

**Ecoliteracy in the EFL Classroom: A Didactic Proposal for Public-School Ninth  
Graders in Bucaramanga**

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**Abstract**

**Title:** Ecoliteracy in the EFL Classroom: A Didactic Proposal for Public-School Ninth Graders in Bucaramanga\*

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**Description:**

This study aimed to design and implement a didactic proposal that integrated Ecoliteracy into the teaching of English as a Foreign Language (EFL) for a group of 9th grade students in a public institution in Bucaramanga. This action research used a mixed-method design that combined an interpretive and descriptive approach. Data were gathered through classroom observations, semi-structured interviews to four teachers, and a survey administered to 24 students; and later analyzed through coding, statistical analysis, and triangulation. Findings revealed that teachers relied on specific tools and strategies to promote Ecoliteracy, emphasizing the relevance of contextualized and local examples. Transversality emerged as essential in generating student engagement and affection toward the environment, particularly through outdoor activities. Subsequently, after the knowledge and affection, students displayed environmentally responsible behaviors, although often dependent on teacher supervision. Nevertheless, challenges such as limited resources, insufficient materials and class constraints were identified as significant limitations. This study offers a Colombian perspective on integrating Ecoliteracy into EFL, and provides valuable insights for future teachers across disciplines interested in fostering Ecoliteracy in the local educational context, where little research on this subject currently exists.

**Keywords:** Ecoliteracy, English as a Foreign Language (EFL), environmental education, transversality.

\*Bachelor Thesis

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## Resumen

**Título:** Ecoalfabetización en el aula de inglés como lengua extranjera: una propuesta didáctica para alumnos de noveno grado de escuela pública en Bucaramanga

**Autores:** Julian Manuel Colmenares Figueroa and Estefania Pabón Velandia

### Descripción:

El objetivo de este estudio fue diseñar e implementar una propuesta didáctica que integrara la ecoalfabetización en la enseñanza del inglés como lengua extranjera (EFL) con estudiantes de noveno grado de una institución pública en Bucaramanga. Esta investigación-acción utilizó un diseño de método mixto que combinó un enfoque interpretativo y descriptivo. Los datos se recopilaron a través de cuadrículas de observación, entrevistas a cuatro profesores y una encuesta realizada a 24 estudiantes, posteriormente se analizaron mediante codificación, análisis estadístico y triangulación. Los resultados revelaron las herramientas y estrategias que los profesores utilizaban para promover la ecoalfabetización, destacando la relevancia de los ejemplos locales. La transversalidad fue clave para fomentar el afecto ambiental, especialmente mediante actividades al aire libre. Tras adquirir conocimientos y afecto, los estudiantes mostraron comportamientos responsables hacia el medio ambiente, aunque a menudo dependían de la supervisión del profesor. Finalmente, se identificaron retos como falta de recursos, materiales y tiempo. Este estudio ofrece una visión colombiana sobre la Ecoalfabetización en el aprendizaje del inglés, y aporta información valiosa para futuros profesores interesados en fomentarla en el contexto educativo local, donde actualmente existen pocos estudios sobre este tema.

**Palabras clave:** Ecoalfabetización, Inglés como Lengua Extranjera (EFL), alfabetización ecológica, transversalidad.

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## **Introduction**

### **1. Problem context**

As students and citizens of this world, we are aware of our current world situation, we have been able to realize such things as climate change, pollution, the spread of new diseases and mainly how the impact of human beings on the environment is getting bigger and worse; even more nowadays, where warnings from scientists, activists, and world organizations leave no doubt about the potential catastrophic environmental consequences in the near future. At the same time, various ideas are emerging and being explored to generate change; Ecoliteracy is one of them. The importance of Ecoliteracy lies in its main objective which is to generate change. In fact, behavior change refers to any different path that a student follows after receiving Ecoliteracy. Moreover, this change is measured in terms of "environmental knowledge, affection and responsible behavior" (Erdogan, 2011. p.2233). For there to be a different behavior there must be prior knowledge and affection for the environment. Although teachers do not bear full responsibility for this problem, they are undoubtedly potential vectors for social and environmental change. In this context, Ecoliteracy intervenes as a model to be implemented in the classroom. Specifically, Ecoliteracy is defined by Capra (1997), as a set of principles—such as the relationships, interactions, and patterns—for organizing ecosystems to be applied in the creation of sustainable societies and communities (p.297). It is a tool that helps teachers to develop environmental awareness and strengthen empathy in their students, acting as agents of change and replicating this knowledge through generations.

We, as future English teachers, strongly believe that our labor as educators in the world goes beyond the four walls of a classroom, especially considering the role of English in

modern societies. Consequently, we need to be focused on providing an integral formation to the beings of tomorrow directing them towards one of the issues that is booming nowadays as it is attending to a global citizenship education.

Therefore, it is necessary that the language teaching programs adequately train all teaching staff, not only with the language (regarding English teachers), but also in the various areas covered by transversal projects, including the socio-cultural area as well. It is important that the Ministry of Education, universities, schools and institutions, constantly get involved in the educational reality in order to avoid static and outdated content being perpetuated for years, failing to address the demands of a world that is constantly changing. According to UNESCO (2014) “Global citizenship education takes ‘a multifaceted approach, employing concepts and methodologies already applied in other areas, including human rights education, peace education, education for sustainable development and education for international understanding’ and aims to advance their common objectives.” (UNESCO, 2014, p.46, cited by UNESCO, 2015). This approach must be developed through the different educational institutions in the country.

It is essential to point out that in order to successfully achieve that global citizenship consciousness, it is crucial for teachers to promote, support and work simultaneously with all the different environmental and transversal projects existing in the school institutions in the country. According to the General Law of Education of 1994, article 14: (*own translation*) all private and public educational establishments that offer formal education at the levels of preschool, basic and secondary education, are obliged to comply with Transversal Pedagogical projects in: 1) use of free time, 2) the study and practice of the constitution, 3) the teaching of environmental protection, 4) education for justice and peace and 5) sexual education. Likewise, this knowledge is required to be incorporated into the curriculum and

developed throughout the entire study plan in correlation with all the subjects making an exception with numerals 1 and 2, since those already have subjects suggested to be taught.

As mentioned before, the execution of these projects is mandatory for any formal institution. Essentially, these projects and their respective plans are intended to be reported to the corresponding Ministry of Education for funding; however, this is not how things actually happen in practice. A failure is evident both in the educational system and the state itself, not only in economic terms but also in addressing the core issue: the implementation of environmental themes; mainly, because in the long run this knowledge is not properly reflected in a transversal way. If it is taught, it will be in limited contexts, with specific subjects and even for a specific period of time (assuming the teaching of topics by periods coupling to the suggested curriculum provided by the Ministry of National Education) then, the intention itself of what is called transversality is lost from the first moment since the disjoin between the environment and education is reflected in the students, when the knowledge goes unnoticed or when they see it with reluctance. This occurs because there is no relationship that truly links their lives and the real environment that surrounds them with those themes.

Following the ideas previously mentioned, nowadays teachers are trying to form responsive and awake human beings through implementing different activities in their classes. We as teachers in formation are responsible to keep improving those strategies, aspiring to continue that chain of helping and enhancing future generations of teachers and future generations of citizens. In that sense, this research takes importance since it gives a broad theoretical background and a didactic proposal for teachers that would like to implement Ecoliteracy in an EFL context but are not sure about how to make it part of their

classes or just do not know how to do so. Also, provide the community an overview of what Ecoliteracy is and how they can implement it in a significant way for their lives.

### **1.1 Research Question**

The research question that guides this study is the following: How to implement Ecoliteracy in an EFL classroom of ninth graders from a public school institution in Bucaramanga?

## **2. Justification**

English classes have been used to teach a variety of topics while learning a foreign language itself. Students can develop and learn different contents using English as a tool. During the review of the literature we found that there is a lack of studies that related EFL classrooms with the protection of the environment in Colombia, hence we believe that this study is pertinent and necessary in order to explore a gap that must be fulfilled.

Consequently, for this research we decided to create a didactic proposal in which transversality between a Foreign Language, in this case English and the environment became evident. These two cross axes promote the importance of innovation while designing and applying the curricula in schools, which is key since they are usually treated as if they have no relation; and with that, the only thing that arises are gaps in education. Having said that, what we are seeking to achieve with this study as future teachers is helping other colleagues to recognize the usefulness and importance of implementing Ecoliteracy in their classes as well as reconsidering and re-evaluating their techniques, methods and even the knowledge they are imparting, working hand in hand with the curricula dictated by the government. All this, aiming to build a true environmental awareness; mainly in secondary school, since at

this point is when young people are increasingly eager and impatient to establish value relationships with the environment that surrounds them.

Orr (1992) states that education is the most powerful mechanism for addressing the world's environmental challenges. For this reason, we have to see education not only as a process of transmission of knowledge, but also as a tool to generate positive changes. In addition to wanting and trying to help educators see that importance, we also want to show them how other teachers are applying Ecoliteracy in their classrooms, so they could know what is happening in various classrooms around the world, in different cultures and in different contexts in terms of Ecoliteracy. And perhaps, they will be able to choose the one that best suits the context of their students. Finally, we do this, hoping that our study becomes an opening for future researchers to delve into this topic and analyze the Ecoliteracy practices that are being implemented (or not) by themselves or their teachers, and that the ones who decide to dive into this topic, understand that information does not exist to remain stagnant with it, but to improve and grow with and as a society.

### **3. Objectives**

#### **3.1 General objective**

The general objective of this study is to design and implement a didactic proposal that integrates Ecoliteracy into the teaching of English as a Foreign Language (EFL) for a classroom of ninth-grade students in a public educational institution in Bucaramanga.

#### **3.2 Specific objectives**

1. To connect EFL education with the environmental consciousness of each student by fostering transversality.

2. To stimulate the affection of the students towards the environment through the approach of ecological literature related to it.

#### **4. Theoretical framework**

##### **4.1 Literature Review**

###### ***4.1.1 Ecoliteracy***

Ecoliteracy, known as "the ability to understand the natural system" (Adawiah, Rabiatul & Esa, Norizan, 2013, p.01). Is the knowledge that individuals develop to identify, recognize, understand and become aware of their environment, as well as their interactions, connectivity and responsibility with it. Either to appreciate or take care of nature in order to prevent/solve environmental problems that may arise. In this sense, eco-literacy has an enormous importance in the academic context where future citizens are being educated.

Eco-literacy strategies can be developed in different subjects and contexts, these strategies have been working hand in hand with the institutional curriculum, aiming to transform students into global citizens who contribute to develop a healthier and more environmentally sustainable community. For instance, most of the EFL texts presented today deal with issues of global environmental education or, in particular, global warming (Putri, 2018, p.337). For this reason, UNESCO (2005) wants to support the future role of teachers, providing them with training in ESD (Education for Sustainable Development). However, teachers in training have not yet been introduced to environmental education. (Putri, 2018, p.337).

#### 4.1.1.1 Activities used to introduce Ecoliteracy.

The usage of different strategies help educators to develop the subjects or concepts in an easier or more approachable way. This also applies when teaching Ecoliteracy. In education there is a vast universe of activities for each teacher to choose and to adapt to their classroom needs. Some of the most useful inside the classroom can be: (I) Documentaries, since they are a useful tool to introduce activist narratives and environmentalist teachings on developing ecopedagogy (Kopnina & Saari, 2019, p.12). As in the case of the documentary *If a tree falls* in which students reflect about active citizenship and environment (Kopnina & Saari, 2019, p.2). (II) Digital storytelling (DST) regarding environmental problems. According to Putri (2018, p. 343) “The use of DST could promote language learners' awareness of environmental education in which a localized theme could be presented”. (III) Local wisdom, which was (Supriatna, 2016. p. 126), mentioned “becomes one of social science learning resources at schools to build students' ecological intelligence for saving water, becoming green consumers, saving energy in daily life, recycling, reducing plastic use, and more”. One example of it is the Traditional Ecological Knowledge (TEK) in Proverbs. That is traditional wisdom in Proverbs used to develop all the skills, components and aspects that have to be with Ecoliteracy.

On the other hand, some activities must be done outdoors to experience nature in its own context, that is the case of: (IV) Green walls, an instrument for restructuring interior common areas within schools by introducing natural elements, serving simultaneously as an educational tool to promote Ecoliteracy and raise environmental awareness among young learners (Comino. E et al. 2025, p. 5). (V) “Summer Nature Education Programs”, a type of outdoor education where students are in contact with nature as a whole. This one contributes significantly to the development of a responsible environmental behavior of the students

(Erdogan, 2011. p. 2235). Lastly, (VI) Forest garden, which consists of a natural ecosystem designed by humans with a variety of fauna and flora (Hammarsten et. al 2019, p. 227). Visiting this kind of place can bring different reactions to our students that are important since an environmental consciousness can be created (Hammarsten et. al 2019). From the aforementioned strategies, the last one, forest garden, can be used in specific contexts, moments and institutions.

#### **4.1.1.2 Educational outcomes regarding change of behavior, environmental affection, and environmental knowledge.**

Environmental knowledge may be the most expected result due to the traditional education system. Nevertheless, it is the least developed in students where no notable effect is evidenced. This can be due to the different unknown concepts taught during the implementation of Ecoliteracy. As a result, Brito Miranda et al. (2017) presents “playfulness” as an alternative to teach complex concepts related to the environment, stimulating the involvement and curiosity of children and leading to the expansion of oral, written and comprehension skills. Concerning environmental affection, students can have positive or negative emotions towards nature. Each student has a different emotion and motivation to protect the environment but in general, they stress the importance of nature, how to coexist with living organisms, and how to avoid disturbing them (Hammarsten, 2019, p.235). On the other hand, the change of behavior refers to any different path that a student follows after receiving Ecoliteracy. For instance, Damerell et al. , (2013) demonstrated that when children receive wetlands education, parents report a significant increase in knowledge about wetlands and enhance a well household water administration (p.06). But it is the conjunction of knowledge and affect which leads to generate a change of behavior. That is mainly what Otto & Pensini (2017) expose: “It has been shown that environmental

knowledge and connectedness to nature positively affect ecological behavior and that educational programs can lead to more ecological behavior” (Liefländer et al., 2015; Roczen et al., 2014 cited in Otto, S. & Pensini, P 2017, *p. 06.*).

#### **4.1.1.3 Students’ and teachers’ perspectives on Ecoliteracy.**

The way students and teachers perceive Ecoliteracy in the classrooms can determine the effectiveness of its implementation and the different reactions they may perform. Educators are aware of the importance of developing an environmental consciousness, Gunansyah et al. (2020, p. 433) affirmed that based on their experience, teachers agreed that it is necessary to present and make students feel involved with the consequences of their actions as humans on the environment. Furthermore, students generate different views regarding Ecoliteracy, but, in general they understand the importance of nature and express strong positive feelings about spending time outdoors (Hammarsten et. al, 2019, p. 237). These positive student responses are elicited when the environment-based learning incorporates interactive dialog, practical activities, and creativity, as noted by Farahiba et al. (2025, p. 15-349).

In order to do so, educators recognize the importance of the materials used to foster environmentally related topics. Textbooks provided by institutions are among the most commonly used resources when teaching a foreign language. However, such tools are often too broad and not sufficiently connected to the specific context or situation. As Farahiba et al. (2025) note, “teachers want more dynamic interaction between the material taught and the local context. Reliance on government textbooks limits exploration and deeper understanding of matters relevant to the neighborhood” (p. 348). As a response to this issue, teachers seek alternative sources and perspectives for developing concepts related to the natural world. As observed by Mercer et al. (2022), teachers report relying primarily on online resources and

self-created tools. Nonetheless, a considerable number also make use of materials produced by international or national non-profit organizations, as well as cross-curricular resources (p. 08–400).

Nevertheless, Mercer et al. (2022) observed that: “teachers focused more on factors that inhibit than support the inclusion of environmental issues in ELT. Teachers identify Time constraints, as well as Attitudes, as the main issues. Attitudes include both teachers and students’ attitudes, and involve topics such as ideologies, disinterest, topic ‘fatigue’, sense of helplessness, inertia, resistance to change, apathy, and confusion. This is followed by a Lack of training and knowledge” (p. 10-402).

Additionally, both students and teachers concur that there is a lack of support, resources, motivation, and adequate spaces when applying Ecoliteracy. For example: “66% of students surveyed from environmental engineering in Colombia, affirmed that the program they were studying lacked tools to train them in EE” (Acosta Castellanos et. al, 2020, p. 09). Moreover, teachers acknowledged they are not adequately equipped and have little (to no) preparation to teach CrEE (Blanchet & Reilly, 2013, p. 18). Nevertheless, it is important to declare that educators are not required to possess expert scientific knowledge to address environmental issues; instead, they can cultivate an environment of mutual learning and discovery alongside their students. (Mercer et al. 2022, p. 10-11 402-403).

#### ***4.1.2 Transversality***

Transversality is defined by Pantoja (2017) as a concept that seeks to cross the curriculum from a transdisciplinary dimension that combines all its components. Transversality in other words is a holistic and integral vision of knowledge that proposes to change the paradigm of education in favor of building critical social thinking in students. It is

an invitation as teachers and as students, not to limit ourselves to acquire knowledge linked purely to traditional teaching, but to include other aspects that also contribute to the development of people such as practical skills, attitudes and values.

In accordance with the aforementioned and following the ideas of Alviárez & Castellanos (2013) the curricular contents are adapted and updated, trying to generate the capacity to adapt to divergent scenarios, due to the transformations occurring in the productive world and also, to the new reality faced by professionals (p.233). During the process of transversality it is important to link the different contents, weakening their limits, differences and isolations, in order to produce connections in the sense of integration and not juxtaposition (Correa, 2022). Moreover, according to Correa (2022), allowing this interaction between different areas and contents helps to create new ways of thinking about knowledge, society, culture, science, which give rise to other ways of seeing the world and other forms of communication and pedagogical interaction (p.47). As a result, this interrelation and interaction between areas, as Odremán (2002) states, allows students to deepen the informal learning that they acquire in various ways in their socio-natural environment, which in turn provide them with a great psychological and social functionality that will help them to generate an awareness of their real context and develop the necessary competencies to modify it and build a better world.

In this sense, by introducing transversality into the education field students will develop skills that can be used in countless scenarios with specific conditions, in both their academic and daily life. When we use the term transversal we refer to the teaching of knowledge and skills without barriers between different tasks, contents and roles. The accurate teaching and learning of all these subject-independent and cross-curricular competencies will end up helping the development of the social and interpersonal relations of

the individual. However, a central difficulty, as Mercer et al. (2022) observed, lies in reaching educators who, despite working in contexts where Ecoliteracy is embedded within transversal teaching goals, do not display particular interest in environmental matters. Accordingly, teacher education programs should purposefully highlight the intrinsic relationship between English language instruction and broader socio-global challenges, including the climate crisis, and underscore the importance of employing a critical and transformative orientation toward pedagogy. (p. 12-404). Therefore, it becomes necessary to examine the curriculum so that, in this specific case, all the subjects are permeated by the contents related to environmental education and that, on the contrary, it is not a matter of only one single subject.

All things considered, the previously mentioned literature review guided our study since it let us recognize a path in the implementation of Ecoliteracy and showed gaps where further research needed to be done. Additionally, it helped us with the data collection process we carried out and will be presented later. It gave us a broad understanding of how to measure and recognize the development of Ecoliteracy and the different ways to approach it. Moreover, this review of the existing literature led us to a close relation with the theoretical bases that guide this study which we shall deepen below.

#### **4.2 Theoretical and Conceptual Bases**

This study seeks to design a didactic proposal for the implementation of Ecoliteracy based on the work done by Orr (1992) who is one of the main authors of Ecoliteracy and Erdogan (2009) a more recent figure in the same field.

Orr (1992) developed the term ecological literacy, understanding it as “a broad understanding of how people and societies relate to each other and to natural systems” (p.92). He believed that ecological literacy begins in childhood (p.86). For that reason, education at

early ages plays a huge role at the moment of developing Ecoliteracy in children for being conscious of the crisis that is upon us. Moreover in today's society, responsible actions have to be taken in order to prevent and solve environmental problems (Erdogan, 2009, p.10). Beginning in the place where future citizens are being educated.

Nonetheless, when it comes to taking action, institutions tend to improvise. They often take advice from non-expert voices, they implement or copy models from other institutions, and they do this just to fulfill a mandatory agenda. However, as stated by Erdogan (2009) before incorporating environmental concepts into curriculum and applying Environmental education programs in schools, it would be key to recognize the factors that are likely to influence the development of children's environmental responsible behavior (p.10).

To discover these factors a lot of frameworks have been developed. For instance, recent frameworks "posit that environmental literacy encompasses at least five clusters of learning outcomes (Cognitive) Knowledge and Skills; (Affective) Affective Dispositions and Determinants of Behavior; (Psychomotor or Conative) Environmentally Responsible Behavior" (Erdogan, 2009, p.44). This is closely related and coherent with the bases that constitute ecological literacy according to (Orr, 1992, p. 92), those are: knowing, caring and practical competence.

Considering the above, we study Ecoliteracy from three main factors, namely, knowledge, affect and change of behavior. Affect is divided by Erdogan (2009) into three main categories: Environmental attitude, Environmental Sensitivity and Willingness to act, defined below.

**Environmental attitude:** defined as the process through which individuals and social groups develop environmental values, a sense of concern, and the motivation to actively

engage in addressing environmental challenges and promoting improvement. (UNESCO, 1977, as cited in Erdogan, 2009, p. 12).

**Environmental Sensitivity:** referred to “the environmental literacy with regard to exposure to, exploration of, appreciation of, respect for the environment” (Sward & Marcinkowski, 2001, as cited in Erdogan, 2009, p. 12)

**Willingness to take environmental action:** Viewed “as the conative component of attitude and it has usually been assumed that this conative component is related to attitude’s affective component. This conceptualization has led to the assumption of a strong relation between attitudes and intentions” (Fishbein & Ajzen, 1975, p.289). In addition, it has been “interchangeably used with verbal commitment” (Erdogan, 2009, p. 12).

Alongside, the change of behavior is categorized into five categories:

- (1) Eco-management
- (2) Consumer/Economic Action
- (3) Persuasion
- (4) Political action
- (5) Legal action.

For our purposes in this study, the first three categories were considered, as they were the most applicable to our context.

Erdogan (2009), describes each category as follows: “(1) **Eco-management:** It is also called physical action. It refers to those environmental actions in which people work directly with the natural world to help prevent or resolve environmental issues. (2) **Consumer/Economic Action:** It refers to those environmental actions in which people use monetary support or financial pressure to help prevent or resolve environmental issues. (3)

**Persuasion:** It refers to those environmental actions in which individuals or groups appeal to others to help prevent or resolve environmental issues” (p. 52).

Ecology is an applied subject, in that sense, Environmental education ought to change the way people live (Orr, 1992, p.91). This is what we seek to recognize whether Ecoliteracy is indeed generating a change or whether it has become an average day-to-day activity in educational settings. Change is really important and is needed because our survival depends on working with, not against, natural forces (Orr, 1992, p.93). In order to generate that change, comprehending and understanding the environment is a must. That is what Erdogan (2009) claims “knowledge directly contributes to the development of positive environmental attitudes or awareness which turns into development of responsible environmental behaviour” (p.04). It prepares individuals to know how to act to preserve the environment, moreover, it awakens attitudes and interests for taking real and responsible action.

#### **4.3 Legal reference**

In Colombia, according to article 14 in the General Act of Education of 1994: “...All private and public educational establishments that offer formal education at the levels of preschool, basic and secondary education, are obliged to comply... with the teaching of environmental protection, ecology and the preservation of natural resources, in accordance with the provisions of article 67 of the Political Constitution.”

Likewise, article 5 states that education will be developed having as one of its goals: “The acquisition of an awareness for the conservation, protection and improvement of the environment, of the quality of life, rational use of natural resources, disaster prevention, within a culture ecological and risk and the defense of the cultural heritage of the Nation”

Similarly, in the public institution where this study will be carried out, the Environmental Education Project (PRAES) is the most relevant project for this research, it began to be implemented after the need to raise awareness and develop skills in students for the preservation and maintenance of the environment in the institution, generating a collective welfare in the educational community. Regrettably, even though it can be implemented in so many ways, the objectives of this project are to keep the spaces clean and to reduce the intensity of noise in the classrooms. Although these objectives benefit the community, they are not the expected result for a transversal project with an environmental focus.

In the case of the Institutional Educational Project (PEI) of this specific institution, interdisciplinary projects are present expressing an intention to build critical thinking and globalized knowledge in students. This is how the curricular transversality is evidenced even specifically referring to the development of environmental issues. Within this same document there is a section directed to the teaching of English; in which the institution states that despite the subject tries to develop the communicative competence of the students, it is not working isolated. On the contrary, the proposed teaching process seeks the integration of linguistic, sociolinguistic, and sociocultural skills, among others.

Going deeper about the English area as such, the national plan for bilingualism and the English curricular guidelines are in charge of organizing the contents and the curriculum in this subject. On the one hand, the national plan for bilingualism seeks to promote the teaching and learning of foreign languages in preschool, basic and secondary students and presents the basic rights of learning as a reference to recognize the key knowledge and skills that students should acquire and develop. On the other hand, the curricular guidelines, as mentioned by the Ministry of National Education, are pedagogical guidelines so that teachers in the area appropriate the basic conceptual elements and thus have enough autonomy to meet

the needs of curricular design within the Institutional Educational Project (PEI), seek opportunities for innovative management of the area and assume and appropriate of all the scientific and technological advances (Ministry of National Education, 2014).

## **5. Methodology**

### **5.1 Research Method**

This mixed-methods research is framed within an interpretive approach, based on inductive reasoning, since we want to conduct a study that aims to find out how to develop Ecoliteracy in an EFL classroom from a public school in Bucaramanga and describe the processes lived throughout it. Ethnomethodology was the research model chosen for this study due to the nature of how the groups interpret the reality of Ecoliteracy in their EFL and educational context. Specifically, because “it is directed at the mechanisms by which participants achieve and sustain interaction in a social encounter – the assumptions they make, the conventions they utilize, and the practices they adopt” (Cohen et al., 2018, p.21).

The method selected was Action Research, a methodology that aims to generate practical improvement, encourage innovation, and support changes or development of social practices, while enhancing the practitioners’ better understanding of their practices (Zuber Skerritt, 1996, p.83). Moreover its characteristic “spiral of self-reflective cycles of: planning a change, acting and observing the process and consequences of the change, reflecting on these processes and consequences, and then re-planning, acting and observing, reflecting, and so on...” (Kemmis, McTaggart, & Nixon, 2013, p.18). As part of the method, we developed a coherent didactic proposal for the 9<sup>th</sup> Grade EFL classroom.

Moreover, regarding the quantitative aspect, this research was framed within a descriptive approach. In it, we portrayed an exploratory study that digs into the different

emotions and changes in the behavior of the students of a group of ninth graders of a public school in Bucaramanga, towards the environment upon receiving eco-literacy. Considering the objectives of our study we suggest the following hypothesis:

- The implementation of a didactic proposal that integrates Ecoliteracy into the EFL classroom will enhance ninth-grade students' English language skills while simultaneously fostering greater environmental awareness and responsibility.

In this sense, two variables were used in order to gather data around them: Affection and Behavior. These variables were taken considering the above theoretical framework. Firstly, we recognize affection towards the environment. Concerning environmental affection, each student has different emotions and motivations to protect the environment, these can be positive or negative. The previous variable leads individuals to our last one, responsible behavior. The change of behavior refers to any different path in favour of the environment that a student follows after receiving Ecoliteracy. At last, in order to collect data to support that information, we carried out a survey that will be presented below, along with the other instruments.

## **5.2 Participants and sampling**

This study was conducted within a secondary school group at a public institution in the city of Bucaramanga, Santander, in order to determine how to implement Ecoliteracy in the EFL classroom. By means of a convenience and a simple random sampling, a group of 24, 9th graders were chosen. Their educational level is secondary, among the students to whom the survey was applied, there are 8 boys and 16 girls (see Table 1), their age group is from 14 to 16 as illustrated in Figure 1, and according to the common European Framework

of Reference they belong to level A1. Furthermore, it is also relevant to mention that out of these 24 students, 20 (83.3%) reside inside the Metropolitan Area of Bucaramanga and only 4 (16.7%) reside in rural areas.

**Table 1**

*Number of students surveyed according to gender.*

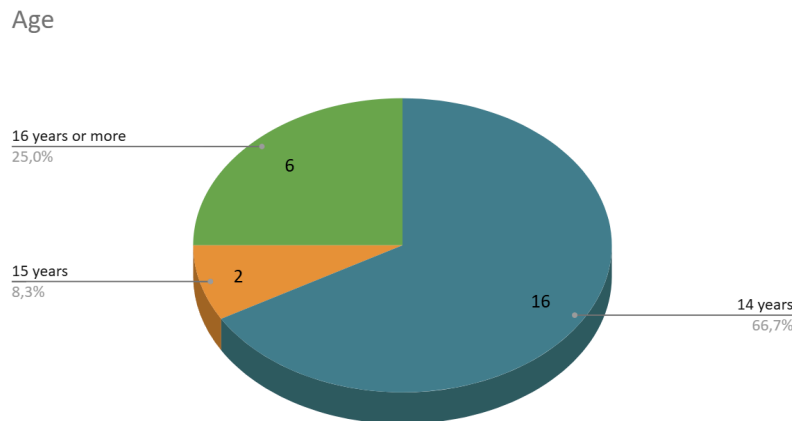
*Bayesian Binomial Test*

	Level	Counts	Total	Proportion	BF <sub>10</sub>
A1	Femenino	16	24	0.667	0.912
	Masculino	8	24	0.333	0.912

*Note.* Proportions tested against value: 0.5. The shape of the prior distribution under the alternative hypothesis is specified by Beta(1, 1).

**Figure 1**

*Ages of the students surveyed.*



We chose this institution due to two main practical reasons, firstly, we carried out our pedagogical practicum in this school, for that reason the access to the classroom, planning, curriculum and participants was easier. Secondly, because it is a big school with many green

spaces, this context is aligned with our needs for the implementation of certain activities and data collection processes. And finally, due to its public nature, this characteristic will help us to understand the process of education in English and environmental issues in the public sector.

Additionally, we selected four active teachers from the institution, each teacher developed their duty in different subjects and grades. Participant 1 is an English teacher that has worked in the institution for various years already; she was the responsible for this specific 9th grade classroom, and she supervised our practicum and our research too. Participant 2 is a natural sciences teacher that has worked closely with the different transversal projects from the institution, and recognizes the importance of the environment and caring. Participant 3 was the head of the english department at that moment, he has worked closely with practicum teachers and the students from the institution. This gave us a broader view of the area, the activities and the implementation for the curricula. Finally, Participant 4, is a 9th grade Spanish teacher, who also agreed to participate and showed interest in sharing her experience and opinion.

### **5.3 Data collection Instruments**

Throughout this research, data was gathered using three main tools: observation grids, interviews and a survey. For us as pre-service teachers, class observations are one of the best instruments we can use to be able to analyze a group or a classroom properly. Initially, this is due to the fact that observation is not only the action of looking at something or someone, but looking systematically at it, adding attention to their behaviours, settings, events, artefacts, routines, etc. (Simpson and Tuson, 2003, p.2; Marshall and Rossman, 2016, cited by Cohen et, 2018). Subsequently, conducting classroom observations allowed us to gather first-hand information, 'live' data in situ from naturally occurring social situations rather than, for

example, reported data”, (Ibid 2018). Accordingly, observation grids were designed so as to gather the data and then it was coded in order to analyze it. The observation grid is divided into 5 evaluation elements which are: knowledge, affect, behavior, transversality and strengths and weaknesses. These elements helped us to recognize the development of Ecoliteracy individually but also with the English course. (See the Observation Grid in Annex A).

On the other hand, we conducted interviews with the four previously mentioned teachers from the institution. Performing these interviews allowed us to have an enriching conversation about different aspects related to the implementation of environmental themes during the English classes. We implemented a semi structured interview that during the development also worked as an informal conversational interview. This is a key characteristic of interviews, where the order of the interview may be controlled whilst still giving space for spontaneity (Cohen et al., 2018, p.506). Additionally, interviews portray the interaction of the two parts, for instance, Cohen et al. (2018) suggest that “The interview is a social, interpersonal encounter, not merely a data-collection exercise”. In this sense the interview served as an active conversation between two parts in which we discussed topics of interest. Four teachers participated in the interview: one from Natural Sciences, two from English, and one from Spanish. The interview consisted of eight questions and aimed to identify the implementation of Ecoliteracy in the English classroom, as well as to gather the educators’ perspectives on this topic. (See the interview Guide in Annex B).

Undoubtedly, students were also an important source of information. They were included in the data collection process through their participation in a closed response survey, which initially consisted of 3 demographic questions —this, aiming to analyze the results obtained taking into account the characteristics of the population— followed by 14 questions

belonging to the affection variable, and finally 17 questions which belonged to the behaviour variable. The survey was designed following the concepts suggested by Erdogan (2009). Since the survey does not contain open questions, but scales with a wide range for the student to select, it allowed us to carry out a more cautious analysis of the data without room for lack of information or confusion.

To assess the affection and behaviour variables of the students towards the environment, a survey adaptation of the Affective Disposition Scale [ADTES] and the Children Responsible Environmental Behavior Scale [CREBS] developed by Erdoğan (2009) were used. The [ADTES] includes 14 four-point Likert-type items, which in turn are divided into three dimensions: "INTENTION" (5 items) "ATTITUDE" (5 items) and "SENSITIVITY" (4 items). The Likert-type format of the [ADTES] was modified into a Agree/Disagree questionnaire, given that the participants were considered capable of determining whether they fully agreed or disagreed with each item. On the other hand, through the [CREBS] instrument, students indicate how many times they performed the behavior described in each question, during the last year. As mentioned above, the adaptation that we did of the instrument has seventeen items on a seven-point scale, the range of the alternatives of these points goes from never (0 times), 1 time, 2 times, 3 times, 4 times, 5 times to more than five times. The questions we used were selected for their relevance taking into account the context of our research as well as the population surveyed. These questions in turn belong to three subcategories, namely, Eco-Management (PHYSICAL), Consumer and Economic Action (ECONOMICAL) and Individual and Public Persuasion (PERSUASION). (See the Survey in Annex C).

5.3.1 Intervention

Table 2

Action plan

Lesson	Objectives	Procedures	Materials	Outcomes
1 (#8)	<p>Ss will be able to recognize the relationships between the social-environmental problems of the world and those of their specific community</p> <p>Ss will learn vocabulary about the environment.</p>	<p>Environmental problems review.</p> <p>Explanation of community: <i>School community, family community, neighborhood community, and city community.</i></p> <p>Worksheet.</p> <p>Examples, explanations and conversation.</p>	<p>Notebook</p> <p>Computer</p> <p>Videobeam</p> <p>Slides</p> <p>Worksheet</p>	<p>Slides or infographics to show an environmental problem in the country or city.</p> <p>Ss can start creating it and they will finish it the next class.</p>
2 (#9)	<p>Ss will be able to recognize the environmental problems in their specific community.</p> <p>Ss will be able to propose solutions for the environmental problems.</p>	<p>Review about previous knowledge about communities.</p> <p>Infographic presentation of an environmental problem in Bucaramanga.</p> <p>Ss participation after the explanation: <i>What community is affected by the problem? / What is the environmental problem? / What are the possible solutions?</i></p>	<p>Slides</p> <p>Computer</p> <p>Infographic</p> <p>Internet</p> <p>News</p>	<p>Ss will need to finish their slides or infographic and prepare the presentation for it for next class.</p>

<p><b>3 (#11)</b></p>	<p>Ss will be able to share facts and opinions about the animal/plant they choose.</p>	<p>Outdoors activity within the institution so that they can take pictures and notes about animals/plants that called their attention using the app iNaturalist.</p>	<p>Campus List Phones iNaturalist App</p>	<p>Present their notes in Padlet and make a brief presentation in which they will share to their classmates interesting facts about their animal/plant and their experience.</p>
<p><b>4 (#12)</b></p>	<p>Ss will be able to share facts and opinions about the animal/plant they chose.</p> <p>Ss will enhance and feel more confident using environment vocabulary.</p>	<p>Ss will present their padlets by sharing the name of the animal/plant and some important aspects.</p> <p>Ss will see a video and take notes related to the vocabulary seen during class. Ss will explain the topic of the video.</p>	<p>Slides Computer Videobeam Paldet Video Board</p>	<p>Ss will have to choose an animal and will have to create sentences of things that the animal <i>can</i> or <i>can't</i> do.</p>

As stated before, being able to observe a classroom, adding attention to their behaviors, routines, patterns, etc., is one of the best instruments we can get to analyze a population, and even more, gather data from them. For that purpose, we took advantage of our practicum process with ninth graders, in order to implement Ecoliteracy through EFL within a class, so that we can observe, analyze and measure the population. In this section, we will report some of them. Each of these classes were previously designed and planned according to specific needs, and each of them had a series of objectives as illustrated in Table 2.

With the first class we implemented, we had two clear objectives: that after its application, students may be able to classify social-environmental problems according to each community (world, school, neighborhood, etc), and that they improve and increase their

vocabulary about the environment. We established 7 key words/terms which according to the lesson plan, would be the ones students should learn in that class (chemical waste, global warming, deforestation, melting ice caps, rubbish in seas, polluted rivers and littering). The class was designed to be interactive, and it was divided into three parts: Warm up, Procedure and Closure. The first one, the warm up, was to review homework and share it in class; “write two promises for planet earth”.

Then, on a second place, we recognized the procedure, which was classroom’s main part; on it, we reviewed previous knowledge, explained new concepts using planned materials (slides, videobeam, computer), worked on a worksheet (*see annex 8*) and kept reinforcing new knowledge with the visual aids and probing questions. Finally, for the closure, we explained the next class activity. (Students have to present an environmental problem in the country or city using slides, an infographic, etc. They will have the time in class to do so)

After implementing and observing, we conclude certain points. On the one hand, students participate more when they felt identified with the topic, in this case, if the environmental problem matched with any of the ones present in any of their communities; Also, for that day’s class, the majority of the classroom was really visual, understanding better each issue and their impact, mainly thanks to the visual aids.

The second class was designed with the purpose that students better recognize and classify social-environmental problems according to each community (world, school, neighborhood, etc), and that in the same way, they are able to propose possible solutions for each of them. For this class, we established 11 key words/terms (family, school, neighborhood, city, chemical waste, global warming, deforestation, melting ice caps, rubbish in the seas, polluted rivers, littering), and 3 expressions to be learned in class (I think..., I don’t think..., I agree...). The class was also designed to be interactive, and it was divided as

well, into three parts: Warm up, Procedure and Closure. On the first one, the warm up, we made a positive point activity to reward students' previous knowledge towards communities.

Secondly, we continued with the procedure, which was used to start creating the draft for an infographic of an environmental problem that should be presented next class. For this activity, we told them we are asking them the following questions: What community is affected by the problem? What is the environmental problem? What are the possible solutions?. Finally, closure was mainly used to clarify any doubts about the infographic's presentation. We answered the 3 questions planned for the infographics presentation: What community is affected by the problem? What is the environmental problem? What are the possible solutions? and debated about it. Even though there was little time and some of them had no computer at home to finish the infographic. Below there are some examples of the infographic outcomes in Figure 2 and Figure 3.

## **Figure 2**

*Infographics Example 1.*

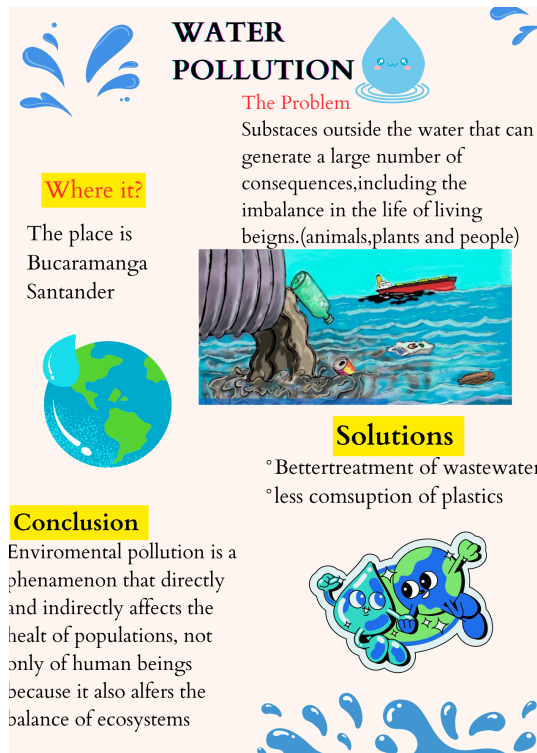
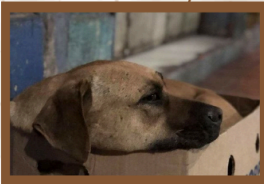


Figure 3

Infographics Example 2.

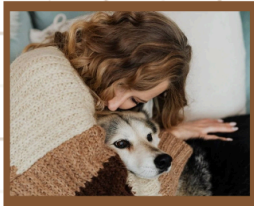
**ABANDONMENT**  
OF ANIMALS


**Problem**  
People throw away or abandon animals because they don't want to take care of them.




**Solution**

- Campaign to raise money to build new animal adoption centers
- you believe Create awareness among children so that this problem does not occur in the future






**Where**  
Where there is more animal abandonment is in Soacha (1.200 pets), Sesquile (600), Simijaca (200), Tena (200), La Mesa (147), Tocancipa (115).  
And in Colombia in the city of Bogota there are 66,467 animals in  
And in Colombia in the city of Bogota there are 66,467 animals in



**Conclusion**  
My opinion It is very important to take care of animals, give them a home, lots of love and not abandon them.



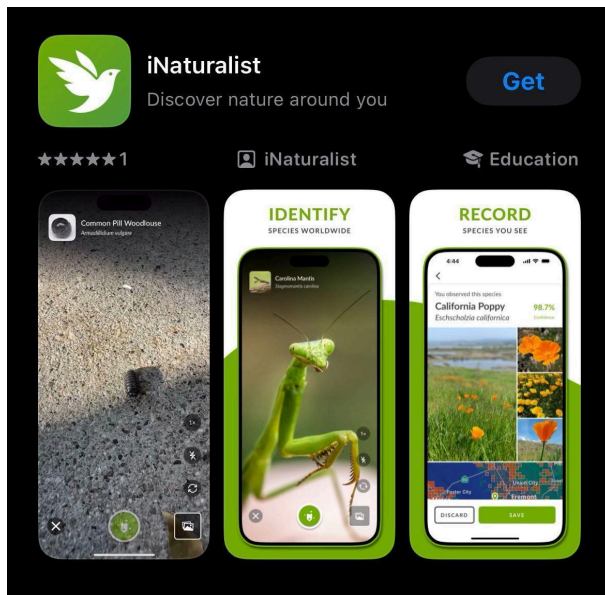
**9-6**  
**Valeren Contreras**  
**Gabriela sanabria**  
**Angie Martinez**

Third class was designed with the purpose that students were able to share facts and opinions about animals/plants. For this, we established 9 key words/terms (forest, garden, plastic, bin, sky, bird, insect, plants, flowers) to be learned in class.

This class was really innovative and a routine breaker, and it was divided as well, into three parts: Warm up, Procedure and Closure. On the first one, the warm up was used for a relaxation activity and to explain the main task. On the second part, we had the procedure, with a very engaging activity which consisted on taking students through a previously designed route through the school, in which they had to see different kinds of trees, plants, flowers and even animals; and, they should take notes about any organism that called their attention, as well as use their cellphones to take photos of these living organisms with an app called *iNaturalist* (see figure 4), which with the taken pictures gave them the scientific name of any life form they found (tree, plant, flower, bird, insect, etc) and they could complement their notes.

**Figure 4**

*iNaturalist App.*



Finally, closure was used to explain to students the activity for the next class. Using the sample video we sent them about how to use the web-based application Padlet (see figure 5 and 6), they should upload a note (it should include information such as color, shape,



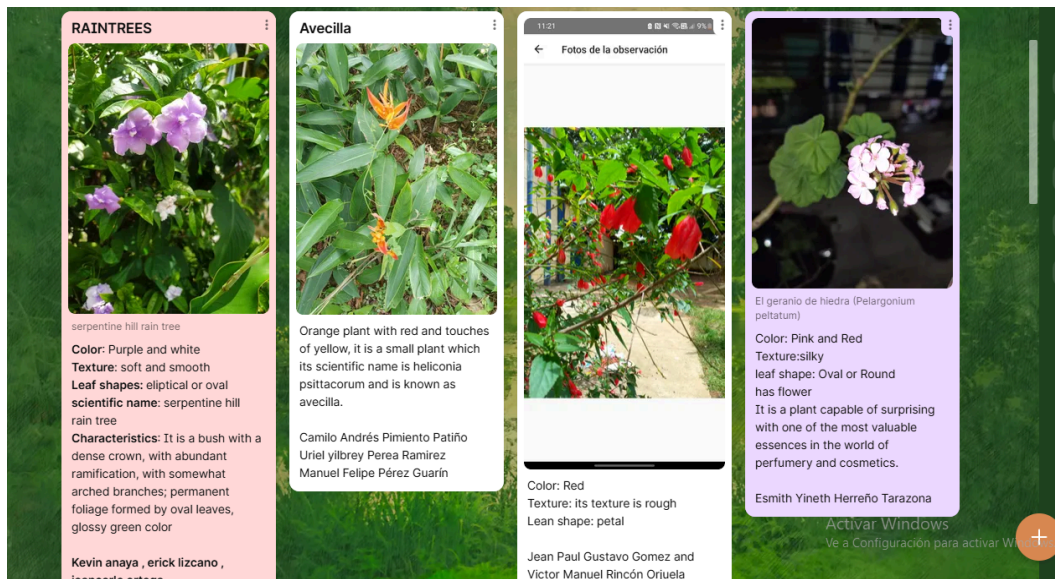
since it was a group activity, so what they did was rotate tools and roles within the team, so all of them have the same possibility of contributing.

The last class that was implemented, aimed for students to have the capacity to share facts and opinions about the animal/plant they chose and that they felt confident and appropriate with the environment vocabulary. For this, we established 13 key words/terms (family, school, neighborhood, city, forest, mountains, ocean, crops, sky, bird, insect, plants, flowers) to be learned in class.

Same as the previous three classes we reviewed, this was divided into three parts: Warm up, Procedure and Closure. The warm up was used to do an activity for the sake of practicing vocabulary, it was an activity similar to the *broken phone* game, in which teachers told a word from already seen vocabulary to the last on the line, and they had to tell the next one the word, until it arrives to the first one, who has to be the first (between the other lines) in writing the correct word on the board. Moving to the second part, the procedure of this class was the Padlet presentation of the organism they chose (Figure 7), as well as a writing-speaking activity after watching a YouTube video.

**Figure 7**

*Padlet (see annex 9 for the complete Padlet).*



Finally, for the closure, we worked on an activity to keep reinforcing seen vocabulary (in our classes but as well with their English teacher), that consisted of working in teams to choose an animal, create sentences using Can or Can't do (real things depending on the animal) and the rest of the students will have to guess the animal.

### 5.4 Data analysis

In order to analyze the gathered data, the interviews were recorded and transcribed, then coded using the participants' answers, by “breaking down segments of text data into smaller units and then examining, comparing, conceptualizing and categorizing data” (Cohen et al. , 2018, p.668). Eventually, axial coding enabled us to identify similar information and assemble the data in terms of those items that bear the same code (Cohen et al. , 2018, p.669). Regarding the observation grids of the classes, color coding was used in order to study them. Subsequently, we recognized the categories and subcategories that the study revealed and summarized the findings in their respective memos.

On the other hand, to analyze the survey, a statistical analysis of the instruments was conducted by grouping the responses into their respective categories and subcategories and

by coding the data accordingly. The items were analyzed using descriptive statistics, frequencies and percentages were calculated in order to determine the proportion of participants who selected each option. This approach made it possible to identify general trends in the responses, such as the extent to which students agreed or disagreed with specific statements. The results are presented in graphical form to provide a clear visualization of the distribution of responses. Following this step, the Likert-scale items were analyzed to provide a more detailed understanding of the intensity of participants' behaviors. We grouped the seven points of the [CREBS] as follows: Never, 1 to 3 times, 4 to 5 times, and more than 5 times, as it permitted better codification and analysis.

Finally, a triangulation technique was applied to the data collection instruments to analyze and compare the gathered information. In the social sciences, triangulation is considered a key approach, as it seeks to provide a more comprehensive understanding of human behavior by examining it from multiple perspectives and incorporating both quantitative and qualitative data (Cohen et al., 2018, p. 265) (See a sample of Data Process and Analysis in Annex G).

## **6. Results**

This research objective was to design and implement a didactic proposal that intended to promote Ecoliteracy into an English as a Foreign Language (EFL) classroom in a public educational institution in Bucaramanga. The following section presents the findings derived from classroom observations, interviews, and surveys. Results are organized around five categories:

(1) Knowledge: Concepts Developed, Contextual Examples, and Pedagogical Strategies.

(2) Presence of Transversality.

(3) Affection: Positive and Negative Attitudes, and the Role of Outdoor Practices.

(4) Behavior: Reported and Observed Actions.

(5) Challenges: Constraints and Limitations in Ecoliteracy Implementation. Graphics and figures are included to support the interpretation of the data.

### **6.1 Knowledge: Concepts Developed, Contextual Examples, and Pedagogical Strategies**

The findings related to the environmental knowledge addressed within the classes reveal several important aspects. First, there are specific concepts that are consistently developed, mainly related to environmental issues. Second, the results highlight the relevance of the local context, which allows students to connect broad issues with their immediate realities and local examples, thereby strengthening comprehension and engagement. Finally, the data show the different tools and strategies employed by teachers to carry out this learning process, ranging from traditional classroom resources to more interactive and experiential approaches. Together, these elements provide a clearer picture of how environmental knowledge is being integrated into English language teaching.

The results reveal that teachers integrate, to varying degrees, concepts related to environmental care and nature within their classes. Overall, there is evidence of alignment with the Ministry of Education guidelines and the British Council materials, which promote the inclusion of environmental topics in English language teaching. Students are presented mainly on environmental problems such as waste separation, garbage disposal, pollution, recycling, water conservation, and the impact of single-use plastics through the different subjects as the teachers mention. Additionally, during the interventions, students expand their English vocabulary on environmental topics, becoming familiar with terms such as chemical

waste, littering, and deforestation. They also explore the world of plants, describing their colors and shapes, learning their scientific names, and discussing environmental facts connected to them. These activities not only enrich their language learning but also reinforce the importance of recognizing and valuing natural elements around them, generating opinions and different perspectives.

Another important finding observed during the classes is that when environmental concepts are introduced with contextualized examples, students relate them to their immediate realities, which facilitates greater participation and the sharing of personal experiences with classmates. When learning about environmental issues, students tend to identify them as everyday problems; however, the use of examples drawn from their local context appears to make these issues more tangible and less distant. Even when a concept is broad, students seek connections with similar issues in their own communities.

In general, students show curiosity about their surroundings, demonstrate awareness of local environmental issues, and engage more actively when proposing solutions relevant to their own context. They also express themselves more readily from a personal perspective and contribute examples from their communities, such as waste management problems. Some of these outcomes are spotted through products such as presentations, infographics or slides students create to share their ecological knowledge, as seen in Figures 2 and 3. After developing these issues, students engage in debates about how difficult it is to find solutions to protect the environment; For instance, in a discussion on air pollution, one student explains that adopting alternative practices such as cycling is “challenging” mainly due to being underage and concerns regarding the security of the city. Other outcomes refer to photographs they have taken of plants, or observations about living organisms during class activities. This directly relates to the affection and emotions students develop towards the environment and

will be seen in affection results. (See the images in Annex H).

In order to impart environmental knowledge, interviews show that teachers use a variety of tools and strategies in order to raise awareness of the three main notions of Ecoliteracy. Namely, they focus on in-classroom activities, out-of-class activities, and language-level adaptation. In terms of in-classroom strategies, participants make use of audiovisual tools, such as videos and audiobooks. Additionally, they use classroom workshops, readings, discussions, and one of them uses the flipped classroom technique. Similarly, within the tools we used during the classes it is important to highlight: videobeam, slides, worksheets, infographics, APPs and our cellphones.

Participants also design an annual transversal project, in which different courses are involved, in this case Spanish, English and Natural Sciences. This project (Proyecto Ambiental) involves students in out-of-class activities such as: cleaning days, planting, caring, and gardening. Finally, when it comes to the English classroom, participant 3 indicates that he uses language-adapted material in order to engage students with ecoliterary topics.

Lastly, with regard to classroom materials, the interviewees mention that, given the appropriate resources, they would first improve objects such as recycling and waste separation bins, since the current ones, created by students, are not sufficiently durable. These outcomes made by the students refer to bins created with recycled material and objects brought from students' homes during the Natural Sciences classes. Second, they would invest in workshop materials to support the various projects in which students participate, thus generating tangible outcomes related to environmental preservation. Third, the strengthening of scientific knowledge and practices, such as lab visits and research, as it enables learners to understand the natural world from a more experimental perspective, broadening the

understanding of the natural world from a research-based view. Concerning outdoor strategies, participants acknowledge gardening as one of the most desirable activities for fostering alternative ways of learning about nature. Furthermore, Participant 4 asserts that field trips could provide meaningful experiences to raise awareness of environmental issues, since being in contact with the natural world can make students more conscious of their surroundings and put the learnt concepts into practice .

## **6.2 Presence of Transversality**

Findings reveal that teachers consider the development of environmental awareness during English classes is not only relevant but essential. This awareness is often encouraged through transversal projects that connect English with other subjects, particularly science that strengthens the integration of language learning with environmental education. Several participants describe strategies that go beyond theory and seek to involve students in concrete practices. For example, recycling initiatives and waste separation activities are used not only to raise awareness about environmental issues but also to introduce and reinforce vocabulary in English,

In this sense, two teachers highlight that these practices are reinforced through transversal connections with institutional projects such as the Bilingual Plan, the School Environmental Project (Proyecto Ambiental Escolar - PRAE) and the Sex Education and Civic Culture Project (Proyecto de Educación Sexual y Cultura Ciudadana - PESCC). In this regard, concepts such as landscape ecology, diversity, environmental awareness, care for ecosystems, recycling, and the consequences of human actions on nature are incorporated in the classroom, not only as thematic content but also as instruments to foster communicative competence in English.

Regarding the Bilingual Plan, participant 1 explains that the Ministry of Education, in collaboration with the British Council, has provided apps and websites to teach environmental topics. Issues related to environmental protection, such as recycling and water conservation, have been addressed. Additionally, the implementation of the environmental project is one of the most identifiable forms of transversality, as participants notice a junction between different subjects, including English, Mathematics, Social Sciences, Electric classes, and Practical subjects. These last two are the most readily observable, as there are tangible outcomes, specifically the creation of a machine by students, that allows the reuse of plastic, watering programs, and garden centers.

In addition, it is evident that teachers aim not only to transmit information but also to underscore the personal and social implications of these practices. For instance, participant 3 emphasizes that caring for the environment also means caring for ourselves, highlighting a broader educational dimension that connects ecological responsibility with personal and collective well-being. At the same time, differences emerge in terms of the depth with which these concepts are addressed. While some teachers describe an explicit and structured integration of environmental themes, there is one participant that acknowledges that she does not work with them in depth, but rather emphasizes their importance only when suggested by the topic. This variation illustrates how the pedagogical appropriation of environmental concepts is influenced both by institutional planning and by teachers' individual decisions. Nevertheless, it is important to remark, as participant 2 states, that although there is an ongoing articulation, it is not completely perfect and there is still work to be done.

### **6.3 Affection: Positive and Negative Attitudes, and the Role of Outdoor Practices**

As stated above, after the development of concepts and knowledge related to the environment, and the process where students comprehend the issues from their own

perspectives and settings, students display different attitudes and emotions—both positive and negative—toward the natural world. These findings unveil that, with regard to environmental attitudes, students generally express motivation, concern, and a set of environmental values. This can be seen through the teachers' perspectives, our observations and students' responses to the different survey items. Positive responses are often associated with comments about the visual appeal of the natural world and feelings of comfort in outdoor locations. Learners express enjoyment when engaging with environmental concepts in natural spaces, demonstrating greater awareness of the green areas around their school, and identifying elements they had not previously noticed. As an illustration, they describe plants as beautiful and display interest when sharing their observations and discoveries.

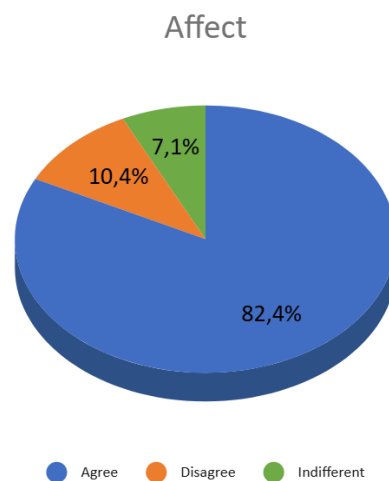
In accordance with the above mentioned, students demonstrate an affinity for outdoor practices that allow them to interact with nature in real settings and engage in physical actions in favor of the environment. Such practices are largely possible due to the environmental projects previously mentioned. Additionally, teachers emphasize the importance of outdoor and physical tasks in achieving tangible outcomes, which they associate with observable changes in students' environmental behaviors. These activities mainly include cleaning days, planting, and gardening within the institution. In addition, learners report a positive attitude toward tasks involving direct contact with plants and highlight the aesthetic value of plant life.

Furthermore, the positive emotions are reflected in the survey results, where students reported a considerable degree of affection towards the environment. As illustrated in Figure 8, 82.4% of participants report agreement with statements reflecting a positive affective connection to the environment. This was followed by 10.4% who disagree with certain items

that will be deepened in the negative emotions, and 7.1% who consider themselves completely indifferent to a few questions concerning their affection for the natural world.

### Figure 8

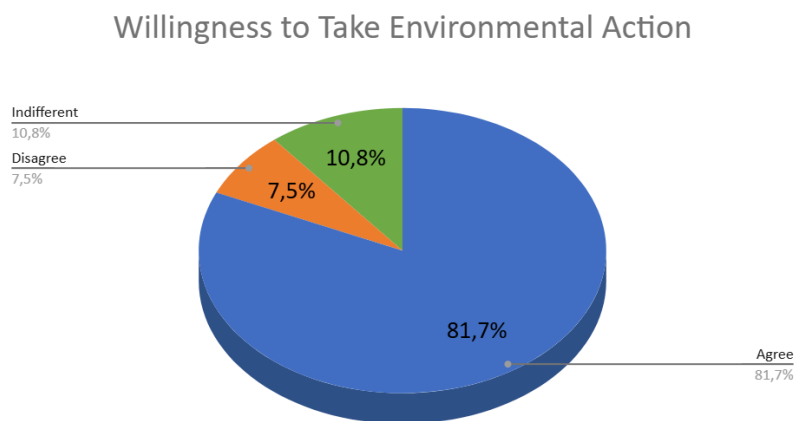
*Environmental Affect.*



The survey results also reveal a strong willingness among participants to engage in actions in favor of the environment as seen in Figure 9. Specifically, 81.7% of respondents agree and acknowledge that there are concrete actions they can undertake within their contexts, such as assisting individuals working on environmental issues, protecting natural areas and habitats, or encouraging others to do the same. In contrast, 18.3% of the students express indifference or a lack of disposition to adopt environmental practices. Notably, all participants (100%,  $n = 24$ ) recognize that they can contribute to protecting natural areas and habitats of living organisms, as well as assume individual responsibility in addressing environmental pollution.

### Figure 9

*Willingness to Take Environmental Action.*

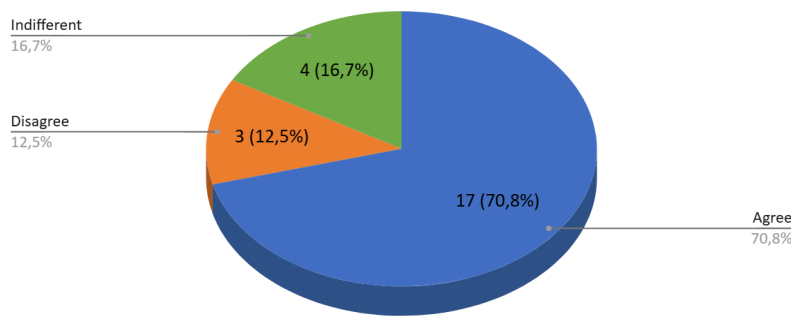


On the other hand, some negative reactions emerge in relation to specific situations. Namely, issues of waste management, the interaction with wild animals or insects, and self environmental education. For instance, students report that when it comes to waste management in the city, “it looks ugly when there is too much garbage” or that they “don’t like the streets full of trash.” Moreover, some students express fear or discomfort during the *iNaturalist* app activity due to encountering insects they find unpleasant. Regarding this point, the survey supports these emerging attitudes, as illustrated in Figure 10. Where in response to item A10, “*Wild animals like snakes and eagles should not be killed, because they also have a right to survive,*” a small percentage of students (16.7%,  $n = 4$ ) report indifference to this issue, while 12.5% disagree with the preservation and protection of wildlife.

**Figure 10**

*Attitudes Towards Wild Animals.*

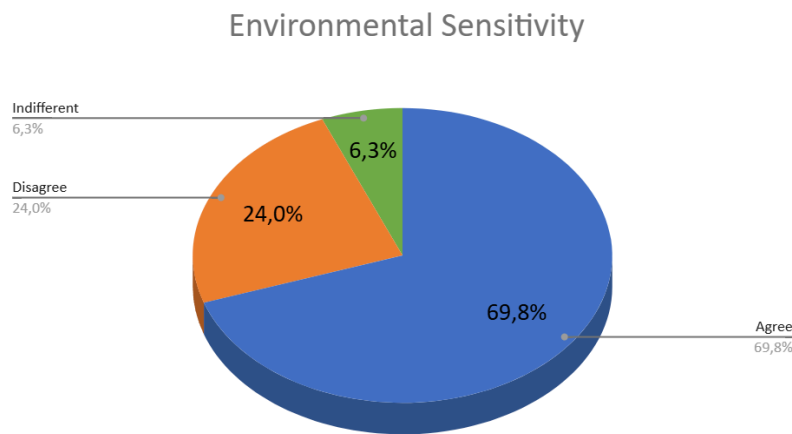
Wild animals like snakes and eagles should not be killed, because they also have the right to survive.



Overall, students describe themselves as being sensitive toward the environment. As shown in Figure 11, a slightly smaller, though still significant, proportion (69.8%)—compared to other categories—agree with the statements related to environmental sensitivity. For instance, in item A5, “*I consider myself to be very sensitive toward the environment,*” 75% of the learners agree. However, when it comes to reading about nature or watching environmental programs, the reported frequency is lower. Figure 12 shows that 37.5% of students ( $n = 9$ ) report not watching television programs related to environmental topics. This tendency is even more evident in reading habits, where 62.5% of the surveyed students disagree with reading books or magazines about nature, indicating limited engagement in this specific activity.

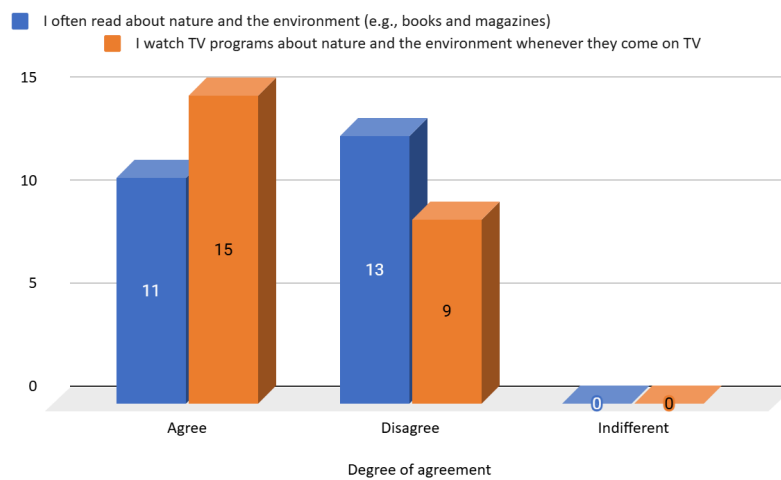
**Figure 11**

*Environmental Sensitivity.*



**Figure 12**

*Reading About the Environment vs. Watching TV Programs About Nature.*



**6.4 Behavior: Reported and Observed Actions**

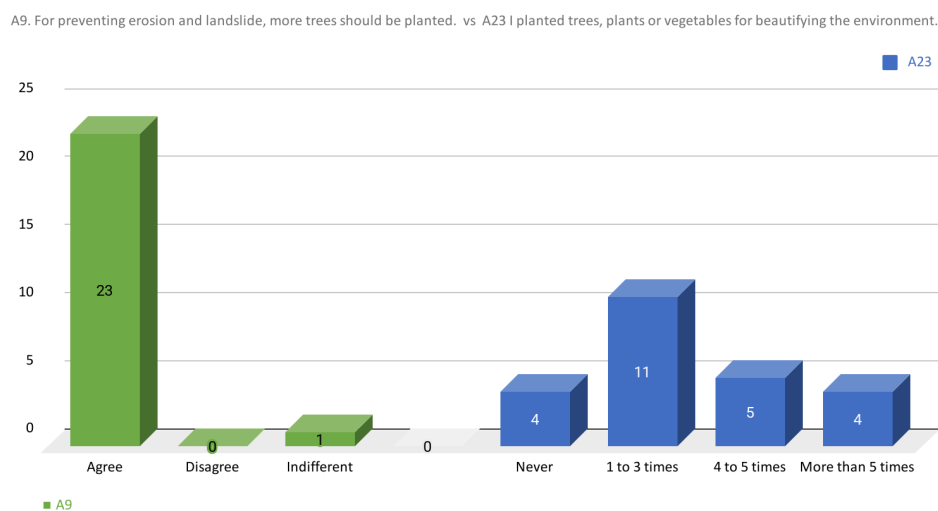
The results suggest that, following the development of environmental concepts and a growing affection toward the natural world, observable changes in student behavior emerge, as evidenced through teacher interviews, classroom observations, and surveys. These outcomes are reflected primarily in concrete actions related to living organisms, water

conservation, and waste management. However, persuasive actions such as discussing environmental topics with others, appear to a lesser extent, and the majority of these behavioral changes can be described as partial rather than transformative.

Regarding pragmatic actions, teachers report that students show enthusiasm and interest in environmental activities, particularly those related to institutional beautification, such as planting trees, creating gardens, and participating in cleaning initiatives, generating actual responsible behaviors. These activities appear to motivate students and engage them in collective efforts toward environmental care. These statements are further supported by survey data showing that students report engaging in practices related to planting trees and plants mostly 1 to 3 times in the last year (see Question A9, Figure 13). In alignment with teachers’ observations, these findings point to the need for continued efforts to strengthen such practices.

**Figure 13**

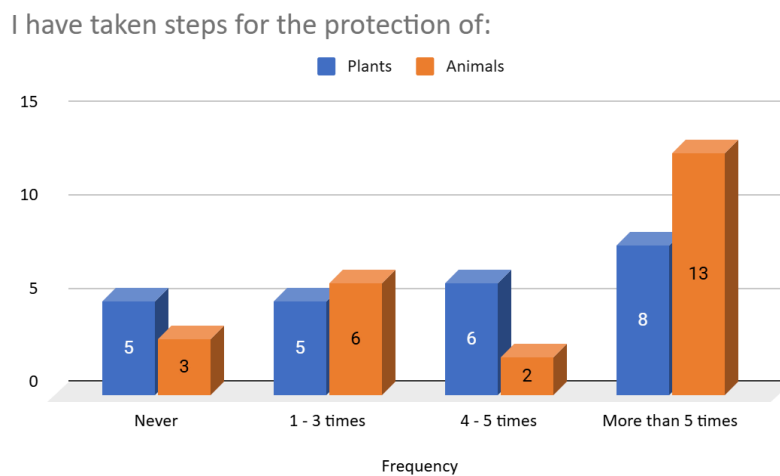
*Willingness to Plant Trees vs. Actual Action Taken.*



Concerning the protection of living organisms, the results indicate that students report engaging more frequently in practices aimed at protecting animals than plants. As shown in Figure 14, more than half of the participants (54.2%) state that they have taken actions to protect animals such as homeless dogs, cats, and birds more than five times. In comparison, a smaller proportion (33.3%) report protecting plants with the same frequency. Additionally, 25% of students indicate protecting plants 4 to 5 times. For the 1 to 3 times range, 20.8% report actions related to plant protection and 25% to animal protection. Finally, 12.5% ( $n = 3$ ) and 20.8% ( $n = 5$ ) of the participants report never engaging in practices to protect animals and plants, respectively.

**Figure 14**

*Protection of Plants and Animals.*

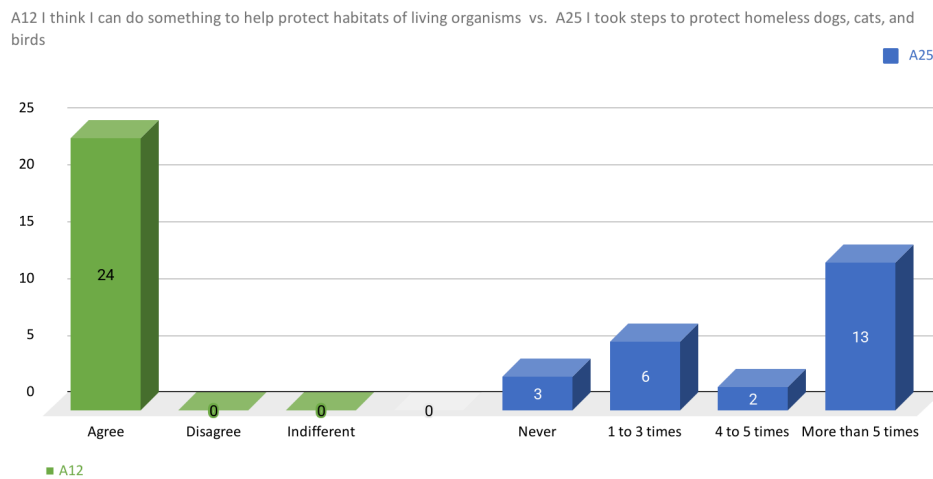


Furthermore, with respect to the fauna, all of the students affirm that there are actions they can take to protect the habitats of living organisms. When compared to the actions they actually carry out, more than the half of them (54.2%,  $n = 13$ ) indicate taking steps for the protection of mainly animals more than five times, followed by 25% who report doing so 1

to 3 times, and 8.3% who mention doing so 4 to 5 times. The remaining 12.5% ( $n = 3$ ) report never having taken actions to protect habitats as illustrated in Figure 15.

**Figure 15**

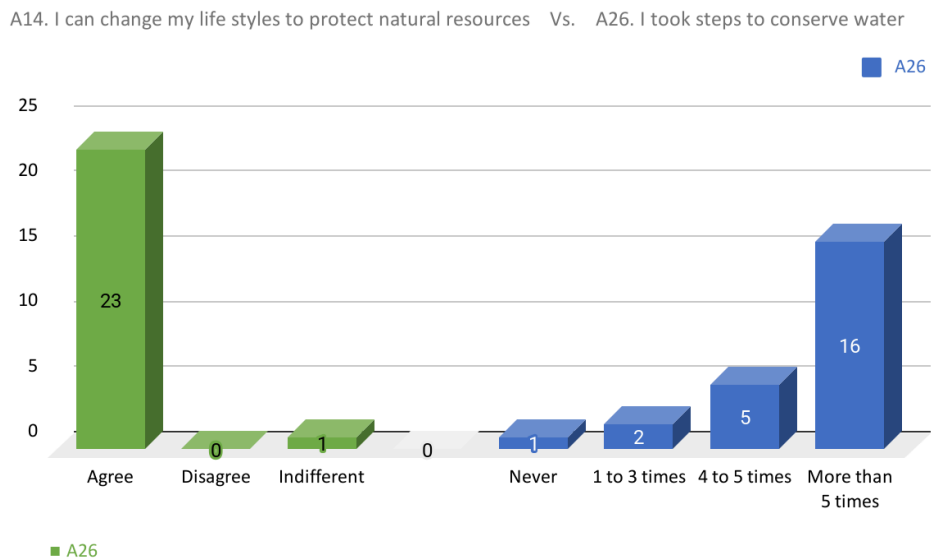
*Ability to Protect Natural Habitats of Living Organisms vs. Protection of Animals.*



Another key result, identified primarily from the teachers' statements, concerns water conservation. One teacher notes a considerable change of behavior related to water-saving habits, such as closing unused taps within the institution in order to reduce water waste. This aligns with the results that Figure 16 illustrates, where almost all of the students ( $n = 23$ ) report being able to change their lifestyle to protect natural resources such as water. Subsequently, the same number of students ( $n = 23$ ) indicate taking concrete actions to conserve this resource through different measures.

**Figure 16**

*Willingness to change lifestyle vs. Actual Water Conservation Actions.*



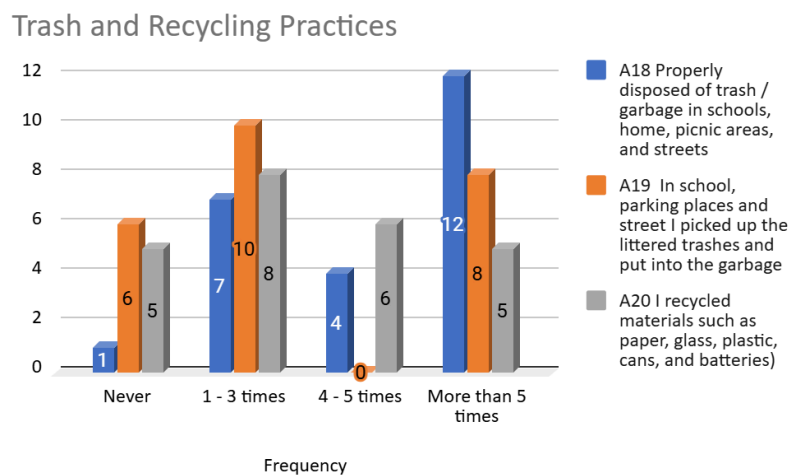
As a final consideration regarding physical actions, teachers report students’ environmentally responsible behaviors in relation to waste management. These actions are also observed during class sessions, where on some occasions students show interest in their surroundings by taking small actions, such as picking up litter at the end of the lesson to leave the classroom clean before leaving. In relation to the aforementioned, the survey shows that, regarding trash disposal and recycling practices, most students report disposing of their own garbage in bins: 12 students (50%) state doing so more than five times, while only 1 student (4.2%) indicates never doing it. The remaining participants indicate doing it 1 to 3 times (29.2%) or 4 to 5 times (16.7%).

In contrast, the frequency is lower when referring to picking up others’ garbage. Specifically, 41.7% state doing so 1 to 3 times, 33.3% ( $n = 8$ ) more than five times, and 25% report never engaging in this practice. With regard to recycling, responses are more evenly distributed: 20% ( $n = 5$ ) demonstrate recycling more than five times, while the same percentage (20%) indicate never doing so. The largest group (33.3%) state recycling 1 to 3 times, followed by 25% who report doing it 4 to 5 times. Compared with the other practices,

recycling presents the lowest reported frequency. These distributions are represented in Figure 17, which provides a visual comparison of the presented frequencies across practices.

**Figure 17**

*Trash and Recycling Practices.*

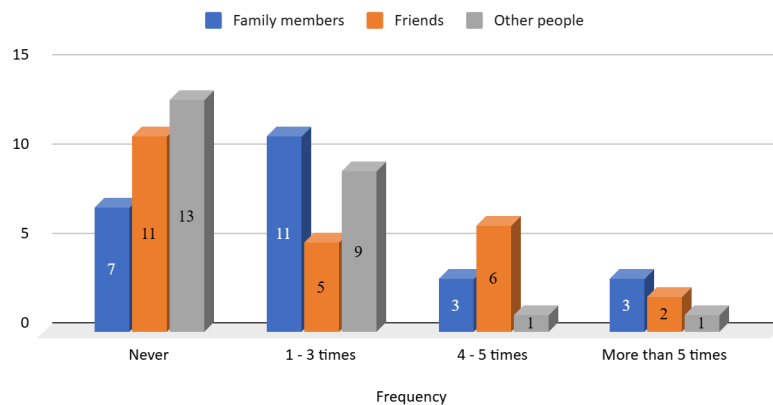


At the same time, a significant finding regarding persuasion behaviours is that, when it comes to discussing what individuals can do to protect or avoid harming the environment, students show a relatively low tendency to engage in such conversations. As illustrated in Figure 18, students are more likely to talk about environmental issues with their families rather than with friends or other people, with 17 participants (70.8%) affirming that they do so, as seen in Figure 19. In contrast, 45.8% and 54.2% report never discussing environmental behaviors with their friends or with other people, respectively.

**Figure 18**

*People Addressed to Protect the Environment.*

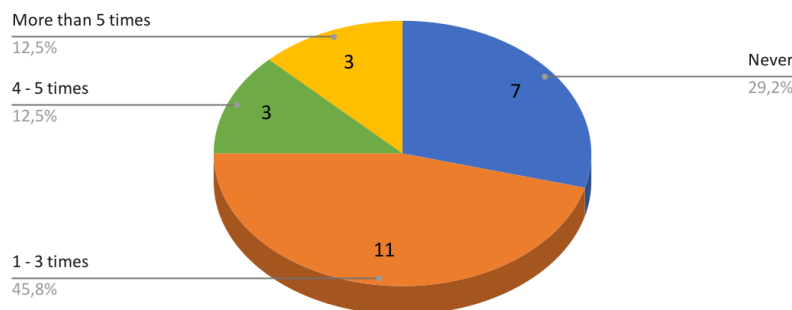
People I talked about what they do to protect and/or not to harm the environment



**Figure 19**

*I Talked With Family Members about Environmental Protection.*

A30 I talked with family members about what they can do to protect and/or not to harm the environment



However, while students show willingness to participate in these practices, according to the interviews, their commitment often depends on teachers’ supervision and reminders. This was evident during classes, where students collected classroom litter primarily when instructed by the teacher. This unveils some of the challenges that will be further discussed below.

### **6.5 Challenges: Constraints and Limitations in Ecoliteracy Implementation**

Last findings relate to the challenges observed in developing Ecoliteracy, which include class constraints, students' need for continuous supervision, and, most importantly, the lack of both monetary and material resources. Regarding class restraints, classes are scheduled for either 55 or 110 minutes; however, interruptions and distractions, both from within the classroom and external noise, often make it difficult for students to maintain concentration. Furthermore, the group consists of 35 students. Although most team activities and presentations allow opportunities for participation, in some cases, the size of the group and limited time prevents all students from contributing or sharing their perspectives.

In parallel, the behavioral changes presented before are not completely consistent. In some cases, students do not demonstrate significant behavior shifts during class, and certain environmental issues are only perceived as problems within their own communities, limiting their initiative inside the classroom. Despite this interest, there are notable limitations in the development of a deeper ecological awareness. While students often participate willingly in activities, their involvement tends to depend on external guidance and supervision.

For example, one teacher states that students may plant trees or help with cleaning projects, but they do not always maintain these efforts over time. Teachers observe that students require frequent reminders and corrections, indicating that ecological responsibility is not yet fully internalized as part of their own initiative. This can be seen during the interventions, where students collected classroom litter primarily following the teacher's instructions. Similarly, this situation is reflected in Figure 17 (Trash and Recycling Practices), where students report mainly picking up their own trash rather than that of others.

A final result concerns the lack of resources and the challenges it entails, mainly the absence of classroom materials, limited access to technological tools for students, and

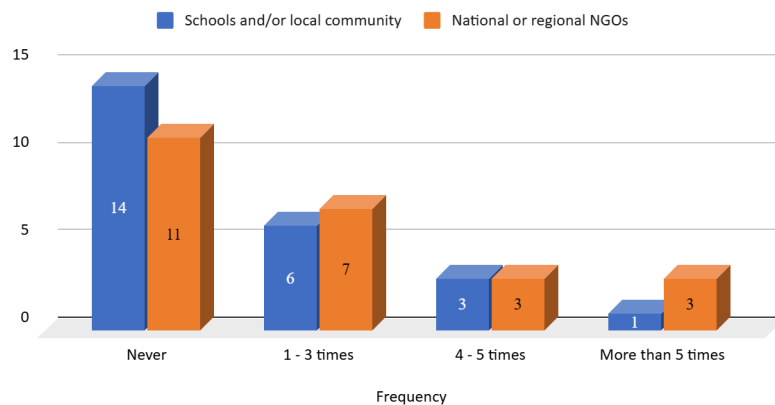
underfunding that affects various class projects. Teachers perceive that the technological environment is not fully equipped to develop innovative classes, a situation also experienced during the interventions when problems with the videobeam led the class to adopt a more lecture-based format. Furthermore, when referring to technological tools, this deficit is not just spotted inside the classrooms but is also evident in students' homes, where some of them don't have computers or cellphones to accomplish virtual activities.

In this regard, the interviewed teachers highlight a shortage of financial resources, which results in insufficient funding for transversal initiatives such as environmental projects. This limitation manifests in the lack of durable, high-quality materials required for project implementation, as well as in the general underfunding of environmental activities. This situation may also explain why, as shown in Figure 20 in questions A27 and A28, students demonstrate a low disposition to donate money to schools, communities, or national organizations. More than half of the participants (58.3%,  $n = 14$ ) declare never having donated to national or regional NGOs working on environmental issues. In contrast, 25% indicate having donated at least 1 to 3 times, followed by 12% who report doing so 4 to 5 times, and finally, a small proportion (4.2%,  $n = 1$ ) who state that they had contributed more than five times.

### **Figure 20**

*Donations to Organizations Working On the Environment.*

Organizations working on the environment that I have donated money

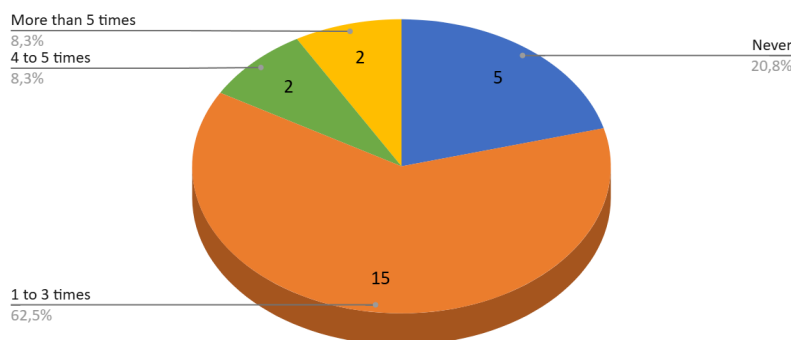


Despite these monetary difficulties, interviewed teachers indicate that students do make donations and are characterized by goodwill, creativity, and collaborative work with professors, whether through donations or innovative problem-solving for environmental purposes. These statements are supported by the survey responses, where students state they contribute to creating recycling bins even without sufficient resources, as reflected in Figure 21, where 62.5% report engaging in this activity at least 1 to 3 times.

**Figure 21**

*Creation and Placing of Recycling Bins.*

A21 I helped to create and place recycling bins

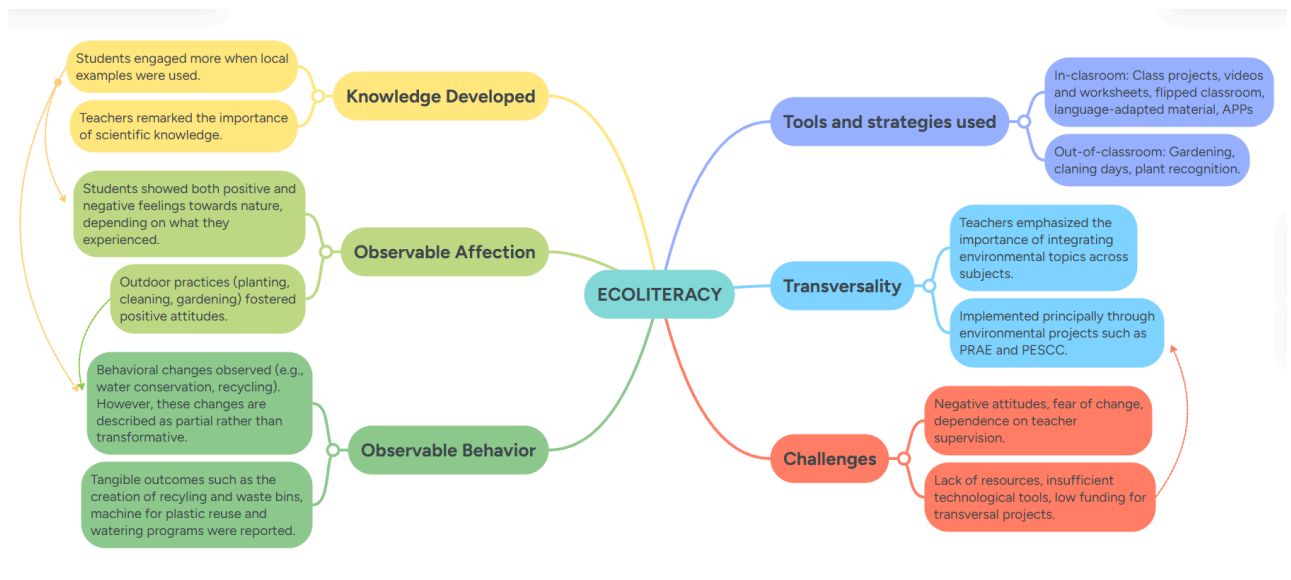


7. Discussion

This chapter outlines the discussion and implications of the findings obtained in this study. In this section, the results are compared and contrasted in relation to their alignment with the lit review and the theoretical and conceptual framework presented at the beginning of this dissertation. The purpose of this study was to design and carry out a didactic proposal that aimed to enhance Ecoliteracy into an EFL classroom in a public educational institution in Bucaramanga.. For this analysis, all the results were triangulated and reviewed from the three main domains of Ecoliteracy. Moreover, the present work studied students and teachers perspectives, behaviors and opinions regarding the fostering of environmental awareness in education.

Figure 22

Graphic Summary of Findings



### **7.1 The Importance of Contextualized Environmental Knowledge**

The results of this study align with broader discussions on globalization and the educational goal of incorporating environmental issues and sustainability into the EFL classroom. As indicated by Putri (2018), eco-literacy strategies and institutional curricula have been joining forces in order to transform students into global citizens that start contributing to making their communities (school, neighbourhood, city, etc) healthier and more environmentally sustainable, both in the short and long term. Similarly, the findings connect Adawiah, Rabiatul & Esa, Norizan, (2013), who conceptualize eco-literacy not only as knowledge but also as the ability to appreciate and be aware of the environment, human interactions with it and, even more, the responsibility that arises from such awareness. In this regard, the attitudes and practices identified in the present research reflect the relevance of eco-literacy in the academic context.

Findings reveal that teachers rely on text books or given plannings to introduce the majority of environmental concepts, resonating with Putri's (2018) view that teachers in training have not yet been introduced to a proper environmental education. (p.337). However, the evidence also engages with Mercer et al. (2022, pp. 10–11, 402–403), who contrast that idea pointing out that educators do not need expert scientific knowledge to address environmental issues but can instead cultivate an environment of shared learning and discovery with their students. This comparison highlights two perspectives that are relevant to the results: on the one hand, teachers are required to follow institutional and ministerial guidelines, and on the other, they seek autonomy to adapt eco-literacy practices to their classrooms.

Overall, following the ideas presented by Farahiba et al. (2025), teachers want to be able to adapt the material taught to their local contexts in order to have a better understanding

and engagement from the students about environmental problems. Participants remark that audiovisual tools are one of the most important instruments when it comes to educating students on Ecoliteracy-related concepts. This reinforces the vision proposed by Kopnina & Saari (2019), where audiovisual material, mainly documentaries, appears as an excellent instrument for introducing, explaining, and reflecting on environmental problems. For example, plastic issues are addressed in the audiobook used by Fabio, PLASTIC. Furthermore, contrary to the ideas presented by Brito Miranda et al. (2017), where alternatives as “playfulness” activities to teach environmental notions are suggested, teachers highlight the importance of worksheets, a more traditional perspective, to present environment-related topics

Nevertheless, in terms of concepts and strategies that still need to be implemented, the reinforcement of scientific knowledge is an important suggestion that aligns with what Otto, S. & Pensini, P. (2017) expose, as it is the first step in order to generate an affection towards the environment, then a change of behavior, and in sum, the flourishing of an environmental awareness. Furthermore, the acquired environmental competences by students have to entail both, individual’s literacy on ecological behavior and factual knowledge (Erdogan, 2009, p.62). In consequence, comprehending the environmental concepts, allows students to take action based on evidence with critical responsibility. That is mainly what Liefländer et al. (2015) and Roczen et al. (2014) argue: evidence suggests that environmental knowledge and nature connectedness positively influence pro-ecological behavior, and that educational initiatives can effectively promote such behaviors. In sum, before building affection towards nature and producing observable changes of behavior, previous environmental knowledge is key for the students.

## 7.2 Fostering Affection through Outdoor Spaces

As stated by Erdogan, (2009) “younger people seemed to show more concern, sensitivity, attitudes and willingness to act for the environment than older ones” (p.60). For that reason it is key to develop Ecoliteracy in early ages. Primary and secondary schools are important places to develop environmental knowledge in order to obtain firstly an environmental affection. In order to enhance this affection, outdoor activities play an important role in connecting students with the natural world and the generation of positive feelings as supported by Hammarsten et al. (2019).

The most significant aspect of the findings regarding affection, is the importance that teachers and students assign to outdoor environmental activities. Practices such as gardening resonate with the strategies proposed by Hammarsten et al. (2019), in which the concept of the “forest garden”—a natural ecosystem designed for specific contexts or institutions—elicits diverse reactions among students but, overall, promote environmental consciousness. Another example of outdoor activities mentioned by Participant 4 is field trips, which are closely related to “Summer Nature Education Programs.” According to Erdogan (2011), these out-of-classroom activities allow learners to experience nature in its authentic context, thereby enabling behavioral change. In sum, when the perspectives of Gunansyah et al. (2020) are considered alongside the strategies proposed by participants, it is possible to perceive the motivation that teachers demonstrate to enhance environmental consciousness through multiple unconventional pedagogical approaches that cultivate learner engagement with nature.

According to Farahiba et al. (2025), the positive responses of students are obtained when the teaching environment encompasses creativity, dialogue and the interaction with real environmental settings (p. -349). Allowing students to foster an environmental sensitivity;

which is, in fact, one of the most important aspects to generate a change of behavior. That was mainly what Erdogan (2009) claimed “the higher the students hold environmental sensitivity, the more they engage in responsible behaviors for protecting the environment” (p.189). Nevertheless, it is important to note that negative feelings are also part of the process of developing environmental attitudes. This is due to the fact that the affection towards the environment can be positive or negative, but in general, students need to stress the importance of nature, how to coexist with living organisms, and how to avoid disturbing them. (Hammarsten, 2019, p. 235).

Finally, change is recognized by students and teachers as the most important outcome when learning about nature and environment. To generate true change, learning must be participatory and experiential (Orr 1992, p.91). And by providing students with the spaces since their childhood, allows them to develop curiosity about the world that surrounds them. Most of the people who define themselves as environmentalists, had experience in the natural world at an early age (Orr, 1992, p.88). This is the essential, enhancing Ecoliteracy when students are curious and absorbent because, connectedness to nature is reasoned to be a necessary prerequisite for engagement in ecological behaviors” (e.g., Kossack and Bogner, 2012, Roczen et al., 2014, Frantz and Mayer, 2014, cited on Otto, S. & Pensini, P., 2017, p. 02). Consequently, after developing affection toward the natural world, tangible changes of behavior can be recognized as explained below.

### **7.3 Environmentally Responsible Behavior**

The results obtained in this study show that Ecoliteracy is not only about comprehending how the world works but to have a life in consequence of this knowledge, as Orr (1992, p.87) affirms. The findings suggest that the conjunction of knowledge and affect leads to generate a change of behavior, which corresponds with Otto and Pensini’s (2017)

argument that eco-literacy can foster enthusiasm but does not automatically generate the affective engagement required for autonomous action. The affective dimension is key, as shown by Erdogan, (2011) on its affective disposition and responsible behavior studies; Is the anchor of consistent behaviors' boat, needed in order to ground inside that land (that concept) and stay there.

In line with Adawiah and Esa (2013), who argue that Ecoliteracy entails not only the h the viewsdevelopment of knowledge but also a sense of responsibility, the results from teacher interviews highlighted the implementation of projects and strategies such as recycling initiatives or routines like cleaning the classroom before leaving. These examples, identified in the data, illustrate what can be understood as transversality, in which everyday practices contribute to the development of ecological responsibility and awareness. Although these practices may appear to be simple strategies, the results show that they embody core principles of Ecoliteracy and extend their impact beyond the classroom.

Nevertheless, various challenges were identified in the results. One of the most significant is that although a change in behavior is observed, it often requires teacher supervision, and a complete commitment from the students is not evident.. This resonates with the views of Mercer et al. (2022), who suggest that negative attitudes and actions among students may stem from a sense of helplessness, resistance to change, unconcern, or confusion (pp. 10, 402). Additional challenges, particularly those related to transversality, are discussed below.

#### **7.4 Transversality: Opportunities and Challenges**

As stated in the previous category, the interrelation of the environmental concepts and the different subjects directly affects the knowledge that students acquire, which corresponds

to the position expressed by Erdogan (2009), whereby such integration contributes to the development of positive environmental attitudes and responsible behaviors.

In accordance with the views of Correa (2022), the transdisciplinary integration of the different areas enables students to blossom diverse skills and mindsets, combining knowledge, society, culture, and science. Moreover, through this articulation, students are able to generate awareness and apply acquired competences to produce outcomes that have a social function in their real context, as we see in the material created during the Environmental Project; this aligns with the arguments advanced by Odremán (2002). Following the same line, one of the remarkable examples could be the institutional projects such as the PRAE and PESCC which highlight transversal connections and resonate with the notion of transversality as defined by Pantoja (2017). Nonetheless, challenges arise when developing environmental topics and transversal projects. The challenges identified align with those reported by Mercer et al. (2022), mainly time limitations, attitudes of both students and teachers, and a lack of training and awareness.

These findings are consistent with the claims of Acosta Castellanos et al. (2020), who identified a lack of institutional support, pedagogical materials, stimulus, and adequate spaces for the implementation of Ecoliteracy. Such limitations are largely the result of economic underfunding and insufficient preparation to address environmentally related concepts, thereby reinforcing the conclusions of Blanchet and Reilly (2013). For instance, results show low tendency when contributing to the environment in an economical way, this directly affects the students' attitudes since income has been also observed to have an impact on affect (Erdogan, 2009, p.61). Nonetheless, echoing the perspective of Hammarsten et al. (2019), the recognition of the importance of nature and the affective connection developed towards it

motivates both teachers and students to continue seeking ways to foster Ecoliteracy, in the pursuit of a strong environmental awareness.

### **8. Conclusion**

The objective of this study was to promote Ecoliteracy through the teaching of English as a foreign language in a public institution in Bucaramanga. To achieve this, the focus was placed on stimulating students' affective dimension and connecting it with EFL in order to foster environmental awareness. The findings of this study highlight three key aspects: (1) The importance of contextualized concepts when teaching environmental knowledge, (2) The role of outdoor activities in fostering affection and subsequent behavioral change, and (3) The significance of transversality in enhancing Ecoliteracy, along with the challenges it entails.

The results showed that, when environmental concepts are taught with reference to local realities, students feel more committed and engaged if the topics such as environmental issues are represented with local examples. Relating issues such as pollution, waste management, or conservation to their own realities encourages students to take these matters seriously and develop a stronger connection with the natural world. This affection may be expressed through positive or negative, depending on students' attitudes, feelings and reactions; However, what matters most is understanding how the natural world works and how to coexist with it. Once knowledge is developed and affection bonds are established, students appear more willing and able to change everyday behaviors to care for the environment. These changes were observed in actions such as conserving water, planting, or creating recycling bins. Nevertheless, in some cases, teacher supervision or guidance was required, raising the question of whether students would act autonomously without such support.

Additionally, teachers emphasize that environmental awareness should not be treated as an isolated matter but rather developed through broad articulation across different subjects. Mainly, they highlight the importance of transversality in carrying out environmental activities. However, several challenges emerged when following this path, including student attitudes, fear of change, and, most significantly, the lack of resources. These resources are essential not only for innovative teaching and supporting transversal projects but also for producing materials and achieving tangible outcomes. Despite these limitations, both students and teachers demonstrated a willingness to overcome obstacles and showed goodwill in their efforts. This reflects their recognition of the importance of education and the environment, as well as their shared responsibility in fostering environmental awareness for present and future generations.

For us, this study represented the final outcome of everything we learned throughout the academic program. It enriched our transversal knowledge in different subjects and allowed us to integrate pedagogy and research, showing the importance of a research-oriented mindset to complement English teaching. Regarding the participants, they were always open to collaboration and enthusiastic during our study, showing kindness and commitment. They were aware that we were not only their Pedagogical Practicum teachers but also the researchers of a project aimed at contributing to society, from our small to our larger communities, this made them proactive and curious about our proposals. In addition, the teachers consistently demonstrated a positive disposition, as they appreciated being acknowledged and heard.

In sum, this research project is groundbreaking and valuable for future teachers who wish to implement, evaluate, or further understand Ecoliteracy in the Colombian context. Although environmental issues concern all citizens, this study is particularly relevant given

the limited number of previous studies on Ecoliteracy within the field of ESL in Colombia. Moreover, as demonstrated throughout the research, this study is not only useful for English or language teachers but also for educators in general who seek to integrate Ecoliteracy into their practice, fostering transversality between education and environmental awareness.

### **8.1 Limitations and future research**

While findings provide valuable insights, it is important to recognize the methodological and contextual factors that may have influenced them. Firstly, we were supposed to gather data from the Prueba Saber exam from the school database, so we could broaden the knowledge dimension, supporting it by quantitative data. However, we found out that after some issues presented in past exams, since the pandemic, this specific 9th grade group was evaluated in certain areas but natural sciences. This led to a lack of quantitative data that might support the knowledge category. Although this presented a constraining factor, it did not preclude the research from providing substantive findings; However, we would advise to further analyze these kinds of state exam answers for future research.

Another point that should be analyzed is the notion of schools as kids 'second home', as this may have slightly biased the results by overlooking the primary role of the home environment prior to the school one. Although Ecoliteracy can foster enthusiasm, it does not necessarily translate into the affective engagement needed for self-directed behavior, that's why the pre-school home context is pivotal for embedding Ecoliteracy concepts during the early years of cognitive development. Future research could be carried out with larger samples, focusing on the implementation of outdoor activities, new strategies, or the review of curricula and evaluation tests related to nature. This would contribute to nurturing the seed of Ecoliteracy, allowing it to grow strong roots that foster affection and sustain the branches of behavior, ultimately shaping a diverse landscape of environmental consciousness.

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## **10. Annexes**

*Annex A: [Observation grid](#)*

*Annex B: [Teachers' interview](#)*

*Annex C: [Survey](#)*

*Annex D: [Lesson plans](#)*

*Annex E: [Worksheet Lesson plan #1](#)*

*Annex F: [Padlet](#)*

*Annex G: [Memo](#)*

*Annex H: [Images](#)*