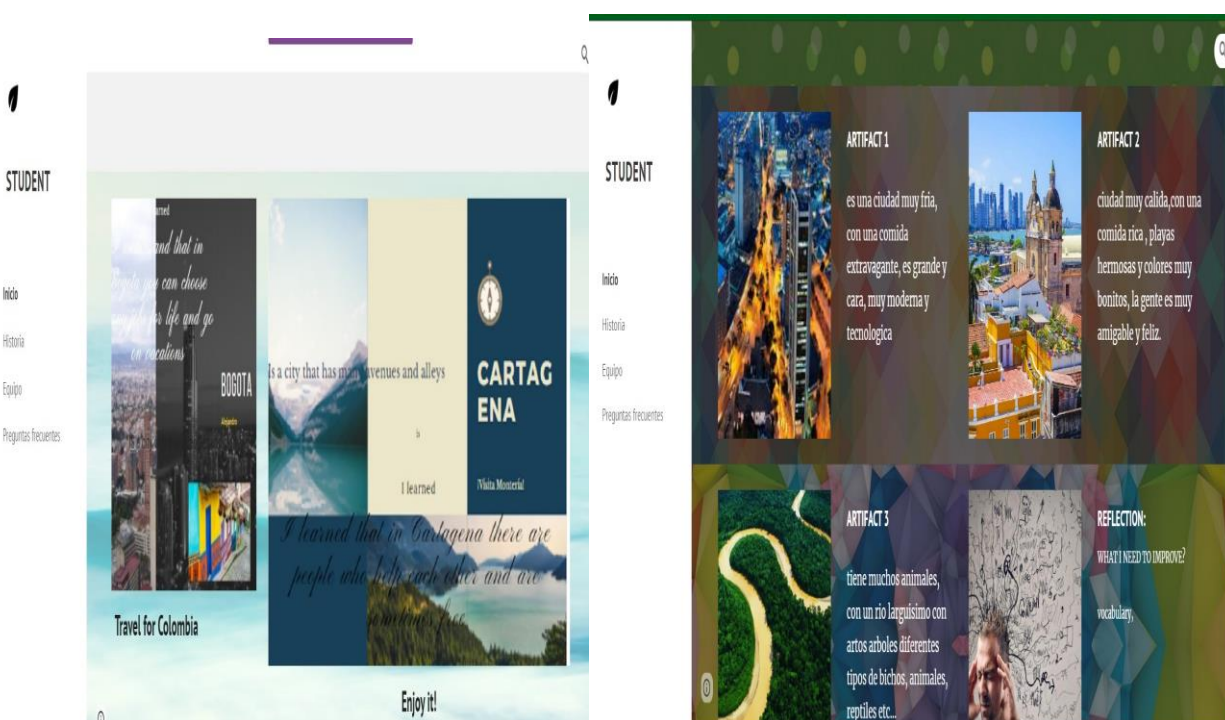
### **Importance Of The Results**

As previously addressed, this research demonstrated that teachers who implement CALLA model strategies and technology in their pedagogical practices not only encourage English language learning in students but also promote their metacognition development

unconsciously, having a positive impact on their learning performance due to innovative pedagogical practices that permit learners to be appropriated from their learning process autonomously and reflectively making a meaningful learning process. Figure 24 demonstrates some blogs from students where they reflected on their English reading process development and what they learned and had to learn.

**Figure 24**

*Blog Samples*



*Note.* Evidence of the students' performance at the end of the implementation.

However, four out of six students accomplished the blog creation since students frequently got absent because of the extra and special family permissions to go out of the base. Regarding the blogs, it is evidenced that students used the second language, others tried translating, and some used the first language as they did not have the same language level. The point is that students were involved in the task despite the mistakes or poor reflection; they

acquired strategies to foster their English language learning, especially reading comprehension skills. In this sense, these outcomes emphasized the teachers' obligation to constantly reflect on and update their pedagogical practices to master enjoyable classes and try to break down the tedious perception that English language learning has had over time. Figure 25 evidences how students work during the artifacts' implementation.

### **Figure 25**

#### *Evidence of Students Developing Artifacts*



*Note.* Students during the implementation stage in the computer room

The qualitative data's role in this study was another significant result since it allowed us to obtain deep knowledge about teacher's and students' attitudes, strategies, and performance advances in their English language teaching and learning processes displayed in the field notes and lesson plans, which were the primary resources for understanding, analyzing, and concluding this research. Relating the attitudes and strategies, it was clear that well-addressed instructional

strategies benefit English reading comprehension performance, encouraging a more committed attitude toward the learning process.

### **Pedagogical And Research Implications For The Field Of Study**

It is essential to address that the CALLA model and metacognitive strategies play a significant role in fostering English language comprehension and are helpful in any learning process, as the CALLA model provides strategies that promote metacognition skills in learners. Metacognition makes the students take ownership of their learning process, boosting skills like the autonomy to monitor, orchestrate, evaluate, and self-reflect on the strategies implemented and their learning outcomes. They, moreover, supported this implementation on the web. 2.0 resources make a meaningful learning process as learners love technology, and it dynamizes any class.

Notwithstanding, the mixed implementation between CALLA model strategies and metacognition was the plus point of this research because many studies deal with these instructions and strategies' effects on language learning. Still, few aimed to measure the consequences of these instructions in students' roles, specifically in metacognition development. Then, the present study posed teaching and learning proposals full of innovative strategies to encourage and foster language teaching and learning.

### **Research Limitations On The Present Study**

The limitations of this study were divided into the institution's context and the researcher's experience. Regarding the context, part of the proposal was to innovate English learning and teaching using Web 2.0 resources, and often, the internet connection was weak, making the implementation harder since the Amazon jungle surrounds the institution. Furthermore, the frequent students' absences since the population of the study was children from

military families who enjoy special permission to go out from the base for one week or more. Another limitation related to the context was the difficulty of implementing the research in the school since it is a military institution full of privacy and security policies.

Relating to the research experience, it was the first study carried out by the researcher, who was also new to the institution and its context because of his recent transference. The researcher spent much time adapting to the institution, identifying the needs, and comprehending the whole research process. However, these addressed limitations enrich the pedagogical practice of the researcher, making him mature as a teacher and researcher, acquiring skills of adaptation and critical thinking development, which are essential to any teacher.

### **Recommendations For Further Research**

This research study has demonstrated to the teachers and researchers that mixed Web 2.0 resources with CALLA model instructions encourage metacognition development in learners, positively impacting the entire language learning process. Much literature is found about the benefits of technology in hand with CALLA and metacognition in language learning; in contrast, it is not easy to find studies about metacognitive development in learners because of the implementation of CALLA model instructions. Therefore, it is recommendable to assess further the effects of CALLA model instructions in students and what other attitudes encourage them apart from metacognition.

On the other hand, it is advisable to have a clear that any research study is not only a process that intends to solve a problem but also fosters the researcher's growth since it encourages critical thinking, adaptation to diverse contexts, and self-reflection generating meaningful contributions to the research context and English teaching. Consequently, doing research goes beyond solving problems; it tries to understand the needs of reality and, through an

awareness of the continuous search for knowledge, proposes improvement strategies that must be constantly tested and changed, if necessary, a changeable knowledge instead of a static one.

## **Conclusions**

Nowadays, the necessity of knowing and mastering the English language in our society is mandatory for enrolling in a recognized superior educative institution or getting a job; in fact, a person who does not have proficiency in this language is cataloged as illiterate. Hence, primary and secondary schools from rural and urban areas in Colombia must strengthen English teaching differently since learners have serious difficulties acquiring this language despite the many efforts the Colombian Ministry of Education has made through standards and criteria displayed in different laws and guides of teaching and learning.

In this regard, the current research focuses on fostering English language reading comprehension by implementing strategies full of metacognitive and CALLA model foundations linked to Web 2.0 resources as an innovative proposal. Nonetheless, the outcomes of this mixed implementation are meaningful for the English reading since CALLA encourages metacognitive skills learners, which are essential to any learning process. It means that teachers are invited to change their traditional pedagogical practices in English language teaching to pedagogical practices that allow the learners to play an active role in their learning process mediated by technology.

Nevertheless, it might be inferred from the outcomes of this study that implementing CALLA model instructions and metacognitive strategies in hand with technology might be beneficial not only to foster English reading comprehension performance but also for any other language skill. Finally, it is concluded that the present study invites teachers to deepen its



proposal and discover new results that this research did not scope because of the time and experience of the researcher.

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## Appendices

### Appendix A. Informed Consent


 FUERZAS MILITARES DE COLOMBIA  
 FUERZA AÉREA  
 GIMNASIOS MILITARES FAC

**CONSENTIMIENTO INFORMADO**

**Título del proyecto:** Lighting Reading  
**Nombre del investigador:** Juan David Grisales Vanegas  
**Cargo:** Docente FAC y Estudiante de la Maestría en Mediación pedagógica para el aprendizaje y enseñanza del Inglés de la UNAD  
**E-mail:** [Jdgrisalesva@unadvirtual.edu.co](mailto:Jdgrisalesva@unadvirtual.edu.co) / [juan.grisalesv@fac.mil.co](mailto:juan.grisalesv@fac.mil.co)  
**Cel:** 3017384421

**Propósito del proyecto:** el propósito de esta investigación es describir cómo los estudiantes de 6 ° grado del colegio GIMFA TQS se desempeñan en la comprensión lectora del Inglés como lengua extranjera haciendo uso de estrategias metacognitivas y colaborativas. Para tal fin se aplicará tres estrategias metacognitivas que son: planear, monitorear y evaluar / reflexionar sobre su propio proceso de aprendizaje de la lengua como lo señaló Anderson (2002). Se prevé que esta propuesta permitirá a los estudiantes reflexionar sobre el proceso de aprendizaje del idioma inglés de forma individual y colaborativa.

Otro propósito de este proyecto es innovar mi práctica docente a través de la mejora de mis habilidades de investigación impulsadas durante este postgrado de nivel maestría, y ponerlas al servicio de la comunidad educativa de la Fuerza Área Colombiana (FAC)

**Autorización:**  
 Tres Esquinas Caquetá, 23-SEP -2021

Por medio del presente documento, los padres de familia del grado 6° del **GIMNASIO MILITAR TQS**, del municipio de Tres Esquinas, del departamento de Caquetá; en su condición de padre y/o representante legal de su acudido, autorizo al docente **JUAN DAVID GRISALES VANEGAS** de la asignatura de INGLÉS a participar en el presente proyecto investigativo y educativo el cual requerirá material intelectual , imágenes ( fotos ) e instrumentos como cuestionarios y encuestas en pro del desarrollo de este proceso investigativo que se adelanta en esta institución; y a las cuales tendré acceso para el análisis de los datos . Se resalta que la identidad del menor no será publica en ningún momento pues esta será reemplazada por un código numérico. Para lo cual se firma brindando los datos a continuación

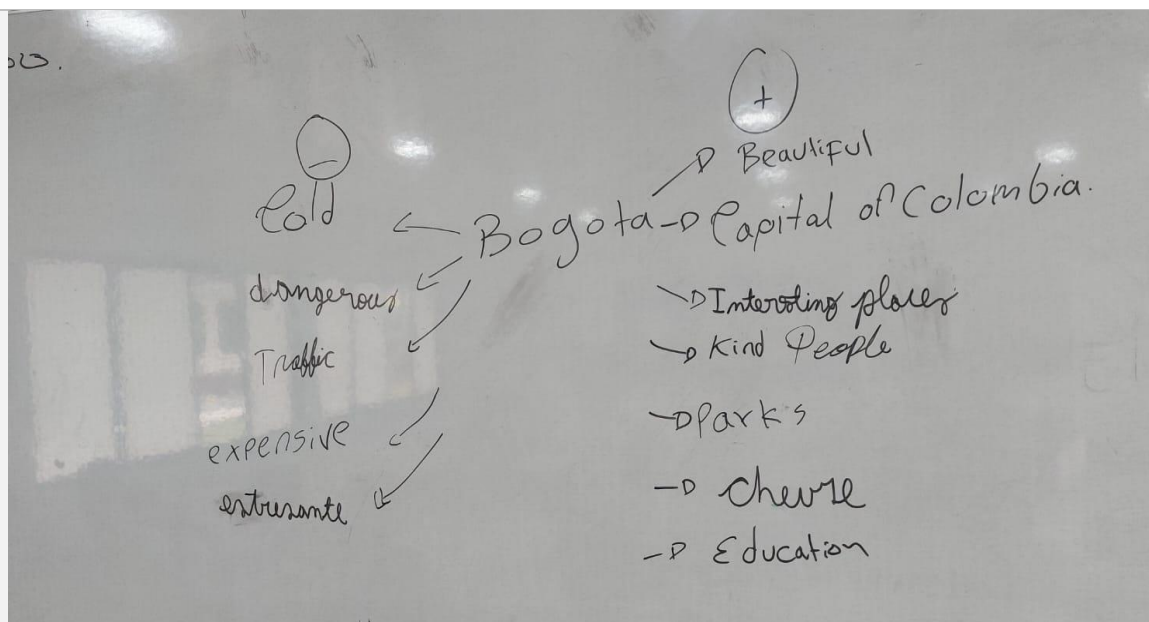
ESTUDIANTE	Código	NOMBRE ACUDIENTE	FIRMA
GUERRERO MONTEALEGRE SAMUEL DAVID	Estudiante 1	Melba Montealegre G	<i>[Handwritten Signature]</i>
MANTILLA VARGAS VALERIE LUCIA	Estudiante 2	Lorraine Vargas	<i>[Handwritten Signature]</i>
MORA MEDINA HARVEY SANTIAGO	Estudiante 3	Adriana Medina	<i>[Handwritten Signature]</i>
RAMIREZ MOLINA ALISSON	Estudiante 4	Andrea Marcela Molina	<i>[Handwritten Signature]</i>
RAMIREZ SALAZAR STEBAN YUSSEFF	Estudiante 5	Esteban Salazar	<i>[Handwritten Signature]</i>
RODRIGUEZ GARCIA MARTIN SANTIAGO	Estudiante 6	Marta García R	<i>[Handwritten Signature]</i>
SALINAS QUEVEDO ALEJANDRO	Estudiante 7	Rocio Quevedo	<i>[Handwritten Signature]</i>
SIERRA RAFAEL SANTIAGO	Estudiante 8	Henry Sierra	<i>[Handwritten Signature]</i>

*Note.* Eight students signed the document; however, six participated during the research process.



### Appendix B. A Field Notes Sample

<b>FIELD NOTES</b>	
<b>Institution:</b>	GIMFA TQS
<b>Date:</b>	28 / 30-SEP-2021
<b>Session</b>	One
<b>Topic:</b>	Knowing Bogota
<b>Researcher's name:</b>	Juan David Grisales Vanegas
<b>What did I do? ( teacher )</b>	
<p>I started the class by writing and presenting the objectives. Afterward, I posed questions about Bogota to boost their prior knowledge and promote the students' group participation through a short debate. The questions were oral, “ <i>what do you know about Bogota ?, What is the thing you like the most about it? And why?</i>”. Simultaneously, I guided the brainstorming about this city; It was developed on the board in the preparation stage. Something remarkable, it was that students were interested in continuing participating by giving more words and they were more curious.</p>	



I continued with the Presentation stage. I logged on to live worksheets websites and socialized the Knowing Bogota artifact and its section. I solved some questions as students were curious and interested. Then, I accompanied the first section of the development of the artifact, motivating active reading by providing them with different reading strategies such as looking at the pictures and deducing topics, skimming, and scanning.

### 1. BOOSTING PRIOR KNOWLEDGE

#### 1.1 Preview (Before reading - antes de leer)

Look the pictures and skim the title of the article and do (*Mira las imágenes y échale un vistazo al título y desarrolla*)

a. Select 5 words or ideas relating to the pictures and title. (*Selecciona 5 palabras o ideas relacionadas con las imágenes y el título*)

1.	<input type="text"/>	3.	<input type="text"/>	5.	<input type="text"/>
2.	<input type="text"/>	4.	<input type="text"/>		

b. List 3 things that you know about Bogota (*Enumere tres cosas que sepas de Bogota*)

1.	<input type="text"/>
----	----------------------

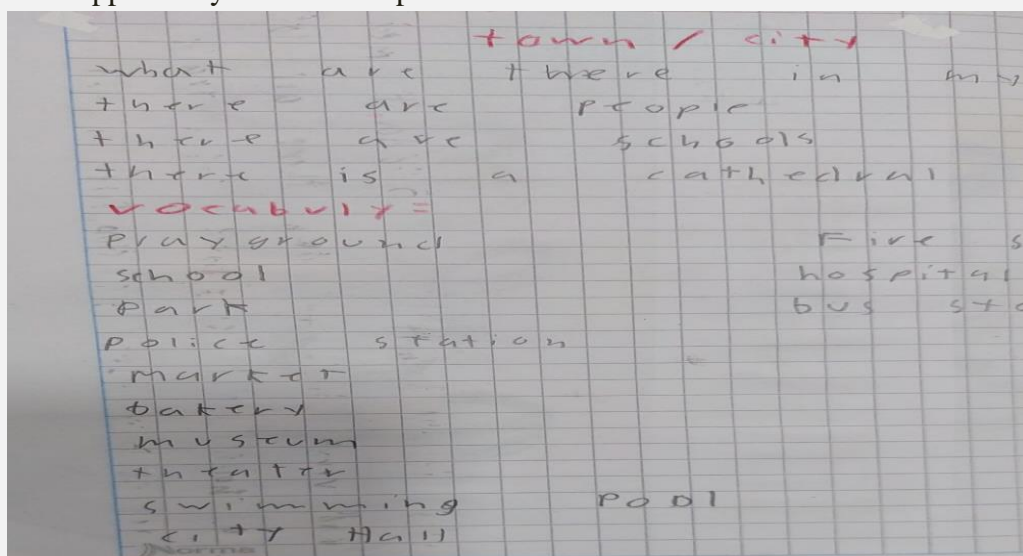
Later, I presented the Practice stage. Here, I socialized the second part of the artifact; I encouraged students to monitor their reading process by questions like *Was the message clear? What did I not understand? How to understand it?*; I motivated students about how to solve the lack of understanding in the text by reading strategies like find its synonym.

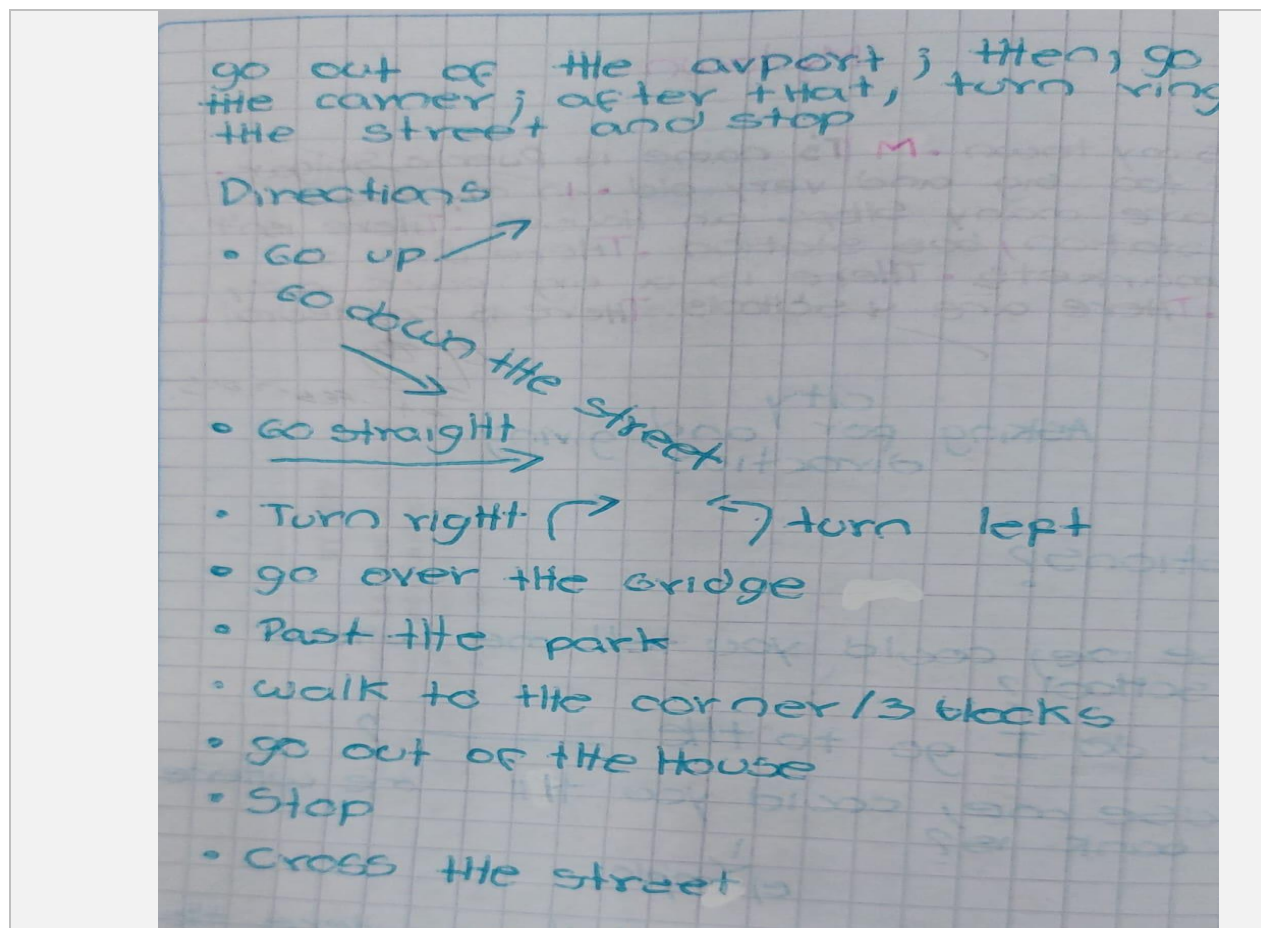
Find one synonym for each word (*Encuentra un sinónimo para cada palabra*)

1. Village	<input type="text"/>
2. Mansions	<input type="text"/>
3. Cuisine	<input type="text"/>
4. Dishes	<input type="text"/>
5. Destinations	<input type="text"/>

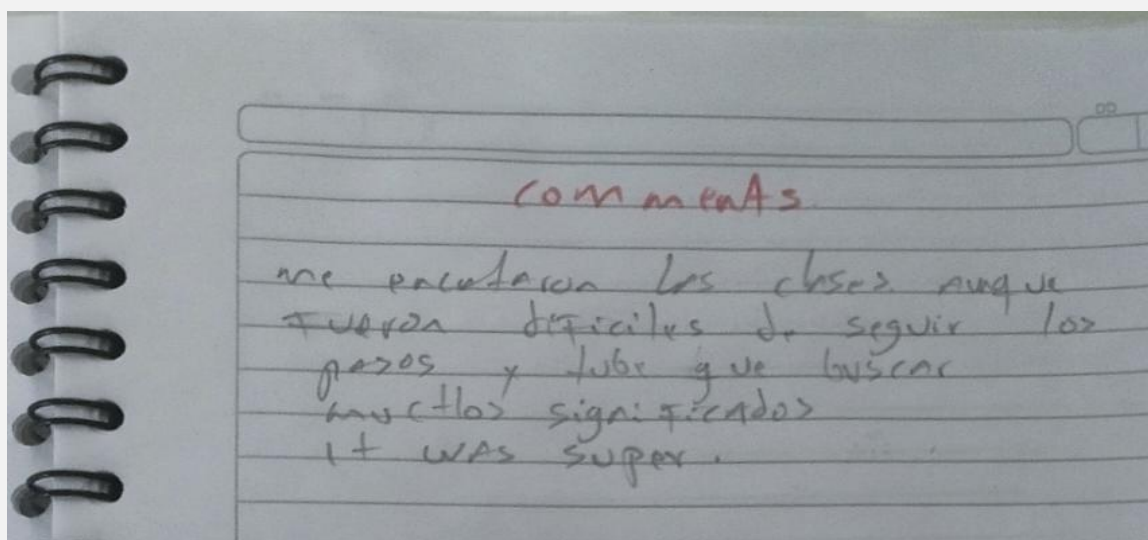
 LIVEWORKSHE

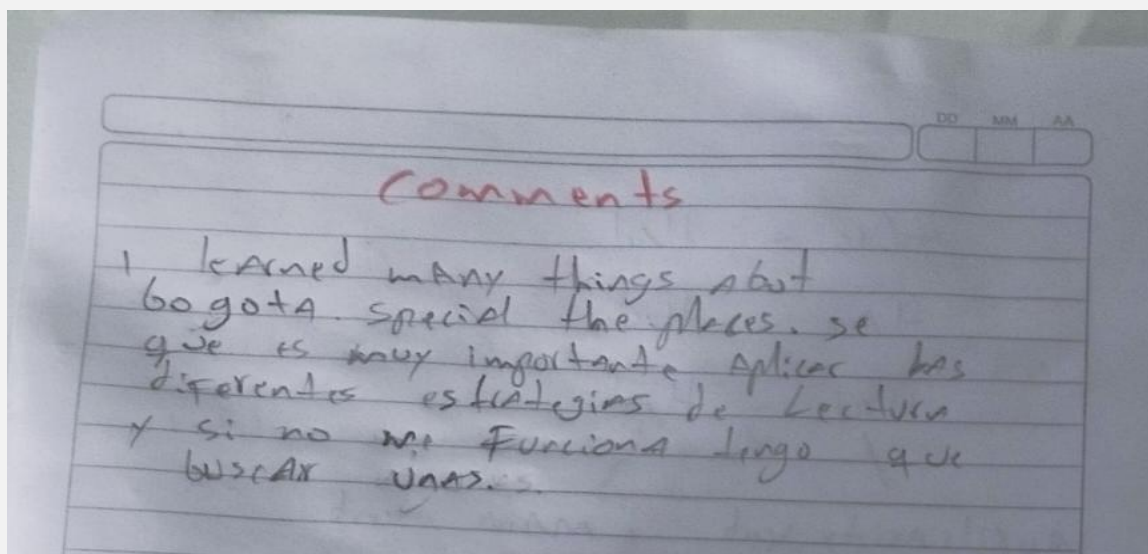
During the assessment and reflection stage, I inspired students to participate in expressing places and features from Bogota. I made some corrections and helped students with some ideas. I had the opportunity to revise prepositions of place and the city's vocabulary; it was an excellent opportunity to link the topics from the school curriculum and the artifact.





In the reflection part, I accompanied the discussion of different strategies used. I also guided some translations to write.





Finally, I encouraged students to expand their knowledge by writing a short report about their hometown. At this point, students connected the artifact's topic with the city's vocabulary to write about their hometowns, expanding their knowledge and putting it into practice. They were really motivated.

### What did students do?

In the preparation stage, students sit on the floor and answer orally the questions posed by the teacher, some of them answered in English, and others mixed both languages ( English and Spanish ) as they do not have the same proficiency in the language. Most importantly, students boosted their prior knowledge and reminded vocabulary, and others memorized that new vocabulary related to the topic; they participated dynamically and were motivated in the brainstorming construction.

During the presentation stage, students entered Knowing Bogota's artifact. They asked questions such as: " *how did you create it ?* ", " *what did we have to do?*  ", " *How to surf on it?*  ". Students read the text twice, fastly and slowly, but first, they look at the pictures and infer meanings and topics. Here the students intended to translate, but they were addressed by the teacher to avoid it by reading strategies such as reading before and after.



**Bogotá**, as a city for all, offers many different activities that make it an ideal tourist destination. One of these activities is discovering Colombia's history and its importance. To learn more about Colombia's history, you can go downtown, where you will find the **Plaza de Bolívar**, **the Primatial Cathedral**, and **the Casa de Nariño**, which houses the Colombian government.

You can also visit touristic places like the **neighborhood of La Candelaria**, the heart and historical epicenter of **Bogotá**. There you will find great mansions built in the colonial

In the practice stage and monitoring , students aimed to ask and answer themselves for meanings; it was interesting to see how students interacted with themselves to guess meanings, mostly translated, but others tried to follow the teacher's instructions. In this stage, students mastered conscious and unconscious reading strategies.

Students revised vocabulary of the city and prepositions of place as grammar topics found in the reading. They got clear on the topic and practiced with some exercises connecting the content of the artifact. Students reflected on their impressions and the different reading strategies implemented. Some comments were like: *"fue difícil pero con la ayuda de estrategias dadas por el profe pude entender, tengo que seguir leyendo mas "*; *" I did not know about Reading strategies and inferred meanings by the strategies , I love to read in English "* .

Finally, Students expanded their knowledge by writing about their hometowns, where they put into practice the vocabulary and the issues learned after applying the artifact.

My town

THIS IS my town. Its name is Puerto Salgar. It's not too big and very old. In my town there are many stops and houses. There isn't train station, bus station. There are 1 Supermarkets. There is a big park in my town. There are 4 schools. There is cathedral.

My town Puerto Salgar

This my town its name is Puerto Salgar, it's not too big and every old. In my town <sup>there are</sup> 2 bakeries, <sup>there is</sup> 1 park, 1 police station and 1 fire station, 5 supermarker, 2 farmer, 2 paper store, 3 schools, 1 garden, 1 bank and 1 churches, and houses.

My town

THIS IS my town. Its name is Puerto Salgar. It's not too big and very old. In my town there are many stops and houses. There isn't train station, bus station. There are 1 Supermarkets. There is a big park in my town. There are 4 schools. There is cathedral.

### Appendix C. Lesson Plan Sample

<b>KNOWING BOGOTA</b>	
<b>Grade:</b>	6th
<b>Class length</b>	100 minutes
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. To make students aware of different reading strategies by thinking aloud in groups</li> <li>2. To infer information and meanings by observing pictures and titles from the text.</li> <li>3. To apply different reading strategies to understand information from the text</li> <li>4. To assess and self-reflect on what was learned by recognizing the strategies used and the performance</li> <li>5. To expand knowledge by deepening the topic</li> </ol>
<b>Materials</b>	<p><b>Knowing Bogota artifact:</b>  <a href="https://www.liveworksheets.com/worksheets/en/English_as_a_Second_Language_(ESL)/Reading_comprehension/3rd_artifact_jc2448538bn">https://www.liveworksheets.com/worksheets/en/English_as_a_Second_Language_(ESL)/Reading_comprehension/3rd_artifact_jc2448538bn</a></p>
<b>STEPS</b>	
<b>Preparation</b>	The teacher will ask students about previous ideas from Bogota. Brainstorming will be written on the board by the students. Students will sit on the floor in a circle.
<b>Presentation</b>	<ol style="list-style-type: none"> <li>1. Teacher will present the artifact and its sections.</li> <li>2. Students will develop the first section of the artifact, Boosting prior knowledge.</li> <li>3. Students and teacher will read together about Bogota</li> </ol>
<b>Practice</b>	<ol style="list-style-type: none"> <li>1. Students will work on the second section of the artifact, Monitoring.</li> <li>2. Students will have the necessity to implement different strategies to accomplish the tasks</li> <li>3. Teacher will help them if they need it</li> </ol>
<b>Assessment and self reflection</b>	<ol style="list-style-type: none"> <li>1. Each student will describe Bogota and its places using their own words.</li> <li>2. Students will say what they have learned</li> </ol>
<b>Expansion</b>	<ol style="list-style-type: none"> <li>1. Students will go deep into the topic, looking extra information</li> </ol>



**Appendix D. Artifacts List**

<b>Artifact</b>	<b>Address</b>
Bogota	<a href="https://es.liveworksheets.com/dh2427165zz">https://es.liveworksheets.com/dh2427165zz</a>
Cartagena	<a href="https://es.liveworksheets.com/ai2431482sz">https://es.liveworksheets.com/ai2431482sz</a>
Colombian Amazon	<a href="https://es.liveworksheets.com/jc2448538bn">https://es.liveworksheets.com/jc2448538bn</a>