UNIVERSIDAD HISPANOAMERICANA

FACULTY OF EDUCATION

Thesis submitted to obtain the Licentiate Degree in I & II Cycles of English Teaching

The impact of implementing the CLIL approach in teaching Science using English as a Foreign Language in students from fourth grade at Santa Rosa de Lima Primary School located in Santo Tomás, Santo Domingo, Heredia during the first semester 2026.

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Heredia, Costa Rica

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SWORN OF DECLARATION

Yo Xinia Acuña Solís, mayor de edad, portador de la cédula de identidad número 205650811 egresado de la carrera de Enseñanza del Inglés Para I y II Ciclos de la Educación General Básica de la Universidad Hispanoamericana, hago constar por medio de éste acto y debidamente apercibido y entendido de las penas y consecuencias con las que se castiga en el Código Penal el delito de perjurio, ante quienes se constituyen en el Tribunal Examinador de mi trabajo de tesis para optar por el título de Licenciatura de Enseñanza del Inglés Para I y II Ciclos de Educación General Básica, juro solemnemente que mi trabajo de investigación titulado: The impact of implementing the CLIL approach in teaching Science using English as a Foreign Language in students from fourth grade at Santa Rosa de Lima Primary School located in Santo Tomás, Santo Domingo, Heredia during the first semester 2026, es una obra original que ha respetado todo lo preceptuado por las Leyes Penales, así como la Ley de Derecho de Autor y Derecho Conexos número 6683 del 14 de octubre de 1982 y sus reformas, publicada en la Gaceta número 226 del 25 de noviembre de 1982; incluyendo el numeral 70 de dicha ley que advierte; articulo 70. Es permitido citar a un autor, transcribiendo los pasajes pertinentes siempre que éstos no sean tantos y seguidos, que puedan considerarse como una producción simulada y sustancial, que redunde en perjuicio del autor de la obra original. Asimismo, quedo advertido que la Universidad se reserva el derecho de protocolizar este documento ante Notario Público. En fe de lo anterior, firmo en la ciudad de San José, a los 09 días del mes de julio del 2026.

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LETTER FROM THE TUTOR

CARTA DEL TUTOR

San José,09 de julio del 2026

MSc. Diego Torres Moreno
Carrera Enseñanza del inglés
Universidad Hispanoamericana

Estimado señor:

La estudiante Xinia Acuña Solís, cédula de identidad número 205650811, me ha presentado, para efectos de revisión y aprobación, el trabajo de investigación denominado: The impact of implementing the CLIL approach in teaching Science using English as a Foreign Language in students from fourth grade at Santa Rosa de Lima Primary School located in Santo Tomás, Santo Domingo, Heredia during the first semester 2026, el cual ha elaborado para optar por el grado académico de licenciatura en la Enseñanza del inglés para I y II ciclos.

En mi calidad de tutor, he verificado que se han hecho las correcciones indicadas durante el proceso de tutoría y he evaluado los aspectos relativos a la elaboración del problema, objetivos, justificación; antecedentes, marco teórico, marco metodológico, tabulación, análisis de datos; conclusiones y recomendaciones.

De los resultados obtenidos por el postulante, se obtiene la siguiente calificación:

a)	ORIGINAL DEL TEMA	10%	10
b)	CUMPLIMIENTO DE ENTREGA DE AVANCES	20%	20
C)	COHERENCIA ENTRE LOS OBJETIVOS, LOS INSTRUMENTOS APLICADOS Y LOS RESULTADOS DE LA INVESTIGACION	30%	30
d)	RELEVANCIA DE LAS CONCLUSIONES Y RECOMENDACIONES	20%	20
e)	CALIDAD, DETALLE DEL MARCO TEORICO	20%	20
	TOTAL		100

En virtud de la calificación obtenida, se avala el traslado al proceso de lectura.

Atentamente,
KARLA MARIA AVALOS CHARPENTIER (FIRMA)

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LETTER FROM THE READER

CARTA DE LECTOR

San José, 13 de julio de 2026

Universidad Hispanoamericana

Estimado señor(a)

La persona estudiante Xinia Acuña Solís cédula de identidad número 205650811, me ha presentado, para efectos de revisión y aprobación, el trabajo de investigación denominado "**The impact of implementing the CLIL approach in teaching Science using English as a Foreign Language in students from fourth grade at Santa Rosa de Lima Primary School located in Santo Tomás, Santo Domingo, Heredia during the first semester 2026.**" el cual ha elaborado para obtener su grado de Licenciatura en la enseñanza del inglés.

He revisado y he hecho las observaciones relativas al contenido analizado, particularmente lo relativo a la coherencia entre el marco teórico y análisis de datos, la consistencia de los datos recopilados y la coherencia entre éstos y las conclusiones; asimismo, la aplicabilidad y originalidad de las recomendaciones, en términos de aporte de la investigación. He verificado que se han hecho las modificaciones correspondientes a las observaciones indicadas.

Por consiguiente, este trabajo cuenta con mi aval para ser presentado en la defensa pública.
Atte.

Yanory Arguedas Carballo

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LETTER OF AUTHORIZATION FROM THE AUTHOR

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Estimados Señores:

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Cordialmente,

Cédular 205650811

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grade students at Santa Rosa de Lima Primary School. They have also taught me to be a better educator every day. They are a wonderful and harmonious group, always demonstrating a positive attitude and a strong willingness to learn and do their best in class. I feel truly grateful to have been your science teacher. To all of you, thank you from the bottom of my heart.

DEDICATORY

To God, thank you for being my light, my Savior, my Heavenly Father. I know that his endless mercy and his Holy Spirit is guiding my path with grace, strength and love.

To Raúl, my husband and the person who shows me the meaning of hardworking, resilience, teamwork as my partner in all those years.

To Daniela, my sweetest girl, who shows me her courage and tenacity.
And last but not least, I want to dedicate this to myself, for believing in me.

Love you so much!

Fondly!

Xinia

ABSTRACT

This research analyzes the impact of implementing the CLIL approach in teaching Science using English as a Foreign Language to fourth grade students at Santa Rosa de Lima Primary School, located in Santo Tomás, Santo Domingo, Heredia, during the first semester of 2026. CLIL emerged in Europe as a response to social, political, and economic demands for higher levels of language competence. The term, coined by David Marsh, refers to an approach that integrates content and language learning through the use of an additional language as the medium of instruction, promoting both academic and linguistic development.

This study follows a mixed-methods approach, combining quantitative and qualitative data. The quantitative component focuses on measuring student progress through instruments such as tests and rubric-based assessments to establish objective evidence of academic performance. The qualitative component complements these results by analyzing students' perceptions, attitudes, and levels of engagement throughout the implementation of the CLIL approach.

The research aims to evaluate students' comprehension of scientific concepts taught through English, as well as their development of language skills, particularly vocabulary and reading comprehension. Additionally, it seeks to identify students' attitudes toward learning Science through CLIL. The findings are expected to contribute to bilingual education by providing evidence of CLIL's effectiveness in primary education contexts, highlighting the importance of integrating content and language instruction to enhance both academic achievement and meaningful student engagement.

Vocabulary: CLIL (Content and Language Integrated Learning)- dual approach English as a Foreign Language (EFL)-Student Engagement- Academic Achievement

RESUMEN

Esta investigación analiza el impacto de la implementación del enfoque CLIL en la enseñanza de Ciencias utilizando el Inglés como lengua extranjera en estudiantes de cuarto grado de la Escuela Primaria Santa Rosa de Lima, ubicada en Santo Tomás, Santo Domingo, Heredia, durante el primer semestre del año 2026. El enfoque CLIL surgió en Europa como respuesta a las demandas sociales, políticas y económicas de alcanzar mayores niveles de competencia lingüística. El término, acuñado por David Marsh, se refiere a un enfoque que integra el aprendizaje de contenidos y del idioma mediante el uso de una lengua adicional como medio de instrucción, promoviendo tanto el desarrollo académico como lingüístico.

Este estudio sigue un enfoque de métodos mixtos, combinando datos cuantitativos y cualitativos. El componente cuantitativo se centra en medir el progreso de los estudiantes mediante instrumentos como pruebas y evaluaciones basadas en rúbricas, con el fin de establecer evidencia objetiva del desempeño académico. El componente cualitativo complementa estos resultados mediante el análisis de las percepciones, actitudes y niveles de participación de los estudiantes durante la implementación del enfoque CLIL.

La investigación tiene como objetivo evaluar la comprensión de los estudiantes sobre conceptos científicos enseñados en Inglés, así como el desarrollo de sus habilidades lingüísticas, particularmente el vocabulario y la comprensión lectora. Además, busca identificar las actitudes de los estudiantes hacia el aprendizaje de Ciencias a través del enfoque CLIL. Se espera que los resultados contribuyan al campo de la educación bilingüe al proporcionar evidencia sobre la efectividad del CLIL en contextos de educación primaria, destacando la importancia de integrar la enseñanza de contenidos y lenguaje para mejorar tanto el rendimiento

académico como la participación significativa de los estudiantes.

Vocabulario: CLIL (Aprendizaje Integrado de Contenidos y Lengua Extranjera) – enfoque dual; Inglés como Lengua Extranjera (EFL); participación estudiantil; rendimiento académico.

CHAPTER I

RESEARCH PROBLEM

PROPOSED TOPIC: The impact of implementing the CLIL approach in teaching Science using English as a Foreign Language in students from fourth grade at Santa Rosa de Lima Primary School located in Santo Tomás, Santo Domingo, Heredia during the first semester 2026.

1.1 RESEARCH STATEMENT

Education in the 21st century requires constant innovation in teaching practices in order to respond to the evolving needs of learners. In primary education, the early years play a crucial role in shaping students' cognitive, linguistic, and social development. For this reason, schools are expected to provide learning environments that go beyond rote memorization and encourage the development of meaningful, long-lasting knowledge. However, despite national curriculum guidelines promoting student centered methodologies, many classrooms still rely on traditional, teacher directed approaches that limit students' active participation in their own learning process.

This investigation is conducted with fourth grade students at Santa Rosa de Lima Primary School, focusing on the first stage of the second cycle of the Costa Rican Basic Education Program using English as a Foreign Language. At this level, students are expected to consolidate key communicative, cognitive, and problem-solving skills that prepare them for the final and higher academic demands. Nevertheless, it has been observed that current instructional practices are not consistently foster deep comprehension or meaningful engagement with the content. This situation raises concerns regarding the effectiveness of the methodologies being used and their capacity to support the development of essential academic and linguistic competencies.

The need to innovate and improve the teaching methodology arises from the importance of offering strategies that promote active learning, critical thinking, and autonomous knowledge construction. Meaningful learning occurs when students are able to relate new information to their prior experiences and apply it in real life contexts. Therefore, the adoption of more dynamic, student-centered approaches becomes essential to ensure that learners not only acquire information, but also understand, internalize, and apply it effectively. A shift in instructional methods is required to guarantee that learning experiences are functional, relevant, and aligned with the cognitive development of young learners.

This study aims to respond to this educational need by exploring and implementing a more effective teaching methodology that enhances students' learning outcomes. The purpose is to contribute to the improvement of classroom practices and to provide evidence of how innovative strategies can positively impact students' academic performance and motivation. Furthermore, CLIL approach is described as an evolving approach to teach and learn where subjects are taught and studied through the medium of EFL system. The experience of learning subjects through the medium of a nonnative language can be more challenging and intensive than conventional language lessons. Students are exposed to a broader range of languages while simultaneously gaining knowledge and skills in different areas of the curriculum. In CLIL, learning a curricular subject in a EFL involves drawing on effective pedagogical practice from a range of different educational context. The CLIL methodology is designed so that students "learn to use language and use language to learn" (Mehisto, Marsh, & Frigols, 2008, p. 26), which involves a twin focus on both meaning and linguistic form for successful, integrated learning. By analyzing the effects of this methodological change, the research seeks to support the creation of

more meaningful and transformative learning experiences for primary school students.

This investigation, conducted with fourth grade students, addresses the current limitations in meaningful Science learning resulting from traditional methodologies and the insufficient integration of language and content. By innovating these teaching strategies, the research aims to facilitate a robust learning process for students as they transition through the second cycle of basic education.

1.1.1 Background of the problem

In Costa Rica, Law No. 181, known as the *Education Code*, establishes Science as one of the fundamental subjects in primary education. In alignment with this legal framework, the national curriculum reform "*Educar para una Nueva Ciudadanía"* emphasizes the development of competencies such as critical thinking, problem-solving, and scientific inquiry. As part of this reform, a major curricular transformation implemented in 2016 redefined the structure and objectives of the Science curriculum (*Ciencias*) across the nine years of *Educación General Básica* (EGB).

This curricular transformation has significantly influenced private schools in Costa Rica, many of which have adopted English as the language of instruction for science. Consequently, Science is commonly taught entirely in English from the elementary level onward. Although this practice responds to the growing demand for bilingual education and global communication skills, it also introduces pedagogical challenges related to language proficiency, content comprehension, and instructional methodology (Coyle, Hood, & Marsh, 2010).

A major challenge in this context is that most primary school teachers are generalists rather than subject-matter experts in science. Primary Science instruction depends largely on teachers' professional judgment regarding what content is most relevant and how learning should be facilitated. Teachers must balance curricular demands across subjects while simultaneously supporting language development when Science is taught through English. This dual responsibility can affect the depth of content understanding and the effectiveness of classroom instruction (Mehisto, Marsh, & Frigols, 2008).

Instructional decisions are influenced by teachers' pedagogical knowledge, content knowledge, professional experience, and beliefs about the role of science education. Due to differences in teacher preparation and expertise, diverse instructional approaches to science can be observed across private schools in Costa Rica, leading to inconsistencies in students' learning experiences (Dalton-Puffer, 2011).

In response to these challenges, the Content and Language Integrated Learning (CLIL) approach has emerged as a pedagogical alternative that integrates content learning and language development. CLIL promotes vocabulary retention, enhances communication skills, and facilitates interdisciplinary learning, resulting in more meaningful educational experiences (Ávila, 2025). Research in elementary contexts indicates that CLIL contributes positively to science knowledge acquisition and increases students' motivation to learn a foreign language, as English is used as a tool for learning rather than an isolated subject (Huang, 2020).

Despite international evidence supporting CLIL, limited research has been conducted on its implementation in fourth grade Science classrooms within private schools in Costa Rica. This lack of context-specific studies highlights the need to

explore the impact of CLIL on students' learning outcomes at this educational level.

1.1.2 Problematization

Science as part of the fundamental subjects in primary education curriculum can be a challenge for educators, especially in the use of the different approaches and methodologies due to teachers are not experts in the content. Eventually this lack of expertise will affect the performance of the class and the acquisition of the curricular objectives.

Furthermore, success in language learning will be achieved when students receive instructions and can be understood and at the same time use previous knowledge from grammar, vocabulary and the specific topic in context to investigate, compare and give results about the tasks they are performing.

Several reasons support the importance of researching this proposed problem. First, improving teaching quality in science education is essential, particularly because many primary school teachers are not subject-matter specialists. Investigating effective methodologies can strengthen both their pedagogical and content knowledge, ensuring that students receive more accurate, engaging, and meaningful instruction.

Additionally, this research aims to enhance students' meaningful learning. A lack of teacher expertise often leads to superficial understanding of scientific concepts. By exploring innovative approaches such as Content and Language Integrated Learning (CLIL), students can better connect scientific knowledge with real-world contexts, thereby promoting deeper comprehension and long-term retention.

Another important reason is the need to effectively integrate language and content. Since Science is frequently taught through a second language, it is crucial to examine how linguistic and scientific skills can be developed simultaneously. This

study can provide valuable insights into how students use their language knowledge, including grammar and vocabulary, to reason scientifically and communicate their ideas effectively.

Furthermore, identifying effective methodologies for non-expert teachers is a key concern. Many generalist teachers are required to teach Science without formal training in the subject. Research in this area can help determine which teaching strategies are most effective in supporting these educators and improving overall instructional quality.

The study also contributes to supporting curriculum objectives and national education standards. Understanding how different methodologies impact student performance can help align teaching practices with the intended learning outcomes established by national or institutional frameworks.

Moreover, promoting equity and inclusion in science learning is another significant reason for conducting this research. When teachers lack confidence or preparation, some students—particularly those with lower language proficiency—may fall behind. This study can propose strategies to make Science education more accessible and inclusive for all learners.

Finally, this research contributes to teacher professional development. The findings may serve as a foundation for designing workshops, training programs, or policy recommendations aimed at improving teachers' methodological competence in teaching Science through a foreign language.

Despite the implementation of English as the medium of instruction for Science at Santa Rosa de Lima Primary School, fourth grade students continue to experience difficulties in achieving meaningful learning. This gap is primarily attributed to the persistence of traditional instructional methodologies and the insufficient integration

of language and content. Beyond identifying these methodological flaws, there is an essential need to implement a scaffolded, integrated approach that mirrors the natural process of language acquisition through discovery. Science requires a high level of Cognitive Academic Language Proficiency (CALP), in which traditional expositive methods fail to provide. Therefore, the school must transition toward a model where language support is embedded directly into scientific exploration. This shift is necessary to transform the English language from a barrier into a vehicle for academic expression. Without fulfilling this need for methodological reform, the school risks a double deficit, where students fail to master English linguistic nuances while simultaneously losing interest in scientific inquiry due to the cognitive load of an unoptimized learning environment.

1.1.3 Justification of the topic

This research is justified based on convenience, social relevance, practical implications, and theoretical value, as established by Torres (2010) and Hernández et al. (2014), since it addresses an educational need related to English language learning and content instruction in fourth grade students through the CLIL approach. From a convenience perspective, this study is useful because it provides teachers with an effective methodological alternative to improve English language learning while simultaneously teaching curricular content. The CLIL approach allows students to develop linguistic and cognitive skills in an integrated manner, making the teaching learning process more efficient and meaningful at the primary level.

In terms of social relevance, the study benefits fourth grade students by responding to the growing demand for English proficiency in a globalized society. Early exposure to English through content subjects such as Science supports the

development of communication skills, critical thinking, and intercultural awareness, which are essential competencies for students' academic and social development.

Regarding practical implications, this research contributes to the resolution of common challenges in English language instruction, such as limited exposure to the target language and low student engagement. By implementing CLIL, English is used as a vehicle for learning content, increasing students' motivation and opportunities for authentic language use in the classroom. The results of this study may guide teachers in the application of CLIL strategies in similar educational contexts.

From a theoretical perspective, this research complements existing literature on Content and Language Integrated Learning by providing evidence of its effectiveness in primary education, particularly at the fourth-grade level. It contributes to the understanding of how CLIL supports meaningful learning and the development of the four language skills in young learners.

Therefore, this study is relevant and necessary, as it not only supports the improvement of English teaching practices but also contributes to the academic discussion on integrated methodologies in bilingual education.

1.2 FORMULATION OF THE PROBLEM

What is the impact of implementing the CLIL approach in teaching Science using English as a Foreign Language in students from fourth grade at Santa Rosa de Lima Primary School during the first semester 2026?

1.3 OBJECTIVES OF THE INVESTIGATION

1.3.1 General objective

To determine the impact of implementing the CLIL approach in teaching Science

using English as a Foreign Language in students from fourth grade at Santa Rosa de Lima Primary School located in Santo Tomás, Santo Domingo, Heredia during the first semester 2026.

1.3.2 Specific objectives

- To evaluate students' comprehension of scientific concepts taught through the CLIL approach in English.
- To analyze students' development of English language skills particularly vocabulary and reading comprehension within the context of science lessons after implementing the CLIL approach.
-To identify students' attitudes and engagement levels toward learning Science through English using the CLIL methodology.

1.4 SCOPE AND LIMITATIONS

1.4.1 Scope

The scope of this research is specifically centered on a particular group of fifteen students from fourth grade students at Santa Rosa de Lima Primary School. This particular cohort was selected through purposive sampling because they represent a critical developmental stage where the transition from learning to read to reading to learn in a second language occurs. These students vary in their English proficiency levels, yet they collectively struggle with the cognitive demands of the Science curriculum when delivered via traditional methods.

By focusing on this small sample, the study allows for a deep, qualitative analysis of how specific instructional shifts impact individual learning trajectories. Furthermore, the inclusion of the English teacher and the academic principal as participants provides a holistic view of the educational ecosystem. Their participation

is necessary to bridge the gap between classroom level difficulties and institutional policy, ensuring that the proposed strategies are not only effective for the students but also sustainable within the school's broader academic goals.

1.4.2 Limitations

Limitations to face during the investigation process are related to the time or quantity of lessons available to carry out CLIL methodology. Santa Rosa Lima Primary School is a private institution with the autonomy to design the academic curriculum and indeed the quantity of lessons required by each subject. During previous years, Science as subject has been taught in four weekly lessons.
In addition, other activities related to annual calendar (assemblies, test week, teacher meetings, institutional activities, field trips) might affect the quantity of time available.

Finally, another limitation will be the participation of students during the implementation of CLIL as a learning methodology. Primary students are active learners, and it is usually great amounts of participation even though it is important to have a good management of the group and positive discipline to accomplish the proposal objectives.

CHAPTER II

THEORETICAL FRAMEWORK

2.1 HISTORICAL CONTEXT

2.1.1 History of Santa Rosa de Lima Primary School

Santa Rosa de Lima Primary School is a private institution sited in Santo Tomas, Santo Domingo, Heredia. It is located in front of the street that connects Santo Domingo and San José province.

The beginning of the institution was in 1998 in Santa Rosa district, next to the Catholic Church of this district. This is the reason of its name. Santa Rosa de Lima School began just with preschool students. And after eight years, primary school levels opened by 2006. It started first grade with only six students. In 2007, second grade was opened and the following years the school continued its development until 2011 when primary school was achieved, and the Santa Rosa de Lima School had I and II Cycles of Basic Education according to the established in the Costa Rica Education Code no. 181.

In 2008, the school opened a new modern building where it is actually. Nowadays, the student population is one hundred ten students in its primary levels. The school principal and owner is Msc. Kattia León Villalobos. The academic principal is Msc. Gabriela Calvo Agular in charge of monitoring the learning process, active methodologies, cooperative work and the performance of the students in each subject and monitoring teachers' performance. The administrative area is in charge of two secretaries and two janitors. The educative area is divided in Spanish and English curriculums.

Santa Rosa de Lima School offers a bilingual education based on MEP guidelines. The school emphasized its ideology in humanism. Principals and teachers are awareness that human and emotional balance is essential for the learning process for all the children that are part of Santa Rosa de Lima family.

2.1.2 Motto of Santa Rosa de Lima School

“Happy children, ready to face life and its changes**”.**

2.1.3 Vision of Santa Rosa de Lima Primary School

To be the leading institution in student education, providing learners with the tools to become independent and autonomous individuals through timely and caring education, in harmony with the environment.

2.1.4 Mission of Santa Rosa de Lima Primary School

To provide to all the student population a holistic education, focused on the development of values, humanistic and inclusive principles, attitudes and skills to adapt to life in a constantly changing world.

2.1.5 Values of Santa Rosa de Lima Primary School

According to “Normativa Institucional” (Normativa Institucional 2025 SRL, Art. 16, 2025) Santa Rosa de Lima Primary School pursue values based in humanism. The main pursued values are:

- *Empathy*
- *Equality*
- *Respect*
- *Diligence*
- *Critical Thinking*
- *Honesty*
- *Commitment*
- *Faith*
- *Spirituality*

2.2 CONCEPTUALIZATION OF THE CLIL APPROACH

2.2.1 Definition of CLIL (Content and Language Integrated Learning)

Content and Language Integrated Learning (CLIL) is defined as a dual-focused educational approach where an additional language is utilized for the simultaneous teaching and learning of both curriculum content and linguistic skills. According to Coyle et al. (2010), this model is not merely a new form of language education nor a simple variation of subject teaching; rather, it is an innovative fusion of the two. In this context, the relationship between the subject matter and the language is interwoven, ensuring that neither element is prioritized at the expense of the other. By establishing a rigorous and transparent theoretical basis, CLIL provides a flexible framework that can be adapted to various educational environments to achieve a more comprehensive learning experience than traditional models allow.

While CLIL shares certain foundations with other pedagogical practices, it is fundamentally distinct from standard English as a Foreign Language (EFL) due to its content driven nature. In a traditional EFL setting, the primary objective is the acquisition of the language itself, often through isolated grammar or vocabulary exercises. Conversely, CLIL makes the language a vehicular tool through which academic subjects are explored, meaning linguistic acquisition occurs naturally through the exploration of specific subject topics. This synergy ensures that the vehicular language is not learned in isolation but is instead supported by the curriculum content to achieve superior educational outcomes.

The experience of learning subjects through the medium of a nonnative language is inherently more intensive than conventional language lessons. As learners are exposed to a broader range of functional language, they must simultaneously acquire knowledge and skills across different areas of the curriculum.

Because of this complexity, CLIL does not rely on a single method; instead, it involves drawing on effective pedagogical practices from a range of different educational contexts, including immersion and bilingual education. This makes the CLIL environment a challenging yet rewarding space that extends beyond the limitations of the traditional language classroom (Coyle et al., 2010).

2.2.2 Origins of CLIL

CLIL is the result of social, political and economic actions in Europe. It was launched by 1994 as a necessity to improve higher levels of language competence. The influence of the major bilingual initiatives was to design and otherwise adapt an existing language teaching approach so that it will be provided with a wide range of students with higher levels of competence. The term CLIL was created by David Marsh, who has worked on multilingualism and bilingual education for many years in Europe. The idea of its proponents was to create an umbrella term which encompasses different forms of using language as the medium of instruction.

This dual focused educational approach in which an additional language is used for learning and teaching content and language with the objective of promoting both content and language mastery to predefined levels. CLIL has emerged as an example of interdisciplinary educational convergence that requires multifaceted research approaches of educational expertise.

2.2.3 Principles of the CLIL approach

This innovated approach has been promoted to improve the educational system and to establish the necessary conditions that will allow students to achieve the appropriate level of academic performance in CLIL subjects. In addition, there is a pursuit of improving students´ proficiency in both their mother and the target

language, attaching the same importance to each. Moreover, CLIL develops intercultural understanding as well as social and thinking skills.

CLIL prepares students for the globalized world and increases students' motivation to learn foreign languages. Promotes the learning of a more extensive and varied vocabulary. Enhances student's confidence in the target language and improve language competence in the target language (Lorenzo, 2011).

2.2.4 The 4Cs framework (Content, Communication, Cognition, Culture)

The CLIL approach is grounded in the 4Cs framework, which conceptualizes the learning process through four interconnected dimensions. According to Coyle (2010. p.41), effective CLIL is not merely the sum of these parts but rather the result of their synergy.

- **Content:** This refers to the actual subject matter in this case, Science. It involves the progression of knowledge, skills, and understanding related to the specific elements of the defined curriculum. It is the "what" of the classroom.
- **Communication:** Language is used to learn and to communicate. It relates to the meaningful and interactive use of subject specific language in oral and written forms. Here, students do not just study grammar; they use English as a tool for scientific inquiry.
- **Cognition:** CLIL challenges students to think. It focuses on developing higher-order thinking skills (HOTS) to enable students to express both abstract and concrete ideas. This is essential for Science, where students must move from simple observation to complex analysis.
- **Culture:** This dimension emphasizes exposure to alternative perspectives and shared understandings. It deepens self-awareness and global citizenship,

allowing students to see Science as a universal human endeavor.

CLIL practitioners should try to incorporate all of the 4Cs into each lesson in some shape or form in order to have students feel more familiar with the target language and they can do more things with it and not only with subject or content exposure.

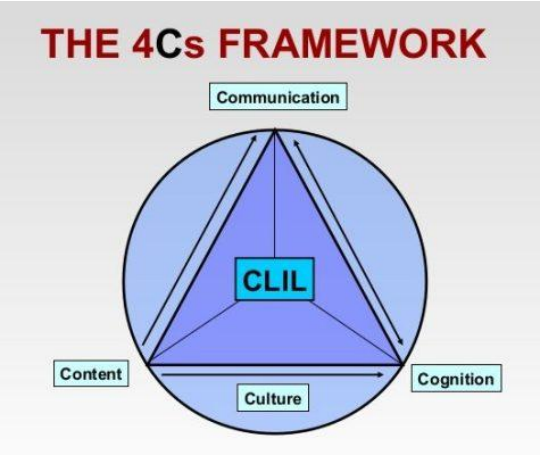

Figure1. The four Cs Framework. **Source***:* Coyle, D., Hood, P., & Marsh, D. (2010). CLIL: Content and Language Integrated Learning. Cambridge University Press.

2.2.5 BICS & CALP related to CLIL

The distinction between Basic Interpersonal Communication Skills (BICS) and Cognitive Academic Language Proficiency (CALP), as originally conceptualized by Cummins (1979), is particularly relevant for the fourth-grade population at Santa Rosa de Lima. A common pitfall in bilingual programs is the "BICS/CALP gap," where students appear fluent because they possess strong interpersonal skills, yet they struggle to grasp complex scientific concepts.

According to Cummins' (1984) "Iceberg Model," the visible portion of language proficiency often masks deeper, more complex cognitive academic skills that lie beneath the surface. For the students in this study, Science requires the performance of high-level cognitive tasks such as hypothesizing, classifying, and analyzing which

cannot be achieved through social language alone. Therefore, the CLIL approach must act as a bridge, providing students with the specific linguistic tools (vocabulary, sentence structures, and academic discourse) necessary to transform their informal ideas into formal scientific knowledge.

Building upon this, there is a compelling need to intentionally scaffold the transition from social to academic language to ensure students do not remain surface fluent, while being academically hindered. In a CLIL environment, this transition is facilitated by aligning Cummins' theories with the 4Cs framework. As Coyle et al. (2010) suggest, for content learning to be meaningful, the language used must support the cognitive demands of the subject. For the fourth graders at Santa Rosa de Lima, this means that teachers cannot rely on general English instruction; instead, they must implement a curriculum that explicitly targets CALP. By doing so, educators address the dual need of linguistic development and scientific literacy, ensuring that the English language serves as a cognitive tool rather than a barrier to achieving the institutional goals of the Science department.

2.2.5.1 Basic Interpersonal Communication Skills

They are the skills needed for social, conversational situations, such as repeating greetings and matching words and pictures. They are related to everyday situations in the use of the target language.

Basic Interpersonal Communication Skills (BICS) encompass the linguistic abilities required for social, conversational situations. These skills are fundamentally context embedded, as students rely on a multimodality of cues such as gestures, facial expressions, and visual aids, to negotiate meaning in everyday interactions (Cummins, 1984). In the classroom setting at Santa Rosa de Lima, BICS is

manifested when fourth grade students engage in routine tasks, such as following simple classroom instructions, matching words to pictures, or exchanging basic greetings. Because these interactions are cognitively undemanding and occur in a supportive social environment, students often acquire this level of proficiency within six months to two years of exposure to the target language (Baker & Wright, 2021).

However, the depth of this proficiency is limited to the surface of communication. While BICS is essential for the social integration of the students in this study, it does not provide the linguistic infrastructure necessary for academic abstraction. As noted by Roseberry-McKibbin (2014), BICS allows for high functional fluency in familiar settings but lacks the specialized vocabulary and complex grammatical structures required for subject specific learning.

For the purpose of this thesis, it is vital to recognize that a student's ability to converse fluently in English (BICS) does not equate to their readiness to process scientific inquiry. Distinguishing BICS from deeper cognitive proficiency is therefore a methodological need; it prevents the educational vision where a teacher assumes a student is ready for complex Science content simply because they have mastered the social language of the classroom.

2.2.5.2 Cognitive Academic Linguistic Proficiency

Unlike the informal nature of social communication, CALP is characterized by being context reduced and cognitively demanding. In a science classroom, this means students must process information without the aid of the immediate physical environment or interpersonal cues. Instead, they must rely on discourse level features of English, such as complex sentence structures e.g., "If the temperature increases, then..." and specialized terminology that is not used in daily life.

According to Collier and Thomas (1995), the acquisition of this academic level is a much longer process than social fluency, often requiring five to seven years for a student to reach the level of a native speaker. This is because academic language involves "higher order thinking skills" (HOTS) where the language itself becomes the primary tool for mental manipulation of abstract concepts.

For the fourth-grade students at Santa Rosa de Lima, the need for CALP is specifically tied to the functional use of science language. This involves more than just knowing vocabulary; it requires the ability to use academic registers to perform tasks such as justifying an opinion, formulating a hypothesis, or interpreting evidence. As Gibbons (2009) emphasizes, this transition from daily language to scientific language requires deliberate pedagogical scaffolding. Without this, students face a cognitive ceiling where they might understand a scientific phenomenon intuitively but lack the linguistic precision to express it. Therefore, this research focuses on how the CLIL approach can provide the necessary linguistic bridge to help students move from simple observation (BICS) to formal scientific argumentation (CALP).

2.3 SCIENCE TEACHING IN PRIMARY EDUCATION THROUGH ENGLISH (EFL CONTEXT)

In the Costa Rican educational landscape, the integration of Science and English as a Foreign Language (EFL) represents a pivotal shift toward a transdisciplinary curricular model. This approach is formally enshrined within the "Educar para una Nueva Ciudadanía" policy, which redefines the learner not merely as a recipient of information, but as an active agent equipped with 21st-century competencies. According to the Ministerio de Educación Pública (MEP, 2017), the English language serves as a vital linguistic and cultural bridge, granting students the

agency to navigate global scientific discourse while remaining grounded in their local reality.

Within this EFL framework, Science instruction transcends traditional content delivery. It adopts an action-oriented approach, where the classroom functions as a laboratory for real-world tasks. In this setting, language is not an end in itself but a vehicle for scientific inquiry. Students are expected to use English to hypothesize, observe, and conclude processes that require a sophisticated level of communicative competence. However, this dual focus creates a complex pedagogical environment where the teacher must balance the cognitive load of scientific concepts with the linguistic demands of a foreign language.

One of the most significant hurdles identified in the Costa Rican context is the linguistic transition between different types of language proficiency. As noted by the MEP (2017), citing the foundational work of Jim Cummins, there is a frequent disconnect between the social language students use for daily interaction and the specialized, abstract language required to understand and articulate scientific phenomena.

In many primary classrooms, the shift to CALP is hindered by a reliance on teacher centered methodologies that prioritize rote memorization over conceptual understanding. When students are forced to navigate complex scientific systems in a language they are still mastering, they often experience cognitive fatigue**.** This exhaustion occurs during the double processing phase, where the brain must simultaneously decode unfamiliar syntax while attempting to encode new scientific logic. Without intentional instructional scaffolding such as visual aids, graphic organizers, and hands-on experimentation the linguistic barrier can become an academic ceiling.

Despite these systemic challenges, the MEP's vision emphasizes a global citizenship with local roots. By teaching Science through English, the curriculum aims to empower students to advocate for Costa Rican biodiversity and environmental sustainability on an international stage. This creates a unique educational paradox using a global "lingua franca" to deepen the student's understanding and protection of their immediate, local biological heritage. Consequently, the success of this model depends less on the quantity of English spoken and more on the quality of the pedagogical strategies used to bridge the gap between scientific inquiry and linguistic output.

2.4 SCIENTIFIC SKILLS IN PRIMARY EDUCATION

The development of scientific skills within the Costa Rican primary curriculum marks a fundamental departure from rote memorization, moving instead toward a model of active scientific inquiry. According to the MEP (2021) Science program, achieving scientific literacy involves more than the acquisition of facts; it requires the ability to reason from evidence and make informed decisions based on systematic investigation. This cognitive shift demands that students cultivate habits of mind, associated with scientific thinking, such as formulating testable hypotheses, identifying independent and dependent variables, and interpreting data within their immediate natural surroundings.

In the transition to the second cycle (4th, 5th, and 6th grades), the curriculum intensifies this focus. At this stage, the pedagogical objective shifts from simple observation to the construction of a sturdy conceptual foundation. This foundation is not static; it is designed to be functional, allowing students to apply scientific logic to solve tangible problems within their environment and community. By framing Science

as a tool for community problem-solving, the MEP aligns scientific education with social responsibility and civic engagement.

To operationalize these goals, the Santa Rosa de Lima School adopts a constructivist framework centered on Inquiry-Based Learning (IBL) and the 5E Instructional Model. This model, consisting of five distinct phases: Engage, Explore, Explain, Elaborate, and Evaluate, which provides a structured yet flexible pathway for discovery.

As Worth (2010) contends, this model is essential in primary education because it mirrors the iterative cycle of professional scientific discovery. Rather than receiving information passively through traditional lectures, students act as "mini-scientists." This methodological shift is crucial for several reasons:

- Cognitive Engagement: The "Engage" and "Explore" phases pique curiosity, which is vital for maintaining motivation in an EFL environment.
- Deep Understanding: By moving through "Explain" and "Elaborate," students move beyond the *what* of a phenomenon to the *why* and *how*, ensuring that scientific definitions are understood in context rather than memorized in isolation.
- Collaborative Literacy: IBL naturally fosters collaborative skills. In a bilingual context, this provides a "low-stakes" environment where students can practice scientific academic language (CALP) through peer-to-peer interaction during hands-on experimentation.

Ultimately, the implementation of the 5E model at Santa Rosa de Lima School serves as a scaffolding strategy. By breaking down the scientific process into these five stages, the school mitigates the cognitive fatigue mentioned in previous sections.

The hands-on nature of the "Explore" phase, for instance, provides the necessary

sensory input to help students grasp complex concepts before they are required to "Explain" them in their second language. This synergy between scientific inquiry and language acquisition is what transforms the classroom from a space of "content delivery" into a space of "knowledge construction."

2.5 DEVELOPMENT OF ENGLISH SKILLS IN CLIL

In a Content and Language Integrated Learning (CLIL) environment, English skill development focuses heavily on academic literacy. Llinares et al. (2012) highlight that academic vocabulary in science consists of "Tier 3" technical terms for instance photosynthesis and "Tier 2" functional language such as *compare* or *observe*. For fourth graders, reading comprehension in science requires more than just decoding words; it demands the ability to interpret diagrams, follow procedural instructions, and apply critical thinking to scientific texts. Scaffolding strategies, such as graphic organizers, thinking aloud, modeling and I do, we do and you do method are essential to bridge the gap between their current language level and the demands of the content.

Furthermore, written production in CLIL lessons serves as a vital tool for consolidating both language and science knowledge. Dalton-Puffer (2011) argues that writing in a second language about scientific content encourages students to pay closer attention to grammar and mechanics while ensuring coherence in their explanations. When students write about an experiment, they are forced to use specific linguistic structures such as the passive voice or causal connectors, which strengthens their overall English proficiency. Moreover, writing becomes a way to demonstrate disciplinary literacy, showing that the student can communicate like a young scientist.

2.6 THEORETICAL RELATIONSHIP BETWEEN CLIL AND SCIENCE LEARNING

The relationship between Content and Language Integrated Learning (CLIL) and Science learning is grounded in the 4Cs Framework—Content, Communication, Cognition, and Culture—proposed by Coyle et al. (2010). This framework provides a holistic model in which subject matter and language learning are integrated to promote meaningful and contextualized education. Within the Costa Rican English as a Foreign Language (EFL) context, CLIL has proven particularly effective in enhancing Science learning by encouraging deeper cognitive engagement and purposeful language use.

From a cognitive perspective, CLIL fosters higher-order thinking skills, as students are required not only to understand scientific concepts but also to process, analyze, and communicate them in a second language. This dual demand promotes what Cummins (2000) describes as Cognitive Academic Language Proficiency (CALP), which is essential for academic success. The integration of language and content challenges learners to engage in problem-solving, hypothesizing, and reasoning, all of which are fundamental components of scientific literacy.

Moreover, the communication component of the 4Cs framework ensures that students receive appropriate linguistic scaffolding to access complex scientific content. Strategies such as visual aids, sentence frames, modeling, and collaborative learning enable learners to develop both receptive and productive language skills while engaging with science topics. As Dalton-Puffer (2011) suggests, CLIL classrooms naturally promote interaction, which enhances both language acquisition and conceptual understanding.

In addition, CLIL provides authentic and meaningful contexts for language use.

Science, as a subject, lends itself to inquiry-based and experiential learning, making it an ideal vehicle for integrating language and content. When students use English to conduct experiments, describe observations, and explain phenomena, they perceive the language as a functional tool for discovery rather than a barrier to learning. This aligns with Krashen's (1982) Input Hypothesis, which emphasizes the importance of meaningful and comprehensible input in language acquisition.

The Costa Rican Ministry of Public Education (MEP) curriculum supports this integrated approach by promoting competencies that combine content mastery with language development. The curriculum emphasizes inquiry, critical thinking, and real-world application, all of which are strengthened through CLIL methodologies. Furthermore, the cultural dimension of the 4Cs framework encourages students to connect scientific knowledge with their local environment, fostering environmental awareness and global citizenship—key goals within Costa Rica's educational vision.

As Marsh (2012) highlights, CLIL creates a "robust" learning environment that increases student motivation and engagement. This is particularly relevant in science education, where curiosity and exploration are essential. By embedding language learning within scientific inquiry, students become active participants in their learning process, developing both linguistic competence and scientific understanding simultaneously.

In conclusion, the theoretical relationship between CLIL and Science learning lies in their shared emphasis on active, meaningful, and cognitively demanding learning experiences. CLIL not only enhances students' understanding of scientific concepts but also equips them with the language skills necessary to participate in the global scientific community, while remaining grounded in their local cultural and environmental context.

CHAPTER III

METHODOLOGICAL FRAMEWORK

3.1 TYPE OF INVESTIGATION

3.1.1 Applied Investigation

This research is applied in nature, as it seeks to generate practical knowledge that can be directly used to improve teaching practices. According to Cohen et al. (2007), educational research often aims to solve practical, real-world problems systematically and scientifically in order to improve institutional operations and classroom outcomes.

The main purpose is to determine the impact of implementing the CLIL (Content and Language Integrated Learning) approach in teaching Science using English as a Foreign Language (EFL) to fourth-grade students at Santa Rosa de Lima Primary School, during the first semester of 2026. This aligns with the definition of applied educational research, which is specifically valued for developing new, contextualized knowledge that allows educators to examine and enhance their actual instructional practices within specific settings (Peel, 2020). The results are expected to support teachers and school administrators in making informed pedagogical decisions and improving both content learning and English language development.

3.1.2 Temporal Dimension

This research follows a longitudinal design within a quasi-experimental framework, as it is conducted over a defined instructional period during the first semester of 2026. Unlike a cross-sectional design, which collects data at a single point in time, this study involves multiple stages of data collection, including a pre-intervention phase, an intervention phase, and a post-intervention phase.

According to Cohen et al. (2017), quasi-experimental studies typically require observations over time to measure changes attributable to an educational

intervention. In this study, baseline data will be collected through pre-tests and initial observations to determine students' prior knowledge in science and their level of English proficiency. Following this, the CLIL approach will be implemented during regular classroom instruction. Finally, post-tests, rubrics, and surveys will be administered to evaluate the impact of the intervention on both content learning and language development.

This temporal structure allows the researcher to analyze progress and compare results before and after the implementation of CLIL, providing more robust evidence of its effectiveness. Additionally, the use of repeated measures enhances the validity of the findings by capturing changes in students' performance over time rather than offering a single snapshot.

3.2 FRAMEWORK

The framework of this research is primarily micro in scope, as it focuses on a specific educational context: Santa Rosa de Lima Primary School and, more precisely, a fourth-grade group. This micro-level focus enables an in-depth analysis of how students learn Science through English using the CLIL approach within their real classroom environment. It also ensures that the findings are directly applicable to the institution. To understand this specific context, the study is situated within a broader systemic framework that spans from global trends to classroom realities.

3.2.1 Mega Level

At the mega level, the research considers global educational trends such as bilingual education, CLIL implementation, globalization, and international educational standards. These elements provide a broad context that influences national and

institutional educational practices. As Coyle et al. (2010) argue, CLIL has emerged globally as a transformative educational response to the demands of a globalized world, shifting the focus toward integrated curricula that simultaneously foster content mastery and language competence.

3.2.2 Macro Level

The macro level refers to national educational policies and frameworks, including the Costa Rican curriculum, language policies, and institutional guidelines that regulate teaching practices. This level helps contextualize how CLIL aligns with national educational expectations. According to the Ministry of Public Education (MEP, 2021), national educational policies emphasize the development of bilingualism and the integration of linguistic competencies across various subjects to prepare students for contemporary societal demands.

3.2.3 Meso Level

The meso level bridges national policies and the classroom by focusing on the institutional identity, leadership, and operational culture of the school. According to Fullan (2015), the success of educational innovations depends heavily on the institutional capacity of the school to adapt macro-level mandates into feasible school-wide practices. At this level, the research examines how Santa Rosa de Lima Primary School, through its administrative support and local pedagogical resources, creates the necessary conditions to implement a dual-focused approach like CLIL.

3.2.4 Micro Level

The micro level focuses directly on the immediate classroom environment, encompassing specific teacher practices, student interactions, learning activities, and

ongoing assessment processes. In this research, the micro level is central, as it examines how the Content and Language Integrated Learning (CLIL) approach dynamically affects students' understanding of science content and their concurrent development of English as a Foreign Language (EFL) within daily classroom routines. At this level of granularity, the classroom functions as a dynamic ecosystem where language acquisition and conceptual development occur simultaneously rather than in isolation. By observing these daily routines, the researcher can investigate how instructional strategies facilitate the transition from Basic Interpersonal Communicative Skills (BICS) to Cognitive Academic Language Proficiency (CALP), which is essential for primary students mastering complex scientific discourse in a foreign language.

By analyzing these face-to-face classroom dynamics, this study aligns with the perspective of Banegas (2022), who emphasizes that the true impact of CLIL is determined at the classroom level through the quality of teacher scaffolding, active student engagement, and the contextualized integration of content and language. This micro-level glance is critical for evaluating how the 4Cs framework—Content, Communication, Cognition, and Culture—is operationalized during instruction. It allows for a close examination of the specific scaffolding mechanisms, such as visual aids, graphic organizers, and strategic questioning, that the teacher employs to lower the affective filter and make rigorous scientific concepts accessible. Consequently, focusing on the micro level allows the researcher to capture the immediate pedagogical realities, offering actionable insights that can directly improve instructional design and student learning outcomes within this specific institution.

3.3 NATURE OF RESEARCH

This study follows a mixed-methods approach, combining both quantitative and qualitative data. The quantitative component of this design focuses on gathering numerical and statistical data to provide an objective, measurable map of student progress under the CLIL intervention. By utilizing instruments such as structured pre- and post-tests, objective rubric scores, and targeted grading matrices, the researcher can establish a standardized baseline of academic performance (Creswell & Creswell, 2018). This numerical data minimizes subjective bias, allowing for a statistical analysis of how effectively students are mastering complex science content while concurrently acquiring English as a foreign language. The structural range of this quantitative analysis is vital for identifying overarching trends, patterns of achievement, and statistically significant learning gains across the student sample (Oranga, 2025). Consequently, these measurable metrics provide the empirical evidence necessary to evaluate the core instructional efficacy of the integrated curriculum.

On the other hand, the qualitative dimension of this study captures the contextual depth, nuance, and subjective realities of the daily classroom environment. Relying on continuous classroom observations, open-ended student surveys, and interactive feedback, this approach offers critical insights into primary students lived experiences, shifting perceptions, and communicative engagement during CLIL lessons. As highlighted by Tegan (2021), incorporating qualitative narratives allows researchers to transcend the limitations of exclusive numerical datasets, revealing the complex, multi-layered phenomena that occur within interactive educational settings. These qualitative instruments reveal how students negotiate meaning, how their motivation fluctuates when exposed to foreign language

instruction, and how classroom dynamics evolve during peer-to-peer science tasks. By documenting these face-to-face interactions and affective responses, the qualitative data provides a rich interpretive framework that explains the underlying factors driving the quantitative test results.

This combination ensures a comprehensive understanding of the impact of the CLIL approach. By intentionally integrating the numerical breadth of the quantitative data with the contextual depth of the qualitative findings, the researcher leverages the reciprocal strengths of both paradigms to form a complete, cohesive picture of the primary science classroom (Isom, n.d.).

3.3.1 Character of Research (Descriptive and Correlational)

This research is non-experimental and adopts a dual approach that is both descriptive and correlational in nature. Within the quantitative and mixed-methods paradigm, a descriptive character is essential for establishing an accurate, foundational record of an observed educational phenomenon without manipulating the variable environment. According to Hernández-Sampieri and Mendoza (2018), descriptive studies aim to specify the properties, characteristics, and profiles of people, groups, communities, or any other phenomena subjected to analysis. In the context of this study, this design allows the researcher to systematically document, measure, and delineate how Science lessons are operationalized through the Content and Language Integrated Learning (CLIL) approach within its natural classroom setting, providing a clear account of the real-world instructional environment.

Beyond detailing the teacher’s pedagogical performance, this descriptive scope is vital for profiling the immediate student responses to the dual-focused curriculum. By avoiding experimental manipulation, the study captures the genuine status of primary students' academic performance, active participation, and affective engagement during daily routines. As Miksza and Elpus (2018) note, descriptive educational research serves to answer the "what is" of a setting, organizing raw quantitative data into comprehensive summarize such as mean scores from rubrics and frequency counts of participative behavior that make complex classroom realities interpretable. Consequently, this descriptive character serves as the necessary narrative and statistical baseline, painting a thorough picture of how young learners navigate a foreign language while absorbing scientific concepts.

Transitioning from baseline description to relational analysis, this study concurrently adopts a correlational character to evaluate how these observed instructional elements interconnect. Correlational research designs are utilized by investigators to discover, clarify, and measure the systematically occurring relationships between two or more variables without direct researcher intervention (Miksza & Elpus, 2018). For this inquiry, the correlational scope explores the statistical associations between the specific implementation components of the CLIL approach and the resulting student outcomes. Rather than viewing classroom actions in isolation, this design treats pedagogical strategies as interacting elements, allowing the researcher to determine whether variations in integrated teaching methods correspond with systematic variations in student metrics.

Specifically, this correlational framework isolates and measures the strength and direction of the relationship between CLIL driven instructional practices and two primary dependent outcomes: the students' conceptual understanding of science

content and their academic use of English as a foreign language. As highlighted by Hernández-Sampieri and Mendoza (2018), the core utility of a correlational reach lies in its capacity to determine how a variable behaves based on its relationship with a corresponding variable, thereby offering predictive value and an empirical basis for targeted educational interventions. By examining how variables like scaffolding frequency or multi-modal visual tool usage correlate with rubric scores and test results, this dual approach allows the researcher not only to describe what occurs in the classroom but also to identify possible relationships between teaching strategies and learning outcomes within this specific institution.

3.4 SOURCES OF INFORMATION

This study uses both primary and secondary sources to ensure validity and reliability through data triangulation.

3.4.1 Primary Sources

Author	Institution or University	Country	Year
David Marsh	University of Jyväskylä	Finland	1994 / 2010
Darío Luis Banegas	University of Edinburgh	Argentina	2012 / 2022
Angel M. Y. Lin	Education University of Hong Kong	Hong Kong	2016 / 2024
Russell Cross	University of Melbourne	Australia	2014 / 2018
Fred Genesee	McGill University	Canada	2004 / 2016

Chart 1. Primary Sources **Source:** Self-Made

Primary sources are obtained directly from the participants and the classroom context. These include:

a) Rubrics, used to assess students' performance in both Science content and English language use.

b) Student surveys, which gather information about students' perceptions, motivation, and engagement with CLIL-based lessons.

c) Tests, designed to measure students' understanding of science concepts taught through English.

These instruments allow the collection of both qualitative and quantitative data.

3.4.2 Secondary Sources

Secondary sources provide theoretical and contextual support, including:

a) Academic literature on CLIL and EFL teaching

b) Institutional documents (school curriculum and guidelines)

c) National and international educational references

3.5 Sample Selection

The target population for this study consists of fifteen fourth-grade primary school students enrolled at Santa Rosa de Lima Primary School during the 2026 academic year. This sample operates within an intensive English as a Foreign Language (EFL) learning environment where Science content is delivered through English mediums. Because the absolute size of this target group is small and uniquely accessible to the investigator, this study adopts a census approach, meaning the final research sample is identical to the total available population. Demographic distribution within this fifteen-student sample comprises eight female and seven male participants, with ages ranging uniformly between nine and ten years old.

To address the practical realities of the school's structure, a non-probability convenience and purposive sampling technique was applied for participant selection. As Creswell and Creswell (2018) note, non-probability sampling is highly effective in

educational action research were intact, pre-existing classroom groups must be evaluated within their natural settings. The selected participants are uniquely suited for this inquiry because they are subject to an institutionally mandated curriculum that requires enrollment in the bilingual Science course as a core graduation requirement. Consequently, this sample is directly and consistently exposed to the daily operationalization of the Content and Language Integrated Learning (CLIL) approach, providing the precise experiential data necessary to fulfill the central research objectives of this study.

The sample is composed of the same fifteen fourth-grade students, as the group is small and accessible. There are eight girls and seven boys. They are between nine to ten years old.

These participants were selected because they are students in Santa Rosa de Lima Primary School. They have a specific curriculum that is designed by the principal and owner. Students have to take the Science course as part of the required subjects that the school offers. They have Science twice a week: Wednesday and Thursday. This sample selection is directly exposed to the implementation of the CLIL approach during the study period, making them highly relevant to the research objective.

3.6 TYPE OF SAMPLE

A non-probabilistic, intentional (**purposive**) sampling method was used (Campbell et al., 2020). Students were selected based on their availability and direct participation in the CLIL-based Science lessons, ensuring relevant and context-specific data. This strategy is highly appropriate when specific characteristics or criteria are required to meet the core research objectives (Campbell et al., 2020).

3.6.1 Techniques and Instruments to Collect Information

3.6.1.1 Implemented techniques

During the implementation of the CLIL approach in fourth-grade Science lessons at Santa Rosa de Lima School, a variety of active and student-centered methodologies are applied to promote both content and language learning. The are four Science per week using the *Phenomenal Science* textbook by Pearson as the primary resource. Instruction is carefully planned to integrate key CLIL principles such as linguistic and cognitive scaffolding, use of visual aids such as flashcards and posters, and contextualized language input. Strategies such as pre-teaching vocabulary using the vocabulary box that is introduced in the textbook, use of graphic organizers like thinking routines, mind maps Ven diagrams, guided reading activities, and structured questioning are consistently incorporated to support comprehension of scientific concepts while simultaneously strengthening students' English proficiency.

In addition, cooperative learning techniques are systematically implemented as part of the school's pedagogical approach. Students frequently engage in group work through strategies such as think-pair-share, collaborative problem-solving tasks, and project-based activities. These techniques encourage peer interaction, negotiation of meaning, and active participation in English, which are essential components of CLIL. Furthermore, the integration of hands-on activities and inquiry-based learning fosters critical thinking and allows students to apply scientific knowledge in meaningful contexts. This combination of CLIL strategies and cooperative learning not only enhances academic achievement but also promotes communication skills and student engagement throughout the learning process.

3.6.1.2 Instruments to Collect Information

Data collection is carried out using the following instruments:

a) Rubrics to evaluate students' performance in Science and English

The purpose of the rubric is to analyze students' development of English language skills, particularly vocabulary acquisition and reading comprehension, within the context of science lessons after implementing the CLIL approach. Stud
ents complete activities in English related to infectious diseases and pathogens. The rubric evaluates both their understanding of scientific content and their ability to use English to communicate ideas effectively (Annex 1).

b) Student surveys to gather perceptions and attitudes toward Science using the CLIL approach

The purpose of the survey is to identify students' attitudes, motivation, and engagement levels toward learning Science through English using the CLIL methodology (Annex 2).

c) Tests to measure understanding of Science content

The purpose of the test is to evaluate fourth-grade students' knowledge and comprehension of scientific concepts taught through the CLIL (Content and Language Integrated Learning) approach in English. This test provides evidence of students' learning outcomes and their level of understanding of the topics covered (Annex 3).

These instruments support a mixed-methods analysis, intentionally integrating qualitative performance criteria with quantitative metrics to provide a more comprehensive understanding of the pedagogical setting than any single dataset alone could offer (Creswell & Creswell, 2018). This multi-instrument framework allows the researcher to evaluate both learning outcomes and student experiences holistically.

3.7 VARIABLE CHART

General objective:

To determine the impact of implementing the CLIL approach in teaching Science using English as a Foreign Language in students from fourth grade at Santa Rosa de Lima Primary School located in Santo Tomás, Santo Domingo, Heredia during the first semester 2026.

Objectives	Variable	Conceptual Definition	Operational Definition	Observational Definition
To evaluate students' comprehension of scientific concepts taught through the CLIL approach in English.	Science comprehension	The ability to understand, interpret, and apply scientific concepts learned through instruction in a foreign language.	Measured through an achievement test designed to assess students' understanding of science content delivered using the CLIL approach.	Students' scores on the test, including number of correct answers, percentage results, and performance levels (e.g., low, medium, high).
To analyze students' development of English language skills particularly vocabulary and reading comprehension within the context of science lessons after implementing the CLIL approach.	English language skills (vocabulary and reading comprehension)	The ability of students to understand and use English effectively in academic contexts, specifically in terms of acquiring subject-related vocabulary and comprehending written texts related to scientific content.	Measured through language assessments focusing on vocabulary acquisition and reading comprehension tasks based on science content taught using the CLIL approach.	Students' scores on vocabulary quizzes, reading comprehension exercises, and performance in tasks such as identifying key terms, answering comprehension questions, and interpreting short science texts.
To identify students' attitudes and engagement levels toward learning	Students' attitudes and engagement	Students' perceptions, motivation, interest, and level of active participation in	Measured through surveys, observation checklists, and/or	Students' responses in Likert-scale questionnaires, frequency of participation in

Science through English using the CLIL methodology.		learning science content through a foreign language (English) under the CLIL approach.	questionnaires designed to assess students' attitudes, motivation, and participation during CLIL-based science lessons.	class activities, level of interaction during lessons, and observed behaviors such as attention, collaboration, and task involvement.

Chart 2. Variable Chart **Source:** Self-Made

CHAPTER IV

ANALYSIS AND INTERPRETATION OF DATA

4.1 ANALYSIS AND INTERPRETATION OF DATA

The analysis and interpretation of data aim is to determine the impact of implementing the CLIL approach in teaching Science using English as a Foreign Language in students from fourth grade at Santa Rosa de Lima Primary School located in Santo Tomás, Santo Domingo, Heredia during the first semester 2026. This chapter presents the results obtained from both quantitative and qualitative data sources, offering a comprehensive understanding of how the CLIL approach influenced Science lessons and influenced students' learning outcomes.

The collected information comes from a combination of primary sources for instance test, student surveys, rubric such as relevant literature and institutional documents. The data analysis process follows a systematic procedure to ensure the reliability, validity, and coherence of the findings.

4.2 Test Results

The results obtained from the test administered to fourth-grade students reveal a generally positive academic performance after the implementation of the CLIL approach in science lessons. As shown in the graphic, the majority of students achieved high scores, with four students obtaining a perfect score of 100, and several others scoring between 90 and 97. This indicates a strong understanding of the content taught through English.

A smaller group of students obtained intermediate scores ranging from 80 to 83, which suggests that while they have a basic understanding of the concepts, they may still require reinforcement in certain areas. Additionally, a few students scored between 67 and 70, reflecting some difficulties in content comprehension or language processing.

Overall, these results suggest that the CLIL approach had a positive impact on students' learning outcomes, as most students were able to understand and apply scientific concepts while using English as a foreign language. The high performance observed supports the idea that integrating content and language learning can enhance both academic achievement and language development. However, the variation in scores also highlights the need for differentiated instruction to support students with lower performance levels.

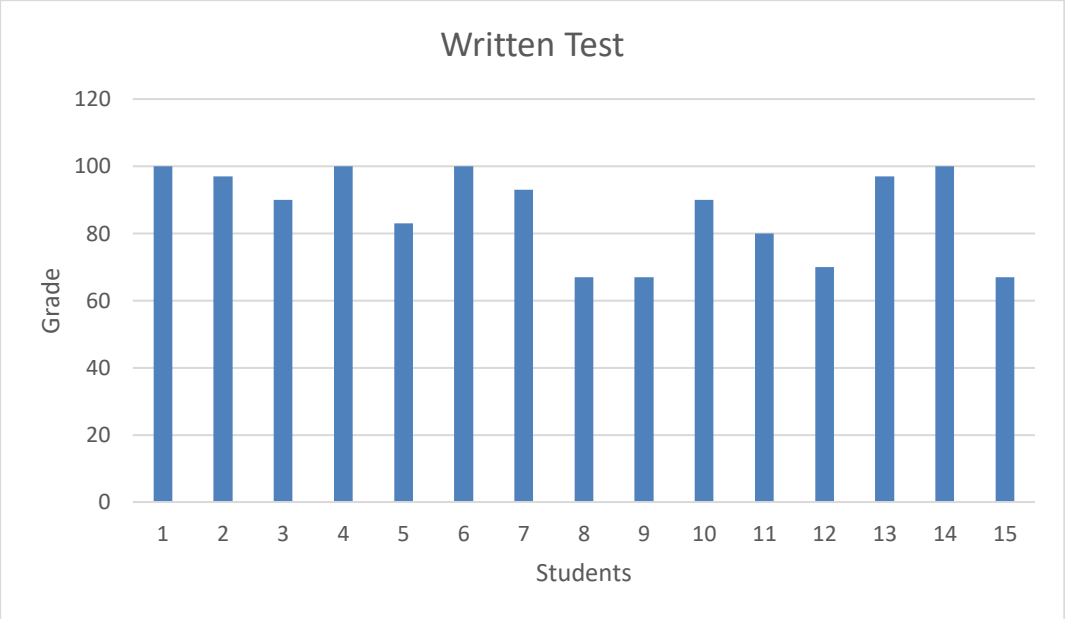

Figure 2. Test Results. **Source**: Self-made

Grade	*Quantity of Students*
100	4
97	2
90	2
93	1
67	3
83	1
80	1
70	1

Chart 3. Test Results **Source**: Self-made

4.2.1 Single Choice Analysis

Single choice items are assessment tasks in which students provide an answer by choosing the correct option from a set of alternatives. According to Haladyna and Rodriguez (2013), this type of item is widely used because it allows educators to measure a broad range of learning outcomes, from basic recall of information to higher-order thinking skills such as analysis and evaluation. Similarly, Nitko and Brookhart (2011) state that single choice items are effective for assessing both simple and complex cognitive processes when carefully designed. These items are typically composed of two main elements: the stem or base, which presents the problem or question, and a set of response options, including the correct answer and distractors. The clarity of the stem and the quality of the options are essential to ensure validity and reliability in measuring students' understanding.

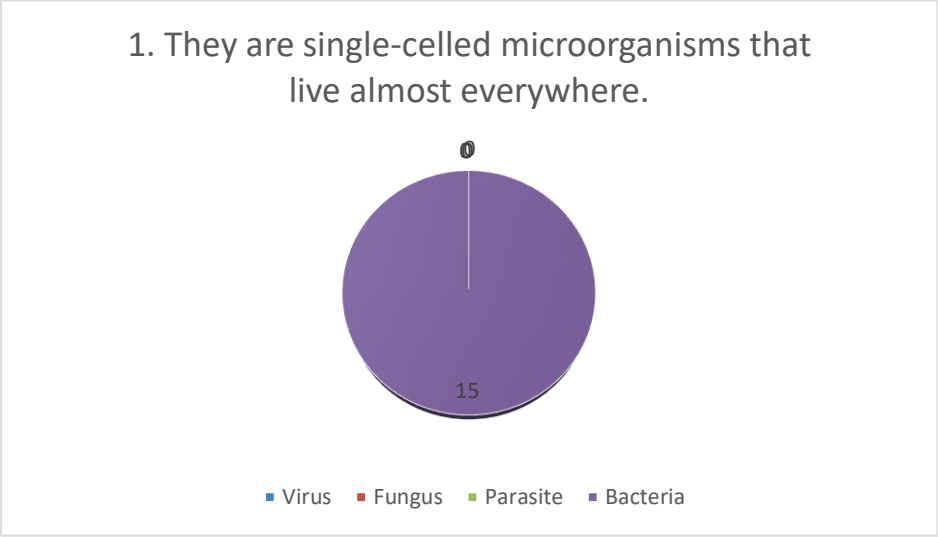

Figure 3. Test Single Choice Item 1. **Source**: Self-made

The graphic illustrates students' responses to the single choice question one related to bacteria definition. The majority of students selected the correct answer, representing all the percentage of the group. These findings reinforce the effectiveness of the CLIL approach, as all students were able to comprehend and respond accurately in a foreign language.

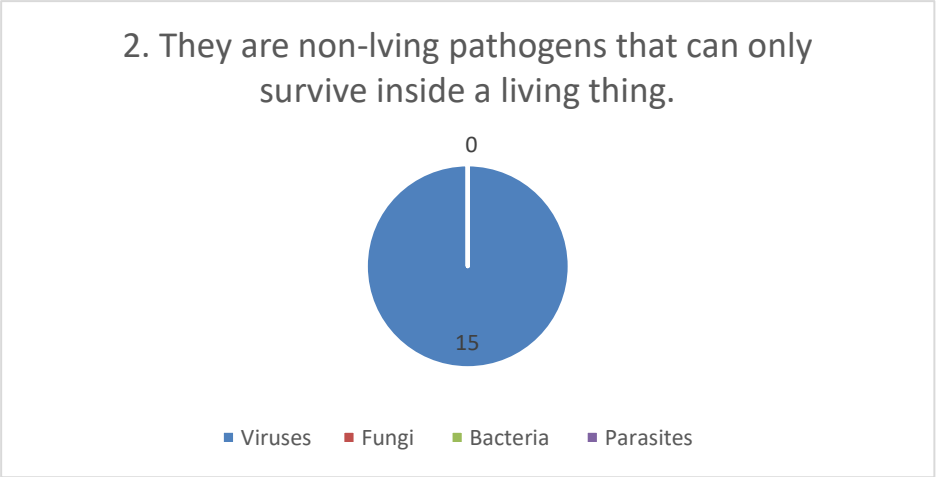

Figure 4. Test Single Choice Item 2. **Source**: Self-made

The graphic shows students' responses to single choice question two, which focused on the meaning of viruses. The results show that all students selected the correct answer, representing 100% of the group. This indicates that students have a clear understanding of the concept of viruses, as well as the ability to identify correct information presented in English.

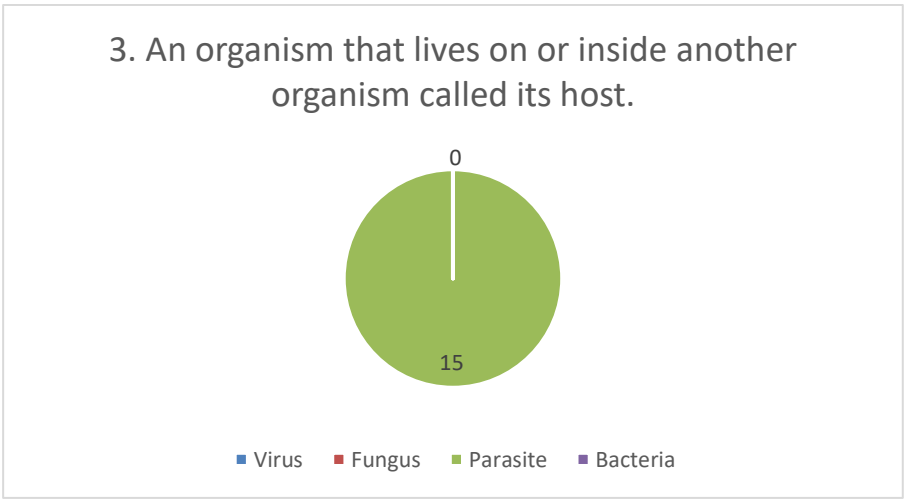

Figure 5. Test Single Choice Item 3. **Source**: Self-made

These findings shows that all students did is to answer the single choice question three related to parasite definition. Students were able to understand the scientific concept and accurately respond using a foreign language. The absence of incorrect answers also reflects a strong level of confidence and familiarity with the topic.

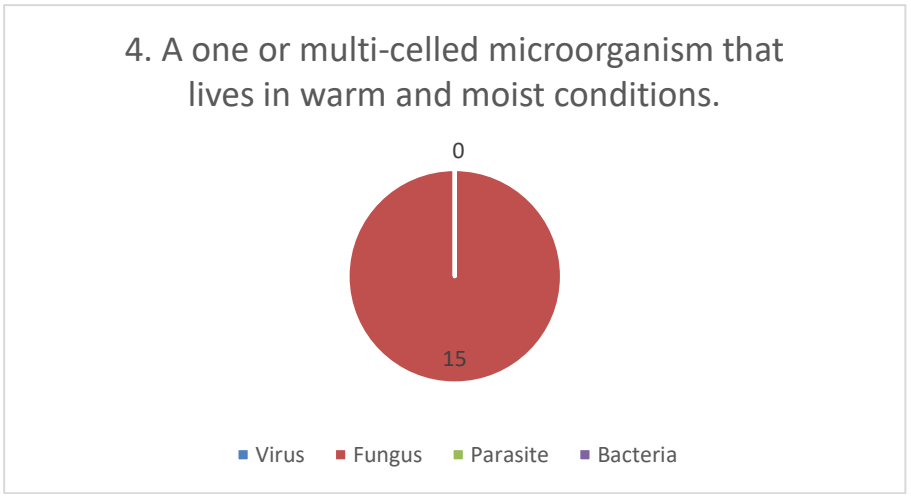

Figure 6. Test Single Choice Item 4. **Source**: Self-made

What the graphic shows is students' responses to the single choice question four related to fungus definition. The majority of students selected the correct answer, representing all percentage of the group. This suggests that most students successfully understood the concept presented during the CLIL-based lessons.

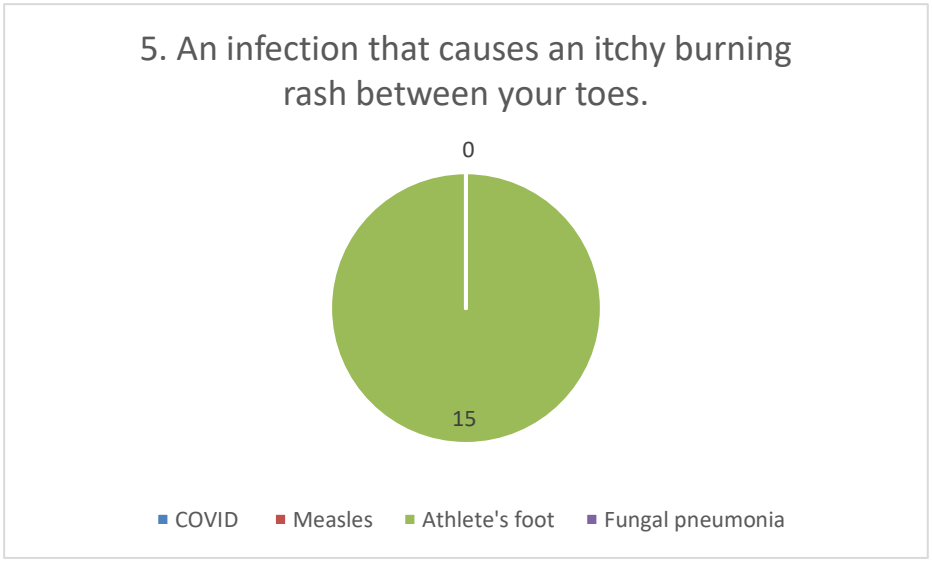

Figure 7. Test Single Choice Item 5. **Source**: Self-made

The figure presents the distribution of students' responses to the fifth single choice question, which addressed the concept of athlete's foot. The results reflect how students interpreted and applied their knowledge of this topic within the context of the lesson. This may be associated with the clarity of the instruction and the effectiveness of the activities used during the lesson.

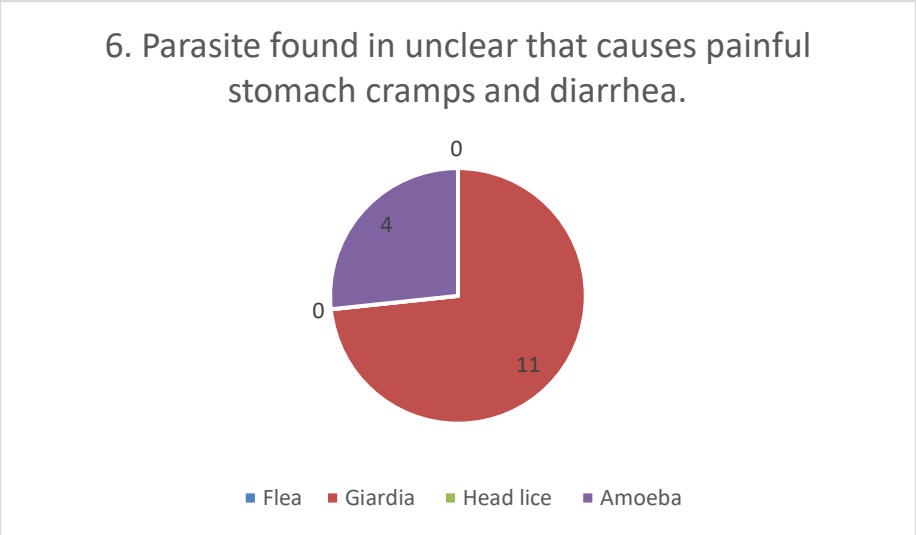

Figure 8. Test Single Choice Item 6. **Source**: Self-made

The graphic presents the results obtained from students' responses to the corresponding single choice question six. It provides an overview of how learners performed after the implementation of the CLIL approach during the Science lessons. The distribution of responses indicates that a significant portion of students selected the correct answer, demonstrating an appropriate level of understanding of the concept assessed. This suggests that students were able to comprehend the content presented in English and apply their knowledge effectively. At the same time, the presence of some incorrect responses reveals that not all students reached the same level of comprehension, which may be associated with difficulties in content understanding or language interpretation.

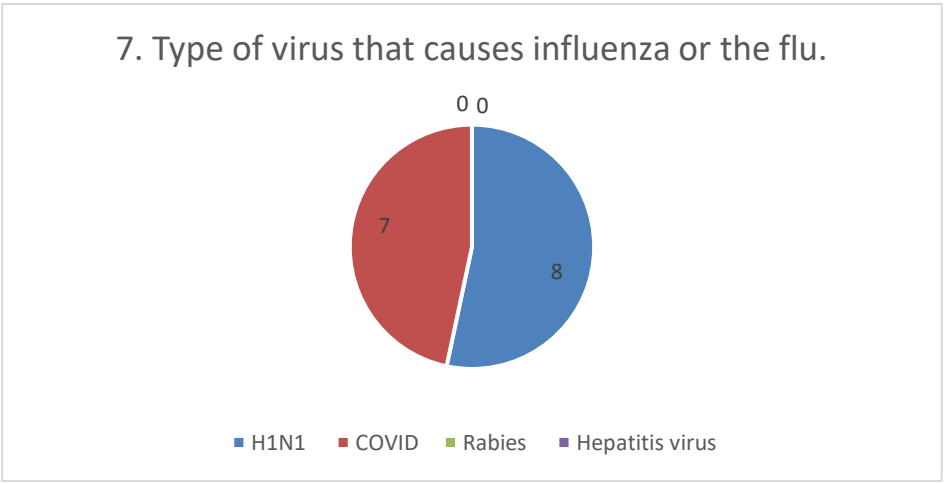

Figure 9. Test Single Choice Item 7. **Source**: Self-made

The response distribution about single choice question eight shows that most students were able to identify the correct answer, reflecting a satisfactory comprehension of the concept assessed. This outcome suggests that the integration of content and language supported students in processing scientific information in English. Nevertheless, a smaller proportion of incorrect responses indicates that some learners may still face challenges, either in grasping the content fully or in interpreting the question due to language limitations.

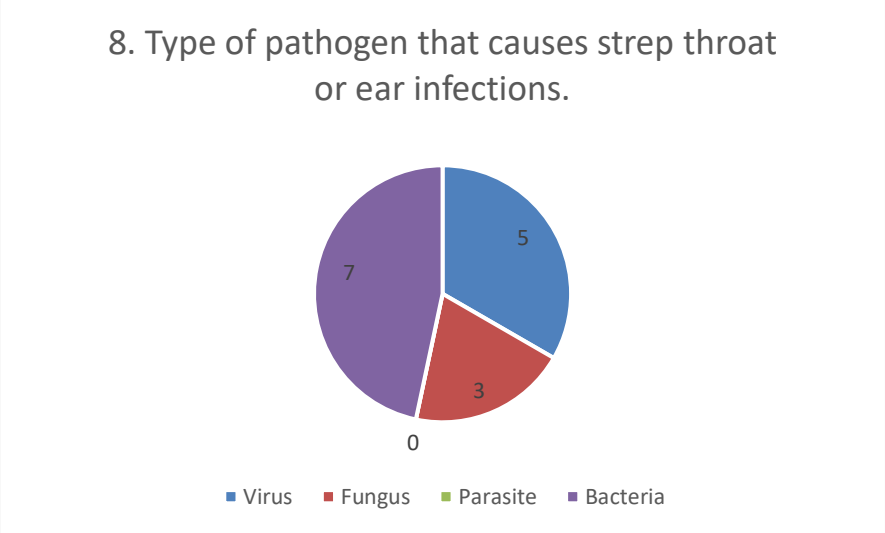

Figure 10. Test Single Choice Item 8. **Source**: Self-made

The graphic illustrates the overall distribution of students' responses to the corresponding single-choice question eight, reflecting their level of understanding after the implementation of the CLIL approach in science lessons. The results show that a majority of students selected the correct answer, indicating that learners were generally able to comprehend the scientific content and interpret it appropriately in English. Nevertheless, the existence of some incorrect responses suggests that a portion of the group encountered difficulties, which may be associated with limited vocabulary knowledge or partial understanding of the concept.

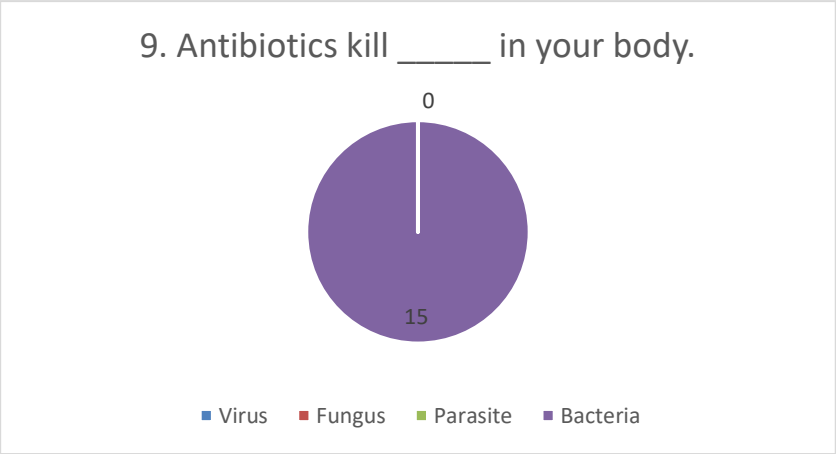

Figure 11. Test Single Choice Item 9. **Source**: Self-made

The graphic presents the results of question nine, which assesses students' understanding of the function of antibiotics in the human body. The data shows that all fifteen students selected "bacteria" as the correct answer, while none of the participants chose the other options (virus, fungus, or parasite). This indicates a 100% accuracy rate, demonstrating that the entire group has a clear and correct understanding that antibiotics are used to kill bacteria. These results suggest that the concept was effectively taught and successfully internalized by the students, likely supported by the CLIL approach, which integrates content and language learning. The absence of incorrect responses also reflects that students were able to comprehend both the scientific concept and the language used in the question without difficulty.

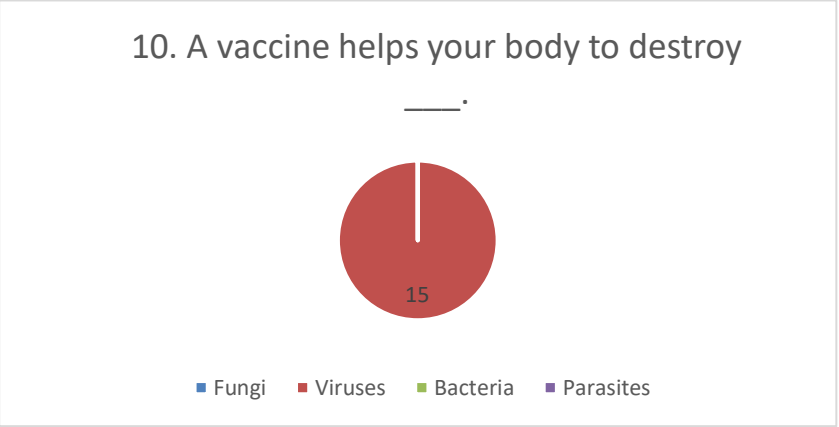

Figure 12. Test Single Choice Item 10. **Source**: Self-made

The graph shows the responses to the question ten. The results indicate a complete concentration of answers in the category “Viruses,” with all 15 responses selecting this option, while the other alternatives (fungi, bacteria, and parasites) received no selections. This suggests that students have a strong and consistent understanding that vaccines are associated with protection against viruses. The absence of alternative answers may also reflect successful instruction or reinforcement of this concept during the learning process. Overall, the data demonstrates a clear mastery of the targeted content related to the function of vaccines.

4.2.2 Matching Analysis

Matching items consist of two parallel columns, commonly referred to as premises or statements and responses, which contain related information. Students are required to establish the correct correspondence between the elements in both columns according to the criteria provided in the instructions. This type of assessment item is particularly useful for measuring learning at the initial levels of knowledge, especially the recognition of relationships, definitions, and associations between concepts. From a pedagogical perspective, matching items are effective because they allow teachers to assess a broad range of content in a relatively short time while reducing guessing compared to simple or multiple-choice formats. Additionally, they support the development of cognitive processes such as classification and association, which are fundamental for building foundational knowledge. According to Nitko and Brookhart (2011), matching items are especially appropriate for assessing students’ ability to identify connections between related concepts, making them a valuable tool in evaluating basic comprehension and recall in written tests.

4.2.2.1 Match Part A

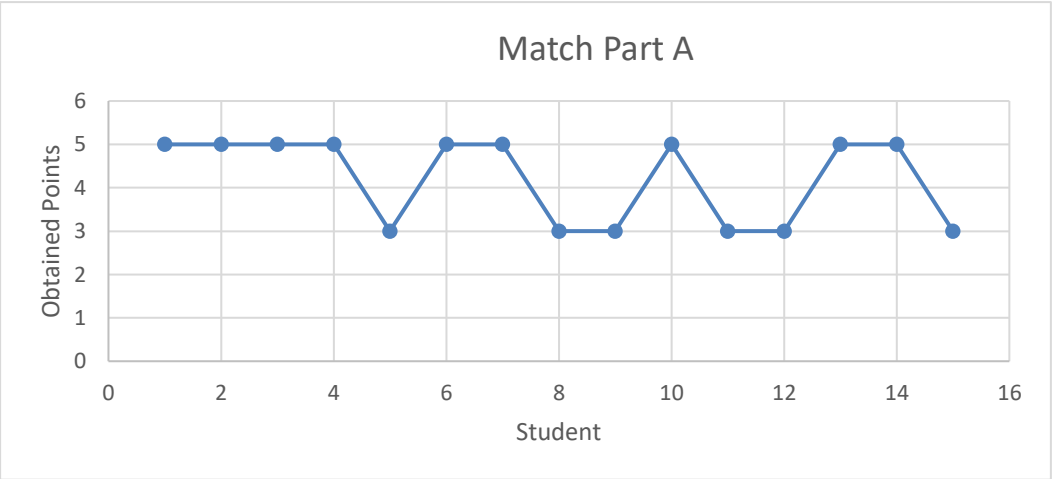

Figure 13. Match Part A Results. **Source**: Self-made

The results obtained in Part A of the matching activity show that most students were able to recognize key meanings related to infectious and non-infectious diseases, immune system, antibodies; however, six out of fifteen students lost two points each by incorrectly matching two items. This suggests that, although learners demonstrate a general understanding of basic scientific concepts, there are still difficulties in accurately associating specific terminology such as *pathogens*, *antibodies*, and *immune system* with their definitions. According to the CLIL approach, this may be explained by the dual cognitive and linguistic demand placed on learners, as they are required to process content knowledge while simultaneously interpreting it in a second language (Coyle et al., 2010). The errors may also indicate limited exposure to academic vocabulary and insufficient consolidation of meaning through contextualized practice due to reduce quantity of lessons for the subject.

4.2.2.2 Match Part B

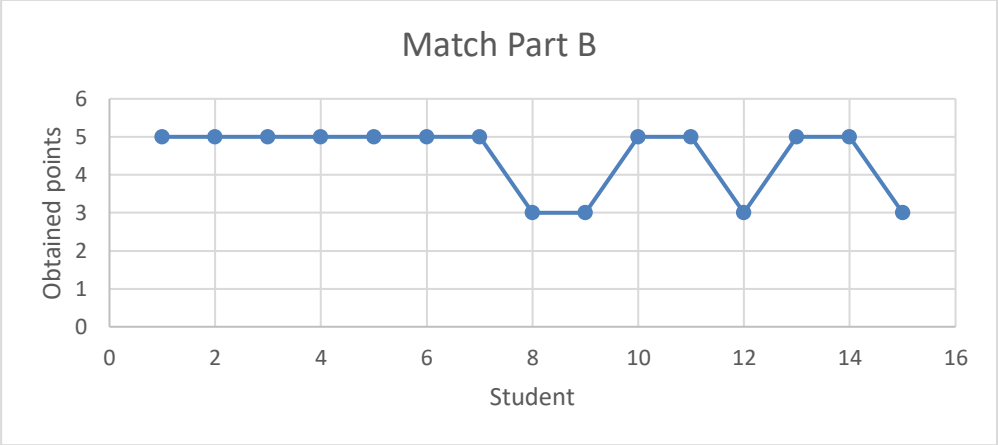

Figure 14. Match Part B Results. **Source**: Self-made

The results obtained in Match Part B indicate that the majority of students achieved high performance, with most of the 15 students obtaining the maximum score of 5 points. However, a small group of four students scored 3 points, showing difficulties in correctly matching some sentence halves. This suggests that while most learners successfully recognized relationships between causes and effects of diseases for instance malaria and mosquitoes, allergies and immune response, a minority experienced challenges in fully understanding or processing the linguistic structure of the sentences. From a CLIL perspective, this can be explained by the cognitive and linguistic demands involved in integrating content knowledge with language comprehension, particularly when students must interpret sentence meaning rather than isolated vocabulary. The errors may also be related to confusion between similar concepts such as transmission methods for example contaminated food versus infected person or limited exposure to complete sentence structures in English. Despite these difficulties, the overall high scores demonstrate that matching sentence halves is an effective strategy for reinforcing conceptual understanding and language development, as it promotes reading comprehension, logical association,

and meaningful learning. Consequently, the results confirm that this type of activity supports both scientific understanding and the acquisition of academic language, although additional scaffolding strategies such as sentence frames, visual aids, and guided practice may be necessary to support all learners.

4.2.3 Identification Analysis

Identification items are assessment tasks that require students to recognize, select, or identify the correct answer based on previously learned content. These items play a fundamental role in developing essential cognitive skills such as recognition, recall, classification, and discrimination between concepts. According to Nitko and Brookhart (2011), identification items are particularly effective for assessing foundational knowledge, as they allow learners to demonstrate their ability to distinguish correct information from incorrect alternatives. Additionally, Haladyna and Rodriguez (2013) highlight that well designed identification items can measure a range of learning outcomes, especially at the lower and intermediate levels of cognition, where students are expected to recognize relationships and meanings.

In the context of the CLIL approach, identification items are especially valuable because they promote the simultaneous development of content knowledge and language skills. As stated by Coyle, Hood, and Marsh (2010), CLIL is based on the integration of content, communication, cognition, and culture, where language is both the medium and the outcome of learning. Identification tasks support this process by requiring students to process Science vocabulary and meanings in the target language, thereby enhancing their ability to use language appropriately while learning new content. Furthermore, these items align with CLIL principles by encouraging learners to engage in cognitive processes such as understanding and recognizing

concepts while simultaneously developing academic language proficiency. The effectiveness of identification items within CLIL lies in their ability to scaffold learning, reduce linguistic overload, and facilitate meaningful connections between language and content, ultimately supporting more effective and integrated learning experiences.

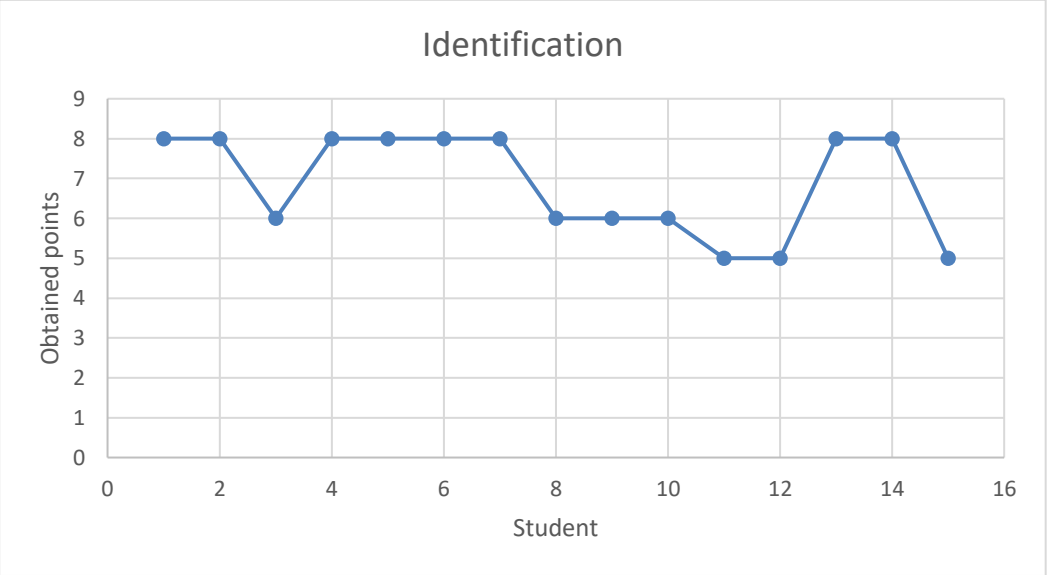

Figure 15. Identification Results. **Source**: Self-made

The results obtained in the identification section, where students were required to classify different types of infectious diseases (bacteria, viruses, parasites, and fungi), indicate an overall satisfactory level of understanding among the sample. Most students achieved scores between 6 and 8 points, suggesting that they were generally able to recognize and categorize the main characteristics of each type of pathogen. High performance in items such as needs a host to reproduce (virus) and can cause the common cold, measles, and chicken pox reflects a clear understanding of viral infections. However, lower scores observed in some students (5–6 points) may be associated with confusion between categories that share similar features, particularly between parasites and fungi, as seen in items like feeds on their

host and can live in warm, moist areas of your body. Additionally, statements such as can help your body absorb nutrients from food (bacteria) may have posed difficulty due to their less explicit association with disease, requiring deeper conceptual understanding rather than simple recall. From a CLIL perspective, these results suggest that while students have developed basic content knowledge, some errors may be linked to the linguistic complexity of the statements and the need to process scientific vocabulary in a second language. According to Nitko and Brookhart (2011), identification items effectively measure recognition and classification skills; however, their success depends on students' ability to clearly distinguish between related concepts.

4.2.4 Written Production Analysis

Written production tasks in assessments allow students to communicate their reasoning, demonstrate their ability to synthesize information, and propose solutions to different situations based on prompts such as a topic, question, hypothesis, statement, text, image, or real-life or fictional scenario. In this type of test, where students are required to explain, learners engage in deeper cognitive processes by organizing, selecting, and articulating their ideas in a coherent written form. According to Nitko and Brookhart (2011), constructed response items, including written explanations, are particularly effective for measuring complex learning outcomes because they require students to generate their own responses rather than selecting from given options. These tasks assess higher order thinking skills such as analysis, organization, and argumentation, as well as the ability to apply knowledge in meaningful contexts.

Furthermore, written production is highly valuable because it provides insight

into students' depth of understanding and their capacity to connect concepts. It also promotes critical thinking and allows teachers to evaluate not only what students know but how they structure and justify their ideas. Additionally, in the context of CLIL written explanation tasks are essential, as they foster the simultaneous development of content knowledge and academic language. As stated by Coyle, Hood, and Marsh (2010), CLIL emphasizes the integration of content, communication, cognition, and culture, where learners must use language effectively to construct and express knowledge. Therefore, written production tasks support learners in using language appropriately while learning, enhancing both subject comprehension and linguistic competence.

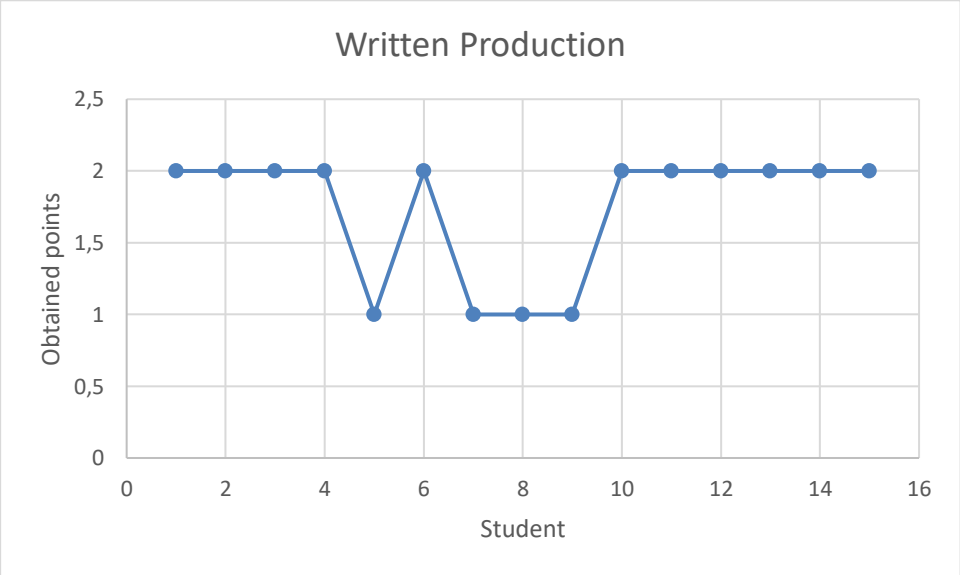

Figure 16. Written Production Results. **Source**: Self-made

The results presented in the Written Production graph indicate that the majority of students achieved the maximum score (2 out of 2 points), demonstrating a strong ability to explain two ways to maintain a healthy body using appropriate scientific concepts and complete sentences in English. This suggests that most learners successfully integrated content knowledge and language skills, which aligns with the objectives of the CLIL approach. However, a smaller proportion of students

obtained 1 point, reflecting partial achievement of the task. This may be attributed to difficulties in fully developing two ideas, limited use of academic vocabulary, or challenges in organizing written responses coherently. The variation observed in the middle of the distribution highlights differences in students' written expression and reasoning abilities. Overall, the findings reveal a high level of content understanding and written communication, while also indicating the need for continued reinforcement of writing skills, particularly in structuring explanations and using scientific language accurately.

4.3 Rubric Analysis

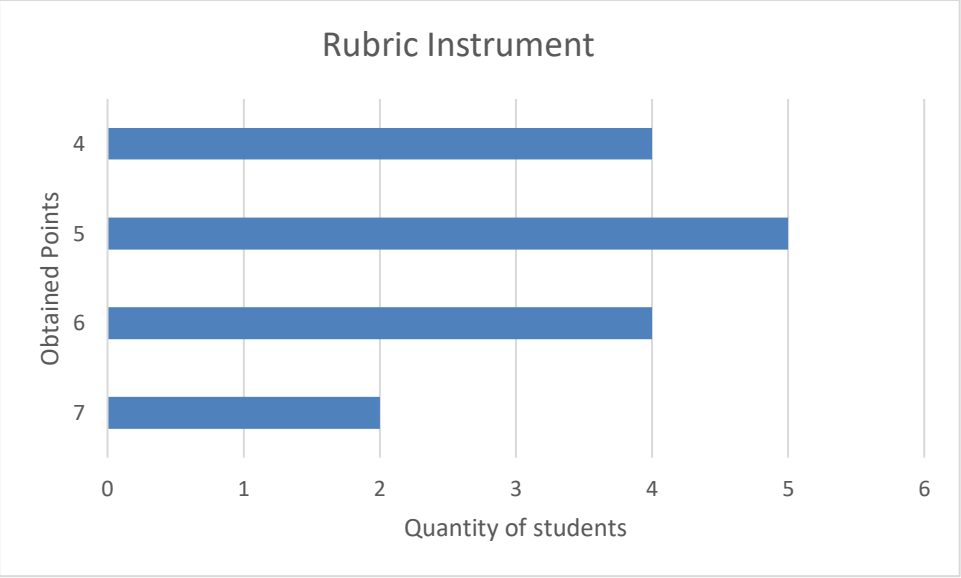

Figure 17. Rubric Results. **Source**: Self-made

The graph corresponding to the rubric instrument shows a distribution of scores between 4 and 7 points, with the majority of students concentrated between 5 and 6 points, and a smaller group achieving the maximum score of 7 points. This distribution indicates that most students reached a moderate to high level of performance in the evaluated criteria, particularly in vocabulary development and reading comprehension within the CLIL Science context. Students who obtained 6

and 7 points demonstrated a stronger ability to understand how infectious diseases spread, identify key information in texts, and use appropriate scientific vocabulary in English, aligning with higher proficiency levels described in CLIL. Meanwhile, those scoring 4 and 5 points showed partial mastery of the skills, reflecting progress in recognizing basic concepts and using English for simple communication, but still experiencing difficulties in deeper comprehension, accurate use of specialized (Tier 3) vocabulary, and coherent explanation of ideas. The absence of extremely low scores suggests that all students benefited from the CLIL approach to some extent. Overall, the results provide evidence that the implementation of CLIL had a positive impact on students' ability to integrate content and language, although continued support is necessary to help more learners reach advanced levels of performance, particularly in scientific communication and higher order reading skills. These findings are consistent with previous research indicating that CLIL enhances both content understanding and language development when meaningful contexts are provided (Coyle et al., 2010).

4.4 Survey Analysis

The qualitative analysis of the survey responses indicates a generally positive attitude among fourth grade students toward learning Science through English using the CLIL. Most students expressed feelings of happiness, pride, and increased confidence when using scientific vocabulary in English, suggesting that integrating language and content promotes both emotional engagement and linguistic development. This aligns with the principles of CLIL, which emphasize meaningful language use in authentic contexts, fostering both subject understanding and communication skills. Additionally, students perceived learning Science in English as

enjoyable and valuable, reflecting intrinsic motivation and a sense of relevance in their learning process. According to Coyle, Hood, and Marsh (2010), CLIL environments enhance learners' motivation by combining cognitive challenge with language acquisition, making learning more purposeful and engaging.

In terms of engagement and comprehension, students demonstrated a strong willingness to participate actively in classroom activities, even when facing linguistic challenges. Responses revealed persistence, curiosity, and interest in visual and textual materials, indicating that CLIL strategies effectively support inclusive participation and sustained attention. Moreover, students reported a good level of understanding of teacher explanations and main ideas in English, suggesting that scaffolding techniques and multimodal resources facilitate comprehension. These findings support the notion that CLIL not only develops content knowledge but also strengthens learners' ability to process information in a second language. As noted by Dalton-Puffer (2011), CLIL classrooms promote deeper cognitive processing and interaction, which contribute to both language proficiency and subject mastery, even at early educational stages.

4.4.1 Section A: How I feel about Science in English

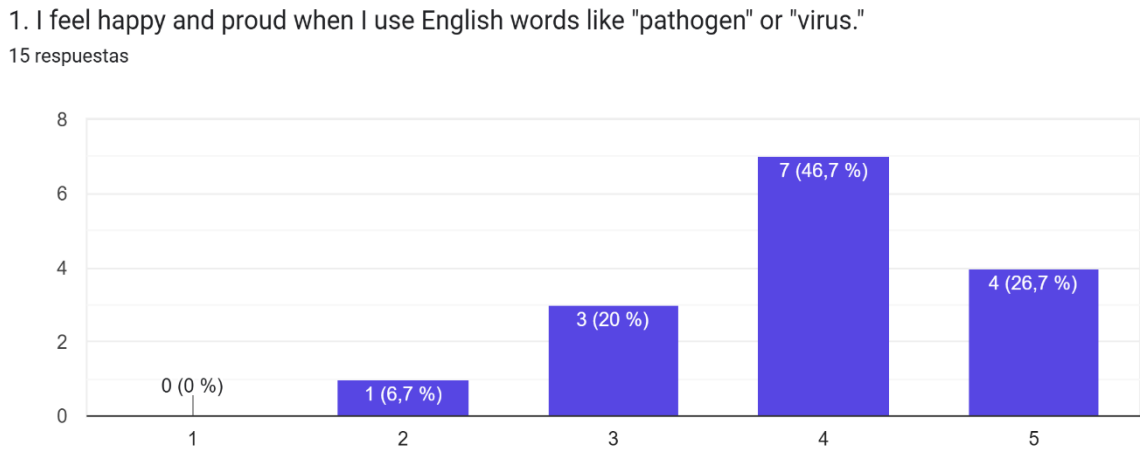

Figure 18. Survey Item 1. **Source**: Self-made

The analysis of the first survey item shows a clearly positive emotional response from students toward using English scientific vocabulary. From 15 answers, the majority selected high agreement levels: 46.7% chose option 4 “Yes!” and 26.7% selected option 5 “Totally!”, meaning that over 70% of the students feel happy and proud when they use scientific vocabulary in English. In addition, 20% of students indicated a neutral perception in option 3, while only 6.7% expressed a slightly negative feeling in option 2, and no students selected the lowest option. These results suggest that most learners are developing positive emotional connections with English as a medium for learning Science, which is essential for fostering confidence and willingness to communicate in a second language.

From a pedagogical perspective, these findings reflect the effectiveness of the CLIL approach in promoting both affective and linguistic development. The high levels of pride and enjoyment reported by students indicate that integrating content and language supports motivation and reduces anxiety when using a foreign language in academic contexts. This supports Coyle, Hood, and Marsh’s (2010) assertion that CLIL enhances learners’ self-confidence by creating meaningful opportunities to use language in real contexts. Moreover, the limited number of negative responses suggests that most students are successfully adapting to this methodology, benefiting from scaffolded instruction and exposure to academic vocabulary in English, which contributes to both language acquisition and content understanding.

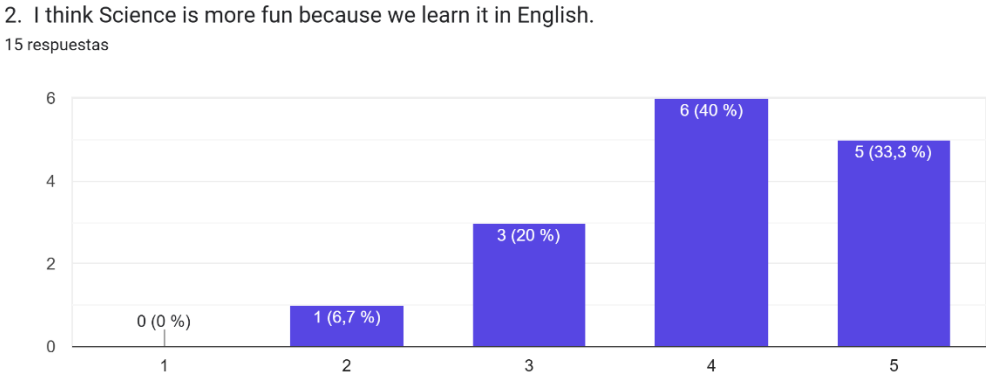

Figure 19. Survey Item 2. **Source**: Self-made

The analysis of the second survey item reveals a highly positive perception among students regarding the integration of English in Science lessons. From the total sample, 40% of students selected option 4 “Yes!” and 33.3% chose option 5 “Totally!”, indicating that nearly three-quarters of the group perceive Science more enjoyable when is taught in English. Additionally, 20% of students expressed a neutral opinion in option 3, while only 6.7% reported a slightly negative perception in option 2, and no students selected the lowest option. These results suggest that the CLIL approach contributes significantly to increasing students’ enjoyment and motivation in learning Science, as the use of a foreign language adds innovation and engagement to the lessons. This finding supports the idea that CLIL fosters positive attitudes toward learning by combining content and language in meaningful and stimulating ways (Coyle et al., 2010).

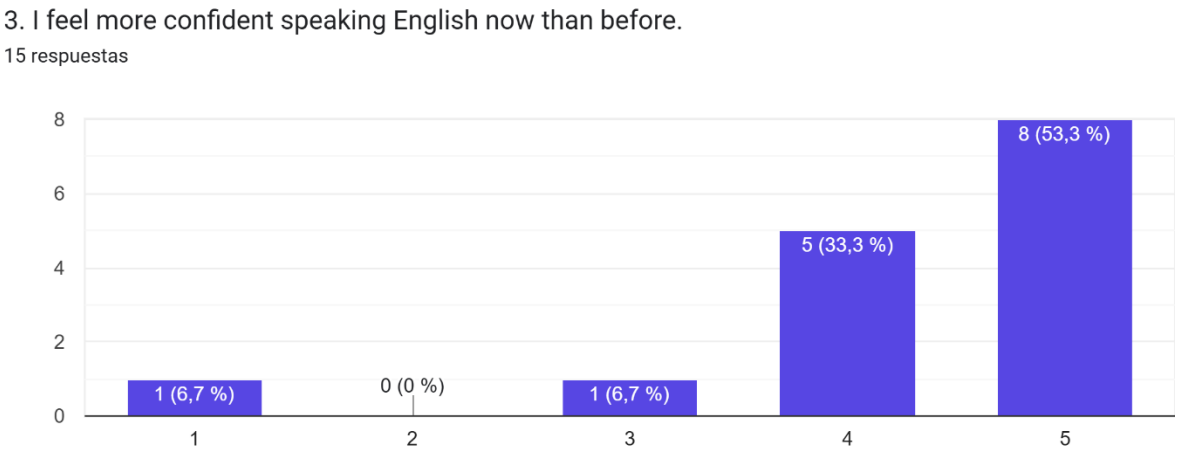

Figure 20. Survey Item 3. **Source**: Self-made

The analysis of the third survey item demonstrates a very strong increase in students' confidence when speaking English. From 15 responses, the majority selected the highest levels of agreement: 53.3% chose option 5 "Totally!" and 33.3% selected option 4 "Yes!", meaning that more than 86% of the students feel more confident using English compared to before. Only 6.7% of students indicated a neutral perception with option 3, while another 6.7% selected the lowest option 1, and no students chose option 2. These results suggest that the CLIL approach has had a highly positive impact on students' self-confidence in the use of the target language, likely due to continuous exposure to the language in meaningful and content-based contexts. This finding aligns with CLIL principles, which emphasize authentic communication and gradual language development, helping learners feel more secure and capable when expressing themselves in a second language (Coyle et al., 2010).

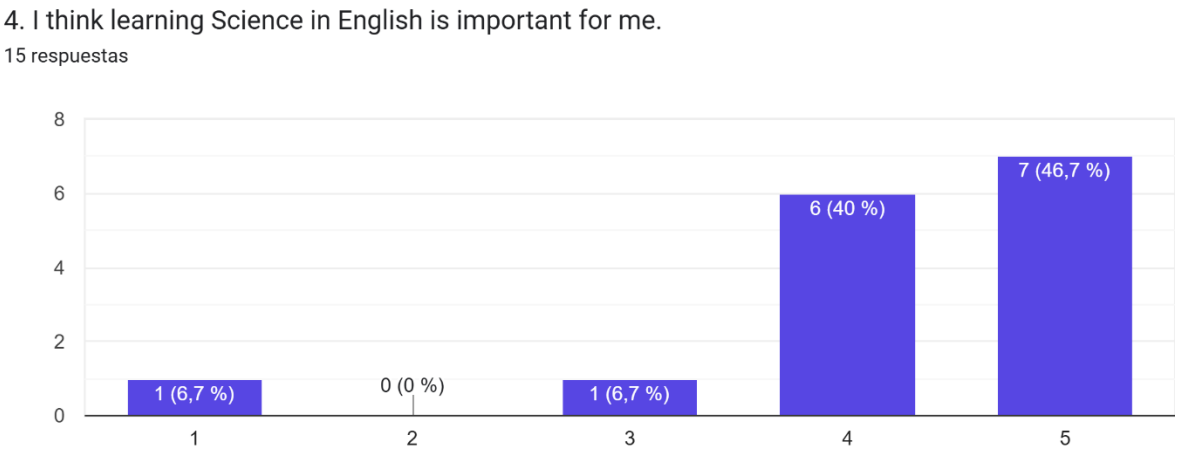

Figure 21. Survey Item 4. **Source**: Self-made

The analysis of the fourth survey item indicates that students strongly recognize the importance of learning Science in English. Out of 15 responses, 46.7% selected option 5 “Totally!” and 40% chose option 4 “Yes!”. It means that nearly 87% of the students perceive the importance for learning both Science and English. A small percentage 6.7% expressed a neutral opinion in option 3, while another 6.7% selected the lowest option, and no students chose option 2. These results demonstrate a high level of awareness among students regarding the value of integrating English into Science education, suggesting that they understand its relevance for their academic and future development. This aligns with CLIL principles, which emphasize the dual benefit of content and language learning, helping students see the practical importance of acquiring subject knowledge through a foreign language (Coyle et al., 2010).

4.4.2 Section B: My Work in Class

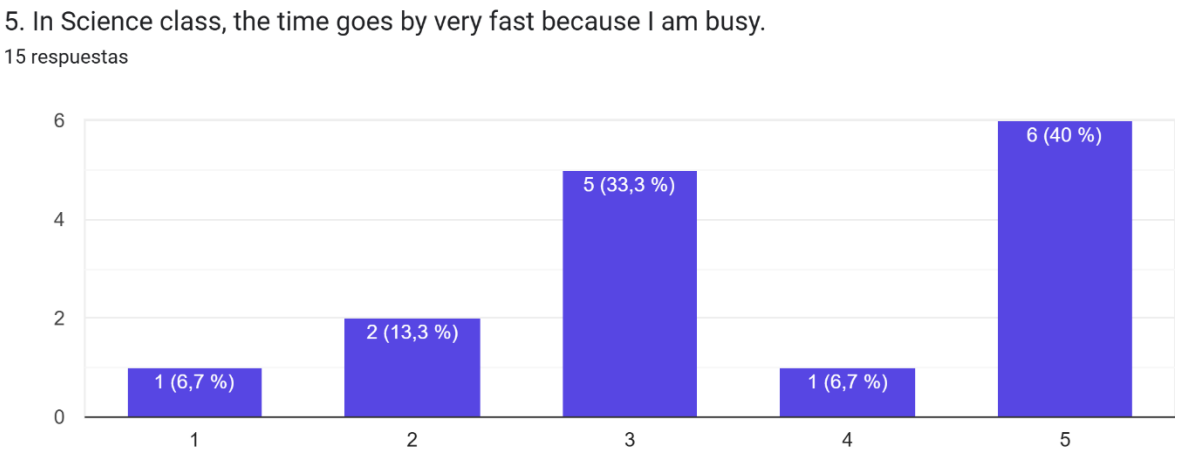

Figure 22. Survey Item 5. **Source**: Self-made

The analysis of the fifth survey item shows a generally positive level of student engagement during science lessons taught through English. From the total sample, 40% of students selected option 5 “Totally!” and 6.7% chose option 4 “Yes!”, indicating that nearly half of the group clearly perceives that time passes quickly because they are actively involved in class activities. Additionally, 33.3% of students selected the neutral option 3, suggesting that while they are somewhat engaged, their experience may vary depending on the task or level of difficulty. On the other hand, a smaller percentage expressed lower engagement, with 13.3% selecting option 2 and 6.7% option 1. This finding aligns with CLIL principles, which highlight the importance of meaningful, interactive, and cognitively engaging activities to sustain learners’ interest and involvement in the learning process (Coyle et al., 2010).

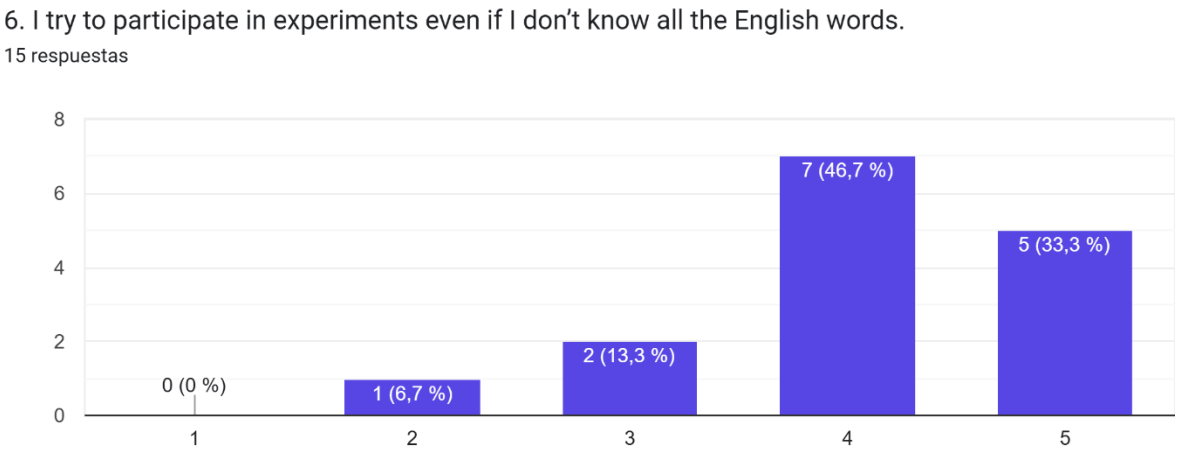

Figure 23. Survey Item 6. **Source**: Self-made

The data collected from item 6, indicates a highly positive trend regarding to student engagement and communicative confidence under the CLIL approach. From the total sample, a combined majority of 80% expressed a strong willingness to participate, with 46.7% selected option 4 “Yes!” and 33.3% chose option 5 “Totally!”. On the other hand, a minor fraction of the class demonstrated hesitation, with 13.3% selected the neutral option 3 and a mere 6.7% at rating 2. These results suggest that implementing CLIL in Science lessons fosters a supportive and low-anxiety learning environment. By shifting the focus to hands-on scientific experiments, students prioritize content participation and active learning over language barriers, demonstrating that their lack of complete English vocabulary does not strictly delay their willingness to engage in the academic activities.

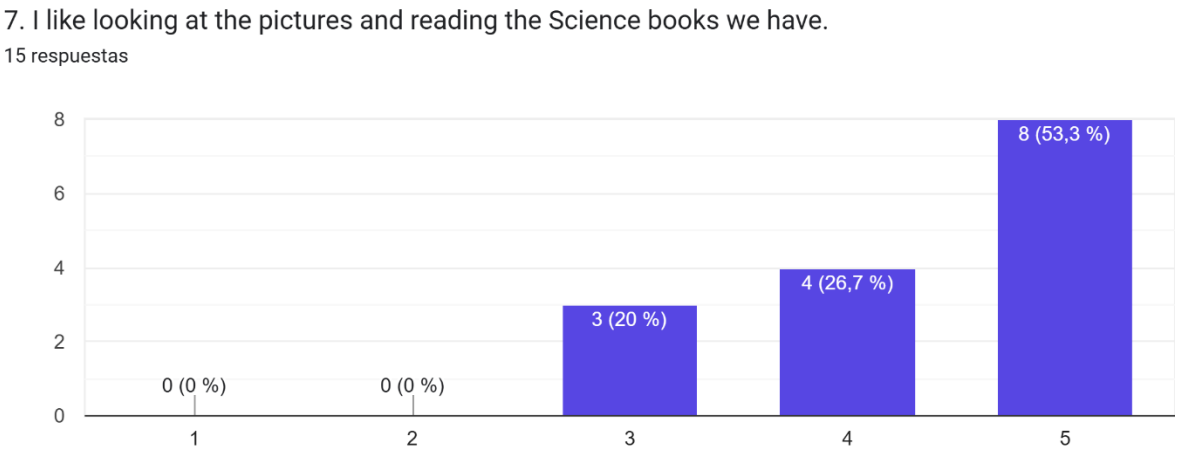

Figure 24. Survey Item 7. **Source**: Self-made

The provided graph illustrates responses from 15 participants regarding their interest in looking at pictures and reading available Science books. The data reveals a highly positive opinion overall, with 80% of answers expressing agreement or strong agreement 26.7% and 53.3%, respectively with the statement. On the other hand, a minor 20% of participants maintained a neutral stance, while 0% expressed any disagreement. These findings suggest a strong agreement among the surveyed individuals, indicating that the visual and textual elements of the science books serve as an engaging and well-received resource.

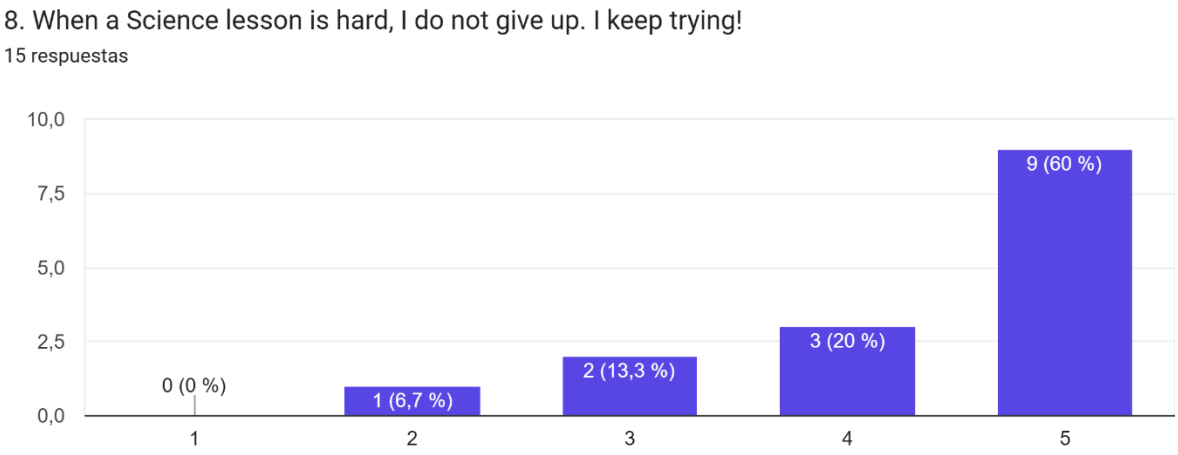

Figure 25. Survey Item 8. **Source**: Self-made

The graph illustrates the total answers from the sample regarding to their academic resilience when facing difficult Science lessons. The data demonstrates a highly positive tendency toward perseverance, with a significant majority of 80% of respondents agreeing or strongly agreeing 20% and 60%, respectively that they do not give up and keep trying when a lesson is hard. Meanwhile, 13.3% of participants maintained a neutral stance, and only a single respondent 6.7% indicated a lack of persistence by selecting rating 2, with 0% strongly disagreeing. Overall, these findings reveal a strong level of determination and a growth mindset among the majority of the surveyed students when encountering academic challenges in Science.

4.4.3 Section C: My Understanding in English (Comprehension & CLIL impact)

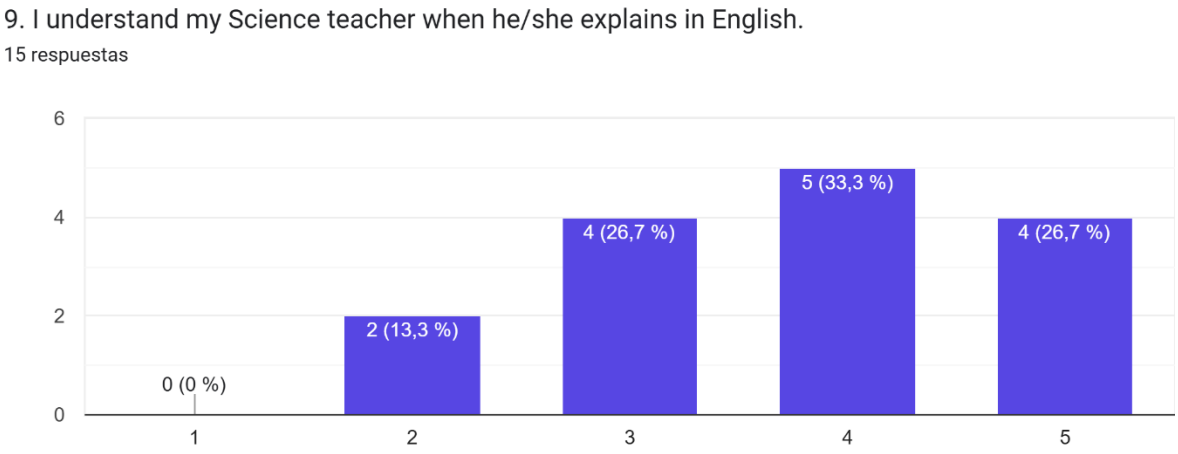

Figure 26. Survey Item 9. **Source**: Self-made

The graph details the feedback from 15 participants regarding their ability to comprehend oral explanations delivered in English during Science lessons. The data reveals that a solid majority of the sample, exactly 60% reported favorable levels of comprehension, with 33.3% agreeing and 26.7% strongly agreeing with the statement. Meanwhile, a portion of the group, representing 26.7% expressed a neutral perspective, and a minor segment consisting of 13.3% or 2 participants, acknowledged facing difficulties in following the teacher's language. Overall, these outcomes demonstrate that while English medium instruction is accessible and well-understood by most students, there is a remain fraction of the class that either finds the language demand neutral or struggles to fully process the explanations.

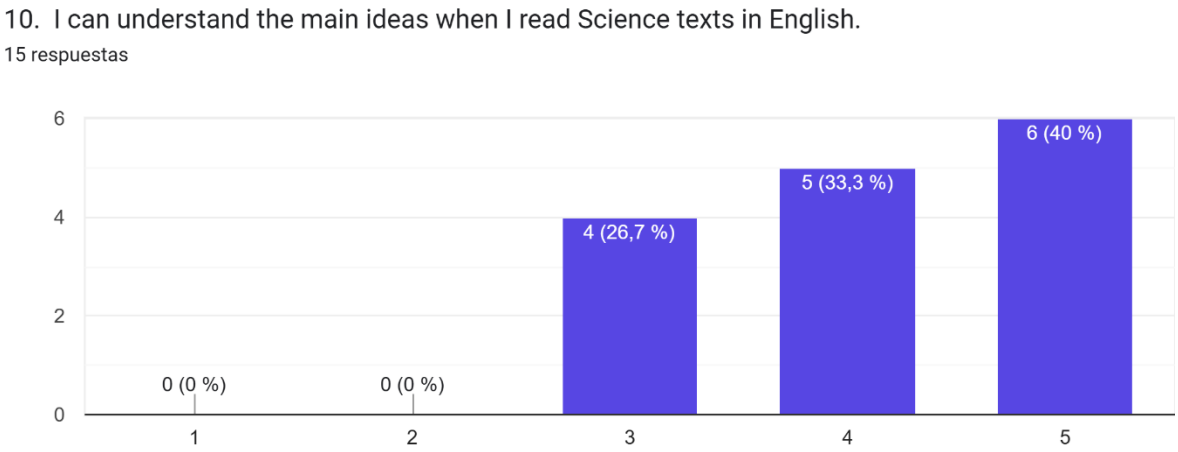

Figure 27. Survey Item 10. **Source**: Self-made

The displayed chart presents the feedback from the sample concerning to their ability to extract main ideas while reading English-medium Science texts. The findings indicate a highly positive self-assessment among the group, with a substantial 73.3% total agreement rate spanning those who agree 33.3% and strongly agree 40% with the statement. The remaining 26.7% of the sample adopted a neutral position, while notably, 0% reported any level of disagreement or difficulty. These results demonstrate a strong collective confidence in reading comprehension skills, suggesting that the vast majority of the surveyed individuals can successfully navigate and understand the core concepts of Science literature in a foreign language.

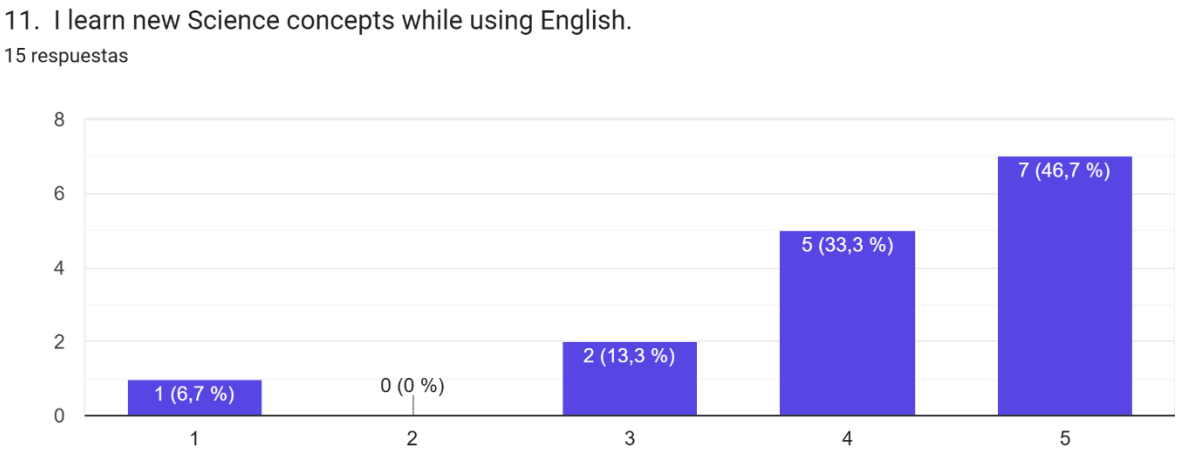

Figure 28. Survey Item 11. **Source**: Self-made

The analysis of the eleventh survey item indicates that students strongly recognize the outcomes of their learning process while using English. Out of the 15 responses, 46.7% selected option 5 “Totally!” and 33.3% chose option 4 “Yes!”. This means that 80% of the students perceive that they learn new scientific concepts through the target language. Additionally, 13.3% of the participants expressed a neutral opinion by selecting option 3, while 6.7% chose the lowest option; no students selected option 2.

These results demonstrate a high level of student awareness regarding the acquisition of new scientific knowledge through the integration of content and language, which aligns with the principles of the CLIL approach.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

5.1. CONCLUSIONS

In this chapter, the conclusions obtained from the analysis of the instruments applied to a sample of fourth grade students at Santa Rosa de Lima Primary School are presented. Additionally, observations related to the research problem, as well as the general and specific objectives, are discussed.

5.1.1 Regarding to the Problem Formulation

What is the impact of implementing the CLIL approach in teaching Science using English as a Foreign Language in students from fourth grade at Santa Rosa de Lima Primary School during the first semester 2026?

As stated at the beginning of the thesis, the study sought to determine the impact of implementing the CLIL approach in teaching Science using English as a Foreign Language in students from fourth grade at Santa Rosa de Lima Primary School during the first semester 2026.

Overall, by analyzing the compiled data, it can be seen that learners have a positive impact when engaging on new scientific content and vocabulary through the Content and Language Integrated Learning approach.

5.1.2 Regarding the General Objective

To determine the impact of implementing the CLIL approach in teaching Science using English as a Foreign Language in students from fourth grade at Santa Rosa de Lima Primary School located in Santo Tomás, Santo Domingo, Heredia during the first semester 2026.

Based on the analysis of the implementation of the CLIL approach in teaching Science through English as a target language to fourth grade students at Santa Rosa de Lima Primary School, the researcher concludes that this approach had a positive impact on the learning process. As evidenced by the findings, the integration of scientific content and the target language enabled learners to contextualize key concepts in a meaningful and task-oriented manner, which facilitated their internalization. Furthermore, the application of the CLIL approach supported language acquisition while simultaneously promoting the development of cognitive and academic skills. Therefore, it can be affirmed that the general objective of the study was successfully achieved.

5.1.3 Regarding the Specific Objectives

1. *To evaluate students' comprehension of scientific concepts taught through the CLIL approach in English.*
2. *To analyze students' development of English language skills particularly vocabulary and reading comprehension within the context of science lessons after implementing the CLIL approach.*
3. *To identify students' attitudes and engagement levels toward learning Science through English using the CLIL methodology.*

Regarding the first specific objective, which aimed to evaluate students' comprehension of scientific concepts taught through the CLIL approach in English, it can be concluded that learners were able to effectively understand and apply the content presented. The overall analysis indicates that students developed a solid comprehension of the scientific concepts while using the target language,

demonstrating that learning through CLIL supports both content acquisition and language use.

These outcomes can be attributed to the nature of the CLIL approach, which provides meaningful, contextualized, and task-oriented learning experiences. By integrating content and language, students are encouraged to actively engage with scientific concepts, facilitating their internalization and practical application. Therefore, it can be affirmed that the implementation of this approach contributed positively to students' learning process, successfully fulfilling the first specific objective.

In relation to the second specific objective, which aimed to analyze students' development of English language skills, particularly vocabulary and reading comprehension, within the context of science lessons after implementing the CLIL approach. It can be concluded that learners showed a positive progression in their language abilities. The overall results indicate that most students achieved a moderate to high level of performance, demonstrating an improved capacity to understand scientific texts and use relevant vocabulary in English within meaningful contexts.

These outcomes can be attributed to the CLIL approach, which promotes the integration of content and language through contextualized and purposeful learning experiences. Through this methodology, students were able to develop their reading comprehension skills while expanding their scientific vocabulary.

Finally, with respect to the third specific objective, which expected to identify students' attitudes and engagement levels toward learning Science through English using the CLIL methodology, it can be concluded that learners demonstrated a

positive disposition toward this approach. Additionally, students expressed feelings of satisfaction, confidence, and motivation when participating in science lessons conducted in English, valuing the opportunity to use the target language in meaningful and relevant contexts. This indicates that integrating content and language not only supports academic development but also fosters positive emotional responses toward learning.

Furthermore, students showed a high level of engagement throughout the learning process, actively participating in classroom activities and demonstrating interest in both visual and textual materials. Despite some linguistic challenges, learners exhibited persistence and willingness to interact, suggesting that the CLIL approach promotes inclusive participation and sustained attention. These findings confirm that the implementation of CLIL contributes to enhancing students' motivation, engagement, and overall learning experience, thereby successfully achieving the third specific objective.

5.2 Recommendations

Based on the results obtained and the impact of the implementation of the CLIL approach in teaching Science through English as a Foreign Language, the following recommendations are proposed for Santa Rosa de Lima Primary School and similar bilingual educational contexts:

a) It is recommended to continue strengthening the integration of content and language across the Science curriculum. Teachers should design lessons that explicitly connect scientific concepts with language objectives, allowing students to develop both areas simultaneously in a structured and meaningful way.

b) It is suggested that school administration provide ongoing professional development opportunities focused on CLIL methodology. Training in scaffolding strategies, use of visual aids, and differentiated instruction would support teachers in addressing diverse learners' needs within the classroom.

c) To enhance students' learning experience, it is recommended to incorporate more hands-on, experimental, and project based activities. During the implementation, students showed greater engagement when working with visual materials, experiments, and collaborative tasks, which facilitated both comprehension and language use.

d) It is advisable to reinforce the use of scientific vocabulary through continuous practice. Strategies such as word walls, graphic organizers, and guided reading activities can support students in retaining and accurately using key terms in English.

e) It is recommended to provide additional support for students who demonstrate difficulties in language processing or content comprehension. Differentiated activities, peer support, and the use of multimodal resources can help

ensure that all learners benefit from the CLIL approach.

f) Given the limited duration of the study, it is important to implement long term follow-up strategies to monitor students' progress in both content knowledge and language development. This would allow teachers to adjust instructional practices and ensure sustained learning over time.

g) Finally, it is suggested to extend the implementation of the CLIL approach to other levels within primary education. Starting from lower grades could foster early exposure to scientific vocabulary in English and support a more gradual and consistent development of language and content skills.

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ANNEXES

Annex 1: Student's Test

Written Test

Dear Participant,

A study entitled "*The Impact of Implementing the CLIL Approach in Teaching Science Using English as a Foreign Language*" is being conducted to explore how this dual-focused educational approach supports the development of English language skills. This research seeks to provide valuable insights for educators, school leaders, policymakers, and institutions within Costa Rica's private education system.

- **Purpose**

The purpose of this test is to evaluate fourth grade students' knowledge and comprehension of scientific concepts taught through the CLIL (Content and Language Integrated Learning) approach in English.

- **Participation**

You are going to take a test about your Science classes in English.
This test will help us understand what you have learned and how well you understand the topics.
Read each question carefully and choose the best answers.
Thank you for your effort!

- **Confidentiality**

All responses will remain anonymous. The information you provide will be treated with strict confidentiality and will be used solely for academic purposes.

- **Instructions**

a. Read the entire test carefully before beginning.
b. If you have any questions, ask them after reading the test.
c. Answer all questions in order, using clear handwriting and correct spelling.
d. Work independently, silently, and without looking at others' work.
e. Use only a blue or black pen.
f. Review your answers before submitting the test.

I. Single Choice. Value 10 points. (1 point each one).
Instructions: Write "X" in the correct answer.

1. They are **single-celled microorganisms** that live almost everywhere.

( ) Virus
( ) Fungus
( ) Parasite
( ) Bacteria

2. They are **non-living pathogens** that can **only survive** inside a living thing.

( ) Viruses
( ) Fungi
( ) Bacteria
( ) Parasites

3. An **organism that lives on or inside another organism** called its host.

( ) Virus
( ) Fungus
( ) Parasite
( ) Bacteria

4. A **one or multi-celled microorganism that lives in warm and moist conditions**.

( ) Virus
( ) Fungus
( ) Parasite
( ) Bacteria

5. An **infection that causes an itchy burning rash between your toes**.

( ) COVID
( ) Measles
( ) Athlete's foot
( ) Fungal pneumonia

6. Parasite found in unclear water that causes painful stomach cramps and diarrhea.

( ) Flea
( ) Giardia
( ) Head lice
( ) Amoeba

7. Type of **virus that causes influenza or the flu**.

( ) H1N1
( ) COVID
( ) Rabies
( ) Hepatitis virus

8. Type of **pathogen that causes strep throat or ear infections**.

( ) Virus
( ) Fungus
( ) Parasite
( ) Bacteria

9. Antibiotics kill _____ in your body.

( ) virus
( ) fungus
( ) parasite
( ) bacteria

10. A **vaccine helps your body to destroy** _____.

( ) fungi
( ) viruses
( ) bacteria
( ) parasites

II. Matching. Value 10 points. (1 point each one).
Part A.
Instructions: Match the statements in Column A with the correct word in Column B. (5 pts)

Column A		Column B
Scientific name for germs that cause infectious diseases.	( )	**1.** Infectious Diseases
Special molecules in your body that attack viruses.	( )	**2.** Non-infectious Diseases
They can be passed from one person to another or from animal contact or an insect bite.	( )	**3.** Immune System
It is made up of a network of cells, tissues and organs that work together to protect the body.	( )	**4.** Antibodies
They happen when our bodies start to work in an abnormal or unusual way.	( )	**5.** Pathogens

Part B.

Instructions: Match the sentences halves in Column A with the correct part Column B. (5 pts)

Column A		Column B
Malaria can be spread by	( )	**1.** the immune system reacting to allergens.
Allergies are caused by	( )	**2.** an infected person's sneeze.
Diabetes can be caused by	( )	**3.** contaminated food.
Colds can be spread by	( )	**4.** infected mosquitoes.
Salmonella can be spread by	( )	**5.** eating too much sugary food.

III. Identification. Value 8 points. (1 point each one).
Instructions: Classify different types of infectious diseases in the correct boxes. Write the number inside the corresponding box.

1. Can help your body absorb nutrients from food
2. Can cause athlete's foot
3. Fleas and head lice feed on blood
4. Can cause strep throat and ear infections
5. Feeds on their host
6. Can cause the common cold, measles, and chicken pox
7. They can live in warm, moist areas of your body
8. Needs a host to reproduce

Bacteria	Virus	Parasite	Fungi
_____	_____	_____	_____
_____	_____	_____	_____

IV. Written Production. Value 2 points (1 point each idea).
Instructions: Write your answers in complete sentences. Use English words from class.
Explain two ways to keep your body healthy using what you learned in Science class.

_____
_____
_____
_____

Annex 2: Student's Rubric

The impact of implementing the CLIL approach in teaching Science using English as a Foreign Language in students from fourth grade at Santa Rosa de Lima Primary School located in Santo Tomás, Santo Domingo, Heredia during the first semester 2026.

- **Purpose**

The purpose of this rubric is to analyze students' development of English language skills particularly vocabulary and reading comprehension within the context of Science lessons after implementing the CLIL approach.

- **Participation**

This rubric is applied in a fourth-grade Science class using the CLIL approach. Students complete activities in English related to infectious diseases and pathogens. The rubric evaluates both their understanding of Science content and their ability to use English to communicate their ideas.

- **Confidentiality**

All results will remain anonymous. The information will be treated with strict confidentiality and will be used solely for academic purposes.

- **Instructions**

1. Read the text, in pairs find out and circle examples of infectious diseases mentioned.
2. Circle the correct words to complete the paragraph.

Activity #1

HOW DO INFECTIOUS DISEASES SPREAD?

Person to Person.
Pathogens can pass from one person to another through touch, like when you kiss someone or shake their hand. However, some pathogens can spread without touching. When someone with a cold sneezes, the virus spreads into the air. Someone else may then breathe in that virus and be infected with the cold virus, too.

Food and Water
Some pathogens can live in food or water. You can get sick if you eat undercooked food, or food or water that has been contaminated. Salmonella bacteria is common in chicken. If you eat chicken that hasn't been cooked properly, you can get salmonellosis, which can cause vomiting and diarrhea.

Vectors
Some pathogens rely on insect carriers, such as mosquitoes, fleas, and ticks, to move from host to host. These carriers are known as vectors. Mosquitoes can carry the malaria parasite. If a mosquito carrying the malaria parasite bites you, it can transfer the parasite into your bloodstream. Once inside your body, it lives in your blood and attacks your red blood cells.

Contaminated Objects
Some pathogens can live outside a person's body and can infect another person who touches the object an infected person used. For example, if someone who has the flu uses your phone, you can pick up the germs they left behind. If you then touch your eyes, mouth, or nose before washing your hands, you may become infected, too.

Activity #2

1 Antibodies / Antibiotics are medicines that fight infections caused by **2 bacteria / viruses.** They do not work against infections from viruses, such as measles or **3 malaria / the flu**. To avoid getting a disease caused by a virus, doctors will inject you a(n) **4 vaccine / infection** that contain a **5 strong / weakened** form of virus. Once in your, your immune system begins to produce **6 antibodies / antigens** to fight off the pathogen. If the same virus attacks you again your immune **7 system / health** will recognize and destroy it before it makes you sick.

4th Grade CLIL Rubric: Diseases & Pathogens
Context: Science & English Integration

L1: mother tongue
Tier 3: domain specific

Criteria	**Novice (1)**	**Explorer (2)**	**Star Learner (3)**	**Science Expert (4)**
Science Words (Pathogens)	Uses "bugs" or "germs" for everything. Needs L1 to talk about being sick.	Can identify a virus or bacteria from a picture but mixes up the names.	Correctly uses terms like pathogen, infection, and microscope in class.	Accurately uses Tier 3 terms: Infectious vs. Non-infectious to classify diseases.
Reading: Disease Facts	Cannot find the name of a disease in a short text.	Can find the symptoms of a disease if the text has a picture of a sick person.	Identifies how a disease spreads (e.g., "by air" or "by water") from the reading.	Explains the difference between a cold (infectious) and diabetes (non-infectious) based on the text.
Reading: Clue Hunting	Does not recognize that a "sneeze" is a clue for a respiratory illness.	Uses a "word bank" or diagrams to understand new words like contagious.	Uses context to figure out if a disease in a text is infectious or not.	Connects text about prevention (hand washing/vaccines) to how pathogens travel.
Communicating Science	Says "I am sick" but cannot explain why using scientific words.	Can say simple facts: "Bacteria are living things" or "Virus only survive inside a host."	Uses full sentences to explain: "Infectious diseases pass from person to person."	Can give a short "Health Talk" explaining how to stop pathogens from spreading.

Annex 3: Student's Survey

The impact of implementing the CLIL approach in teaching Science using English as a Foreign Language in students from fourth grade at Santa Rosa de Lima Primary School located in Santo Tomás, Santo Domingo, Heredia during the first semester 2026.

- **Purpose**

The purpose of this survey is to identify students' attitudes and engagement levels toward learning Science through English using the CLIL methodology.

- **Participation**

You are invited to answer this survey because you are learning Science in English.
Your ideas and answers are very important to help us understand how students learn Science using English.
This will help teachers make classes better and more fun for everyone.
Thank you for sharing your thoughts!

- **Confidentiality**

All results will remain anonymous. The information will be treated with strict confidentiality and will be used solely for academic purposes.

- **Instructions**

1. Read each sentence carefully.
2. Circle the number that best shows how you feel.
3. There are no right or wrong answers.

My Science & English Survey (4th Grade)

Name: _____

Instructions: How do you feel about our Science lessons? Circle the face that matches your feeling!

1	2	3	4	5
				
No!	**A little bit**	**Maybe**	**Yes!**	**Totally!**

Section A: How I feel about Science in English

1. I feel **happy and proud** when I use English words like "pathogen" or "virus." **(1 2 3 4 5)**
2. I think Science is **more fun** because we learn it in English. **(1 2 3 4 5)**
3. I feel **more confident** speaking English now than before. **(1 2 3 4 5)**
4. I think learning Science in English is **important** for me. **(1 2 3 4 5)**

Section B: My Work in Class (Engagement)

5. In Science class, the time goes by **very fast** because I am busy. **(1 2 3 4 5)**
6. I **try to participate** in experiments even if I don't know all the English words. **(1 2 3 4 5)**
7. I **like looking at the pictures and reading** the Science books we have. **(1 2 3 4 5)**
8. When a Science lesson is hard, **I do not give up.** I keep trying! **(1 2 3 4 5)**

Section C: My Understanding in English (Comprehension & CLIL impact)

9. I **understand my Science teacher** when he/she explains in English. **(1 2 3 4 5)**
10. I can **understand the main ideas** when I read Science texts in English. **(1 2 3 4 5)**
11. I **learn new Science concepts** while using English. **(1 2 3 4 5)**

Annex 4: Authorization letter from Santa Rosa de Lima School

Centro Educativo Santa Rosa de Lima
Razón Social: CAMPO HERMOSO S.A.
Cédula Jurídica 3-101-431930
Santo Tomás, Santo Domingo de Heredia
Tel: 2244-8719

Santo Tomás, Santo Domingo de Heredia
22 de octubre del 2025

Señores
Universidad Hispanoamericana
Presente

Estimados señores:

Yo, Kattia León Villalobos, número de identificación 107500460, directora del Centro Educativo Santa Rosa de Lima, por este medio autorizo el presente permiso a la docente de Enseñanza del Inglés, señora **Xinia Acuña Solís**, cédula de identidad **205650811**, para realizar su investigación de Trabajo Final de Graduación en nuestra institución.

Dicha investigación se llevará a cabo durante el periodo 2025-2026 y contará con la participación de una muestra de estudiantes de **tercer grado**, con el objetivo de analizar el impacto de la implementación del enfoque **CLIL** en la asignatura de **Science**.

Se autoriza el uso de la información exclusivamente con fines académicos y garantizando la confidencialidad de los datos de los estudiantes involucrados.

MSc. Kattia León Villalobos
Directora

CENTRO EDUCATIVO BILINGÜE SANTA ROSA DE LIMA