



**Pontificia Universidad
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ESMERALDAS

**ESCUELA DE EDUCACIÓN
CARRERA DE PEDAGOGÍA DE LOS IDIOMAS NACIONALES Y EXTRANJEROS**

**RESEARCH REPORT
ACTIVITIES BASED ON THE TOPIC OF SUSTAINABILITY TO IMPROVE THE
ENGLISH PRODUCTIVE ABILITIES**

**INFORME DE INVESTIGACIÓN
ACTIVIDADES BASADAS EN EL TEMA DE LA SOSTENIBILIDAD PARA
MEJORAR LAS HABILIDADES PRODUCTIVAS DEL INGLÉS**

**PREVIO AL GRADO ACADÉMICO DE:
LICENCIADA EN PEDAGOGÍA DEL IDIOMA INGLÉS**

**LINE OF INVESTIGATION:
EDUCATION, COMMUNICATION, CULTURE, VALUES, AND SOCIETY**

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March, 2024

Trabajo de pregrado aprobado luego de haber dado cumplimiento a los requisitos exigidos por el reglamento de la PUCESE previo a la obtención del título de **Licenciada en Pedagogía del Idioma Inglés.**

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DEDICATORIA

Se lo dedico a mis queridos Norma y José, mis padres, con su valioso esfuerzo logro obtener este título universitario que en gran parte es gracias a ellos. Se lo dedico a mis hermanos Andy Paúl y José Manuel Chasing Guamaní, el logro de uno es el de los tres, destaco la importancia que tienen en mi vida con este trabajo de tesis, ya que, han sido también mi motivación a lo largo de este camino en la universidad.

AGRADECIMIENTO

Gracias Padre “todo en Ti es regalo, todo es Don” (Luispo, 2021, 1m20s).

Gracias mi querido Jesús, gracias por ser mi roca firme, mi fortaleza y mi refugio.

Gracias mamá y papá por motivarme a seguir adelante y por darme ánimos siempre, sobre todo en aquellos momentos no tan buenos. Gracias por su ejemplo de vida, por su valor y su amor. Mi admiración y respeto hacia ustedes.

Estoy muy agradecida con mis profesores, por sus consejos brindados con estima, por la paciencia y consideración hacia mí. A mi asesor Msc. Jose Suarez y a mi profesora de investigación PhD. Haydeé Ramirez muchas gracias por su generosa ayuda y orientación para completar este trabajo de tesis.

A mis queridos compañeros, amigos de la universidad, también les digo gracias. Ha sido un bonito regalo para mí conocerles y culminar juntos este tramo del camino. Abundantes bendiciones del Señor. ¡Ánimo!

A la Hna. Marcela Mafla, rectora de la Unidad Educativa La Inmaculada, gracias por permitirme llevar a cabo dentro de la institución las acciones necesarias para el desarrollo de esta tesis.

Quiero agradecer de manera especial a mi apreciado amigo Pbro. Víctor Hugo Morales, por su ayuda, apoyo espiritual, y especialmente, por acompañarme en sus oraciones.

A todos los que fueron parte de esta etapa de mi vida y a aquellos que amablemente me brindaron palabras de aliento, les digo desde el fondo de mi corazón, gracias infinitas.

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ABSTRACT

People live in a world that faces severe environmental changes, so it is important to take into consideration teaching strategies that incorporate activities based on the theme of Environmental Sustainability in English lessons for this reason the objective of this study was to propose some useful activities based on the topic of sustainability to improve English productive abilities. A mixed research was carried out that allowed a better and more comprehensive understanding of the phenomenon studied. The methods used were the analytical-synthetic, which allowed the analysis and synthesis of the information found through the techniques, and the hermeneutic, which allowed the interpretation of the captured phenomena. In addition, the inductive-deductive method was used, which also allowed better reasoning of the results. The sample were 44 people, 40 students and 4 teachers who a survey and an interview were applied. Furthermore, with the documentary review technique, it was possible to analyze documents related to the case studied that served as a guide, having a clearer idea of what was sought to be achieved. Five activities were designed focused on the development of oral and written expression, taking into account the level of the students, bases and previous knowledge and interest on thematics such as: saving water/energy, planting trees and recycling. These activities at the same time promote an improvement in the way we act with our planet, for that reason, it is relevant to use activities based on sustainability in English lessons nowadays.

Keywords: productive skills, writing, speaking, sustainability, sustainability-based activities, children.

RESUMEN

Las personas vivimos en un mundo que enfrenta severos cambios ambientales, por lo que es importante tomar en consideración estrategias de enseñanza que incorporen actividades basadas en el tema de Sostenibilidad Ambiental en las clases de inglés, por tal motivo el objetivo de este estudio fue proponer algunas actividades útiles basadas en el tema de sostenibilidad para mejorar las capacidades productivas inglesas. Se realizó una investigación mixta que permitió una mejor y más integral comprensión del fenómeno estudiado. Los métodos utilizados fueron el analítico-sintético, que permitió el análisis y síntesis de la información encontrada a través de las técnicas, y el hermenéutico, que permitió la interpretación de los fenómenos captados. Además, se utilizó el método inductivo-deductivo, que también permitió un mejor razonamiento de los resultados. La muestra fue de 44 personas, 40 estudiantes y 4 docentes a quienes se les aplicó una encuesta y una entrevista. Además, con la técnica de revisión documental se logró analizar algunos documentos relacionados con el caso estudiado que sirvieron de guía, teniendo una idea más clara de lo que se buscaba lograr. Se diseñaron cinco actividades enfocadas al desarrollo de la expresión oral y escrita, tomando en cuenta el nivel de los estudiantes, bases y conocimientos e intereses en ciertas temáticas como: ahorrar agua/energía, plantar árboles y reciclar. Estas actividades al mismo tiempo promueven una mejora en la forma en que actuamos con nuestro planeta, por eso es relevante utilizar actividades basadas en la sostenibilidad en las clases de inglés hoy en día.

Palabras clave: habilidades productivas, escritura, expresión oral, sostenibilidad, actividades basadas en la sostenibilidad, niños.

Introduction

Theme presentation

Sustainability is one of the less popular but important topics that almost all schools do not address, it is not stated in the curriculum and is a very unknown theme for children and teenagers in the English subject. The conservation of ecosystems, recycling, social justice, and equity are topics that sustainability covers and there is a lot of ignorance on the part of learners who should be educated on these topics in order to help students change the way they act and generate a conscious society regarding issues that are addressed in sustainability.

People live in a world that increasingly faces severe environmental changes, for which it is important to take into consideration teaching strategies that incorporate activities based on the topic of sustainability in lessons in the field of English in order to improve the learning of that language and increase knowledge about the topic at the same time.

Sustainability involves balancing economic, social, and environmental development to ensure the long-term viability of the planet and its resources, promoting practices that preserve the environment, foster social equity, and maintain economic viability.

English teachers not only have the mission for only teach English grammar, rules, etc., mathematics teachers teach numbers & operations, and so on but they also can contribute to forming conscious, reasoning, critical, intelligent people who become committed citizens to changing our environment through relating and learning about it. Also, students can learn how to express themselves about problems that go around sustainability. They could talk and write their points of view, improving their English language abilities.

Productive abilities in the English language refer to the skills of expressing oneself effectively through speaking and writing. In terms of productive English skills, in oral activities students practice verbal expression, pronunciation and fluency through interactions with others. On the other hand, writing activities focus on written expression, grammar, vocabulary and organization, allowing students to convey their thoughts and ideas effectively through written text.

This is also adhered to as a commitment to the global objectives that the ONU proposes for the future. There are seventeen issues that become to an urgent call for action by all developed countries and non-developed ones in a global partnership. Sustainable Development

Goals (SDGs) focus on the main principal weakness of our society such as, education, poverty, hunger, inequality, climate change and many others.

Problem statement

Students have many difficulties when expressing themselves about a problem, it is difficult to give opinions about a topic related to sustainability since it has been seen that there is no content related to sustainability within the school curriculum.

It is known that there are really few topics of these treatises in class, so it leads to a lack of knowledge about this subject on the part of the students, in turn this prevents them from having enough vocabulary to express themselves or share ideas by oral communication or even writing.

The care and responsibility of a sustainable world have been lost sight of and this makes it a current problem. Because the students are unaware of the subject, there is also a lack of commitment, care, and preservation of our environment, thus avoiding the development of a sustainable life.

According to what has been mentioned and described, the following problem question is generated: How can activities based on the topic of Sustainability contribute to the productive abilities of speaking and writing?

Justification

It is necessary to design activities based on the topic of Sustainability in the English lessons, it is strongly innovative and necessary because it promotes care and responsibility of human beings and students can grow up being aware of the problems of our environment in the face of what happens on our Earth and how to take actions. But it goes deeper, because these activities will help students develop critical thinking and it leads to that students start to express themselves using words and content according to sustainability. When they learn and develop these activities are starting to concern about their environment, with these activities they can share ideas and help them to produce the language. In this way, they learn English language and about the Sustainability.

Directly, this proposal is based on the problem stated above and it is considered that it can contribute to the development of the English language in students through an innovative manner because with it they can be able to express simple ideas, opinions, they can also improve vocabulary that will help to increase their abilities in English. In turn, students can write basic sentences leading to a completely productive result. So, for that reason I consider this content of sustainable development should be adapted for teaching English.

Objectives

General objective: To propose some useful activities based on the topic of sustainability to improve English productive abilities.

Specific objectives:

- 1) To evaluate students' knowledge and interest in sustainability.
- 2) To collect relevant information related to sustainability through an interview with Nature Sciences teachers.
- 3) To design activities based on sustainability to improve the English productive abilities.

CHAPTER I

1. THEORETICAL FRAMEWORK

1.1 Scientific Theoretical-Foundation

1.1.1 Productive abilities: Speaking and Writing

Speaking and writing are two important productive skills in language learning and teachers can provide students to learn how to practice and manage their productive skills. Speaking is one of the four language skills of a language. It is the way in which students can communicate with others in order to express their needs, thoughts, intentions, hopes and visions using the ability to pronounce words, organize words into sentences or phrases, to choose words that match the topic. Also, speaking is the most used language skill (Torky, 2006).

Speaking is a way of constructing and exchanging meaning through the use of verbal and non-verbal idioms in different situations. According to this definition, it is understood that people can share our thoughts with others orally and that is why communication is often expressed by telling our ideas to others. This is part of our daily life because it is impossible not to express ourselves orally. This also means that as human beings we learn to socialize, developing our vocabulary and confidence when speaking. For that reason, it is important to help students manage a certain level of fluency during their conversations.

On the other hand, mastering writing is essential when learning English as a foreign language. According to Bello (1997), writing plays an important role in language acquisition, as students explore words, sentences, and various components of writing to communicate their ideas effectively. It is very important for children to relate to the spelling of words, this helps them to be able to recognize new sounds and words, even if they do not understand the meaning and structure of a sentence, this will help them gain a broader understanding next time they are related to language.

Furthermore, writing serves as a reinforcement of grammar and vocabulary learned in the classroom. In essence, writing is not solely a method of communication that allows students to express their perspectives and thoughts; it is also a prerequisite for achieving proficiency in other language skills.

The effectiveness of writing relies on several factors that distinguish it from spoken language, encompassing linguistic and pragmatic aspects, as well as the interpretive context

(Nunan, 1999). Writing is a cognitively demanding process that necessitates sustained intellectual exertion over a significant duration (Nunan, 1999. p.273).

1.1.2 English Language Learning

We find a way of understanding in learning, therefore, during the learning process, it can be observed that all people learn but this continues to be the case, some of them learn as fast as they see content or have a slow comprehension process. The manner in how people learn a language integrates the content seen in the classroom and the practice outside the classroom.

A new broad-scope theory of language learning was described, with the following features:

- rapid, robust learning of language from unreliable and noisy data
- most features of adult language acquired by a single learning mechanism
- integrated learning of syntax, semantics, and segmentation
- a working computational model, which can bootstrap to learn language from zero vocabulary
- a firm mathematical basis, linking linguistic theory and learning theory
- an evolutionary account of the origins of language and language learning
- good agreement with a lot of data on child language learning (Worden, 1997).

In this way, taking this as a main criterion, teachers must interpret how a language is acquired. There are some keys that mark the way to teach according to the concepts, if we did not have them it could be a risky challenge that does not contribute but rather intellectually affects the acquisition of a language in learners.

1.1.3 Sustainability

Sustainability is framed in the practice of nowadays generations using natural resources responsibly today so that future ones can make use of them as well (Brundland, 1987). Sustainable development is promoted to achieve peace, dignity, and equality on a healthy planet.

Term that was officially coined in 1987 in response to the social and environmental problems of the planet and this concept also proposed that the richest regulate their consumption levels in order to counteract the negative impact on the planet. These problems were related to industrialization and population growth. Sustainable development refers to the fact that growth

must be achieved while nature and humanity are respected. This means sustainability is achieved when the three fundamental pillars -economic objectives, social responsibility, and environmental protection-are combined for the better.

A few years after the 2010 Millennium Summit, the Millennium Development Goals were agreed upon. It was a road map that pursued the reduction of hunger and poverty, as well as improvements in health, education, living conditions, environmental sustainability, and gender equality. It was the infrastructure to create the 2030 Agenda by the United Nations, which is presented as an action plan in favor of people, the planet and prosperity, which also intends to strengthen universal peace and access to justice.

1.1.4 Theory of Neuroscience

Neuroscience, according to Otkar (2006), is in charge of evaluating the nervous system of the human being, the same one that revolves around consciousness, memory, perception and learning. Neuroscience allows or rather acts as a resource to be able to identify, know and understand how learning works through the study of our brains.

Neuroscience provides information about how children's brains develop, including areas related to language. This allows activities to be designed that align with children's stages of cognitive and linguistic development, optimizing their effectiveness. Neuroscience highlights the influence of motivation and emotions within learning. In this way, by awakening this interest and obtaining positive responses, brain circuits are activated that favor language learning and retention.

This is a theory that favors the present research because students can awaken their curiosity regarding the sustainability of the world since neurons seek to improve this knowledge and require more information and experience. In turn, they are motivated, giving way to a better environment for learning. Precisely, neo-science fundamentally helps the teaching and learning process because it allows the students to know and identify themselves, allowing the interpretation of content, which is acquired in unique ways according to the particularity of each brain.

Neuroscience also allows innovation to strengthen education, since through studies it will be possible to identify new strategies that allow students to obtain lasting learning (Bullón, 2017). This has to do with the development of meaningful learning since by uniting new content with previous bases of knowledge our brain extends its retention capacity, helping learners to maintain the knowledge so that they can later produce what they have learned.

1.1.5 Teaching English through the topic of Sustainability

According to The United Nations (2015) English for Sustainability is an advanced-level course focused on improving English skills related to the theme of Sustainable Development Goals. The emerging field of Education for Sustainability (EfS) aims at educational experiences to facilitate this shift towards more sustainable societies. With this, it is sought that both children and adults, teachers and students, individuals, communities and organizations learn about sustainability as a mission of all for the benefit of nature and society.

There is an indisputable fact and that is that English language teaching lessons should contribute to the promotion of peace and global awareness in the world, including environmental conservation (Cates, 1990; Jacobs & Cates,1999). In this way, environmental education allows students to develop critical thinking so that when they criticize themselves, they become aware of their mistakes and thus begin to take precautions that favor the protection of nature. It should be highlighted that issues of peace and international understanding as themes for language lessons were already being used in textbooks as topics of lessons, but the topic of sustainability is deeper due to the emergency.

Being part of critical thinking, the development of critical reading is crucial to preparing English language learners to participate in protecting the environment. Lazar (1993) affirms that literary texts are truly effective and that they involve students in building a better future.

1.1.6 The Socio-Cultural Approach to Language Teaching

To Vygotsky (1978), social intervention allows people to develop cultural values, beliefs, and problem-solving strategies through dialogues with members of society. Vygotsky says that social factors contribute to cognitive development. In terms of Vygotsky's sociocultural theory, learning is fundamentally a social and cultural process, in which individuals actively construct knowledge through interactions with others and their environment.

Social and historical contexts influence teaching and learning according to Vygotsky's theory, which supports pedagogical and research models that honor the diversity of human beings. This perspective emphasizes the importance of social interactions, cultural contexts, and meaningful activities in facilitating learning and cognitive development.

According to Vygotsky (1978), human beings are social beings whose development necessarily comes from the joint social activity of the human being. He adds that the mental functions of a human are developed by two main categories: inter-psychological which is based

on social relations and intra-psychological which occurs in the learner's mind; this is constantly back and forth. It is more understandable when say that psychological abilities such as memory, attention, the formulation of concepts are manifested in the social sphere and then, progressively, they become a property of the individual.

1.1.7 The Zone of Proximal Development

Vygotsky's Zone of Proximal Development theory focuses on what a student can achieve independently and what they can achieve with the guidance or support of a more knowledgeable person, usually a teacher or peer (1978).

Highlights the importance of collaboration, social interaction and guidance to facilitate learning and cognitive development. In this way, when the student receives structured support from another person with more knowledge, learning becomes more effective. Reference is made to the ability that the student has after receiving the guide to perform a task, this is where it is observed whether he or she has reached the zone of proximal development, since there are two zones, the zone of current knowledge that represents the tasks and activities performed by the student and can be performed competently alone and the potential knowledge that represents tasks and activities that are beyond the student's current level of competence.

With ZDP it can be related the current knowledge to the previous knowledge of students in terms of sustainability which was carried out through a survey applied to students, and the potential development to what they can reach as new content and skills by the guidance of teacher for specific sustainability activities.

1.1.8 Meaningful Learning

Ausubel's theory of meaningful learning presents a different strategy for knowledge retention. Ausebel (1968) states that meaningful learning occurs when new information is integrated with existing knowledge and concepts in the student's cognitive structure, instead of memorizing. This theory provides great support to this investigation since the main objective is to propose sustainability-based activities where students develop tasks of new information with a background already known and mastered.

He also proposed some strategies for the success of meaningful learning, and there are involved concepts such as: advance organizers, and the organization of knowledge. Advanced organizers are presented before new content, allowing students to activate existing knowledge structures related to the topic. Advanced organizers facilitate meaningful learning by helping students understand the underlying structure of the material and make connections between new

and existing knowledge. On the other hand, organization of knowledge will help weave networks that lead from the general to the new, which would be the most specific. This, according to Ausubel, allows for better retention since small pieces of new information are connected to a network of prior knowledge, which is the basis for students before learning new content.

1.1.9 The Progressive Critical Approach to Educational Innovation

This approach originates through educational innovation (Barraza, 2005), but materialized in educational intervention. It articulates research with intervention in an institutionalized framework of professionalization, which leads to professional autonomy.

This approach covers Critical Social Science and Critical Educational Theory and uses them as a horizon to explore the improvement of education. Educational improvement must be characterized by professional and social autonomy. The agents, therefore, must configure these aspects for the desired purpose of any educational intervention. Apart, these have their central development strategies in dialogue and collaboration.

Professional autonomy must be understood as an emancipatory process that seeks professional and social liberation (Contreras, 1999). This is lived in a collective way that tries to transform the institutional and social conditions that circumscribe and signify educational practices.

On the other hand, educational innovation proposes to introduce new areas or curricular contents, materials, technologies, approaches, and strategies within the teaching-learning process, as this paper is intended to work on a new topic such as sustainable development in our English classes.

1.2 Antecedents

The following study is entitled “Implementing Environmental Education to foreign language teaching to Young Learners” (Gürsoy, 2010). This study investigates the integration of environmental education into English as a foreign language (EFL) lessons at the primary level, focusing on Turkish educational initiatives. The main goal is to explore the potential benefits of incorporating environmental content into language learning contexts, specifically examining its impact on students' environmental awareness and language acquisition. The findings of the study suggest that integrating environmental education into EFL lessons at the

primary level yields multiple benefits for students. Firstly, students exhibit a great environmental awareness, demonstrating increased knowledge and understanding of environmental issues. Secondly, the integration of environmental content into language learning enhances the meaningfulness and relevance of language acquisition, resulting in improved language proficiency and engagement.

“Teaching English for young learners at primary school based on the environmental approach” (Dahniar et al, 2019) corresponds to an innovative idea for creating a model for teaching English to children based on the environment. It highlights that learning English based on environmental care improves the character of students' care for the surrounding environment, through the material taught by teachers, practicums, and activities related to environmental education can influence students' attitudes to care for the environment. Also, through activities and practices, students can have effective and applicable linguistic and sustainable skills. This qualitative research is a case of study and was supported by data collection techniques with interviews, observations/observations in the field, documentation as a compliment. According to this study, it is shown that learning English through the topic of sustainability generates in students the capacity and awareness of the real problems facing the world, through this they improve their attitude towards caring for their environment. Likewise, the activities, resources and materials applied allowed students to develop their linguistic skills.

Content-Based Instruction: Teaching English and the “Green Movement” to Students in China (Labov & Eckhart, 2017) proposed a nature thematic lesson unit based on the CBI approach to teaching English language to university students and at the same time the importance of the relationship between humans and nature. This lesson unit incorporates topics such as: We Are the World, Green and Sustainability Efforts, and Appreciating Nature: What It Can Do. It was held at Wuhan University in China. The Intensive English Program lasted for 10 rotations of 3 classes in a three-week period and some extracurricular activities were provided for students to learn English communicatively. The teachers managed to get the students to discuss through questions, problematic situations or their own thoughts about their preferences for nature topics as communicative activities. The authors also revealed that students learned vocabulary.

Another paper that is immersed on this topic is the one by Arikan (2009) entitled “Environmental peace education in foreign language learners’ English grammar lessons” in which the objective was to find out how pre-service teachers and secondary students see English grammar through some sustainability activities regarding to environmental peace education

focused on having the purpose that it helps to increase students' awareness of global issues. This research was developed on fifty pre-service English teachers and forty-six students in a School Experience I course where they had practicums in a university of Ankara, Turkey. The pre-service teachers learned and applied one activity in their practicums, the students must complete the activity and evaluate it at the same time. Students were motivated and the findings showed that English grammar through environmental peace education is an effective way for teaching English.

Nanni and Serrani (2015), both intensive English for specific purposes program teachers, developed "Teaching Sustainability in the English for Academic Purposes Classroom". They applied a Problem-Based Learning Approach presenting a topic of a real problem in Thailand companies, some background and needed content of that topic and sustainability were introduced for students having understand and finally teachers asked their students at Thai universities to develop individual research into the sustainability of a multinational company. At the end, students showed their findings with a short presentation. With these activities students were able to mainly develop language skills such as reading, writing, and presenting, as well as it was stated and supported that PBL approach contributes students' autonomy, to obtain new knowledge and to learn with real-world issues. This helps students to be a better person because they nurture their awareness regarding sustainability.

In the Caribbean zone it was also develop an investigation about this topic. In Cienfuegos, Cuba, La Rosa and Abreus (2022) proposed in their research entitled "Promoting environmental education in students majoring in English language teaching" a set of environmental-based activities for improving English Language 'sophomore' major students' Environmental education at "Carlos Rafael Rodriguez" University. At first, it was detected that: there were few environmental education activities and that they did not include the command of the English language, the students had a limited vocabulary and understanding about the environment and that no strategy or study was found in this regard. A bibliographical review was carried out, the needs of the students in relation to environmental education were diagnosed, the proposal of the activities was elaborated and applied to the students. These activities focused on listening and reading comprehension arise because the authors wanted to know how environmental education can be promoted and if they can effectively contribute to the assimilation and integration of environmental knowledge by students. In order to analyze how Environmental Education has evolved through the teaching-learning process of Integrated English Practice, historically and its importance for students, the historical-logical method was

applied; to analyze and summarize the results obtained from the analytical instruments, the synthetic method was applied; and the inductive-deductive method was used to carry out the analysis carried out before and during the investigation. Furthermore, the students are motivated to continue learning about the environment and encourage them to develop their linguistic skills through these activities while increasing their ability of critical thinking.

CHAPTER II

2. METHODOLOGICAL FRAMEWORK

2.1 Context

This research was carried out at “La Inmaculada” Private School, from Esmeraldas, Ecuador in the academic year 2023-2024. In this school that is located in the center of the city, there are all the levels from kindergarten to high school. The classes are developed in the morning session and have around 550 students and 46 teachers.

2.2 Type of research

The current investigation followed a mixed approach which is an integration of both concepts that allows the researcher to obtain a more complete understanding of the phenomenon studied (Hernández, 2017).

The design of this research was non-experimental because the main objective was to propose a set of activities and they would not be executed.

2.3 Population and sample

The population of the present investigation was composed of 46 students of the fifth year of school and 4 teachers. To select the sample for the survey, a simple random mathematical formula was applied. The results were as follows:

$$n = \frac{N \cdot \sigma^2 \cdot Z^2}{(N-1) \cdot \varepsilon^2 + \sigma^2 \cdot Z^2}$$
$$n = \frac{44 \times 0,25 \times 3,8416}{(44- 1) \times 0,0025 + 0,25 \times 3,8416}$$
$$n = \frac{42,2576}{0,1075 + 0,9604}$$
$$n = \frac{42,2576}{1,0679} = 39,57 = 40$$

2.4 Variables

The variables studied were:

Independent variable: Activities based on the topic of Sustainability.

A set of activities that are centered on developing The Global Goals for Sustainability Development goals stated by the United Nations.

Dependent variable: English language productive abilities

Speaking and writing are two important productive skills in language learning and teachers can provide students to learn how to practice and manage their productive skills by using specific activities.

2.4.1 Operationalization

The operationalization of these variables is shown in Appendix A

2.5 Hypothesis

The productive abilities of a language can be stimulated through activities based on the students' interchange of information using questions and answers, short phrases, writing paragraphs, and ideas. Activities based on sustainability topics are a great opportunity for improving students' capacity to produce the language emphasizing speaking and writing.

2.6 Method

The kind of research method applied was analytical-synthetical that allowed to analyze and synthesize the information, and the hermeneutic allowed to interpret the phenomena captured. Also, deductive – inductive method which also allowed a better reasoning of results.

2.7 Techniques

Survey: A survey was applied which seeks the opinions, content, interest of students to be considered for implementing the topic of sustainability in activities for learning English.

Interview: An interview was developed to four Nature Sciences' teachers in order to analyze their experience and collect information.

Documentary review: It was carried out a documentary revision in which it was obtained significant information that helped to design adequate topics of the activities for fifth graders by reviewing content

2.8 Instruments

For the survey it was applied a questionnaire (see Appendix B) composed by 6 questions directed to students of 5th grade that led to know how to design the activities. An interview was also developed with four Nature Sciences teachers in order to analyze their experience and collect information, finally, there was carried out a documentary revision which helped to design adequate topics for the activities for fifth graders.

See Appendixes B, C, D

2.9 Data Processing

The information that will be obtained from the application of the different techniques will be taken to figures and tables using the Microsoft Excel program.

CHAPTER III

RESULTS

A six-question survey was applied in order to learn more about the student's thoughts and knowledge about sustainability. The results are shown below.

Table 1 shows the level of knowledge of 5th-grade students about the topic of sustainability. It can be seen that almost all students are unaware of this topic; only 10% of them know about it.

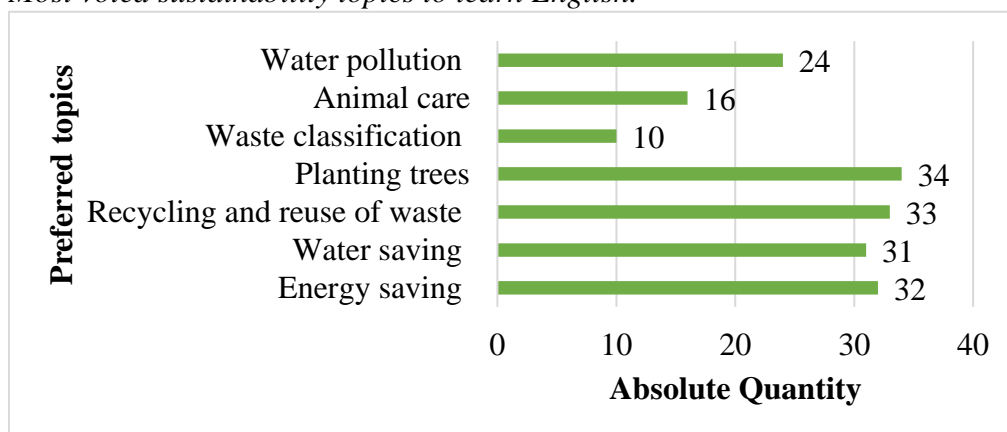
Table 1
Students' knowledge about sustainability.

Level of knowledge	Students	%
Very much	1	2,5
Enough	3	7,5
A little	11	27,5
Almost nothing	18	45
Nothing	7	17,5
Total	40	100

Note: n=40. Source: Survey.

In question number two of the survey, seven topics related to sustainability were proposed and, of them all, the students chose according to their interests. Figure 1 shows that there was greater interest in topics such as tree planting (18,9%), recycling and reuse of waste

Figure 1
Most voted sustainability topics to learn English.



Source: Survey applied.

(18,3%) as well as saving resources such as saving energy (17,8%) and saving water (17,2%), whereas waste classification seems less attractive to them. From these topics, the four most voted for by students were chosen for the design of the activities based on sustainability.

In relation to question 3, where the students were asked why they believe it is important to save water, they indicated that water is very important for living since it is our vital liquid and that if we do not use it measuredly, we can run out of this resource, and we will no longer be able to meet our needs. All students provided a positive response.

Different statements were put up for consideration in question 4, in which the students voted according to the importance they consider those issues have about sustainability (Table 2).

Table 2
Level of students' importance about sustainability criteria

Statements	E.I.	%	S.I.	%	N.	%	S.U.	%	N.I.	%
It helps us to keep the planet clean.	29	72,5	5	13	1	2,5	1	2,5	4	10
We improve as individuals.	9	23,7	24	63,2	4	10,5	1	2,6	0	0
We help to reduce plastic consumption.	16	40	15	37,5	8	20	0	0	1	2,5
It trains us to work with families.	9	23,1	15	38,5	11	28,2	3	7,7	1	2,6
Necessary to know about the topic.	12	31,6	14	36,8	3	7,9	7	18	2	5,3

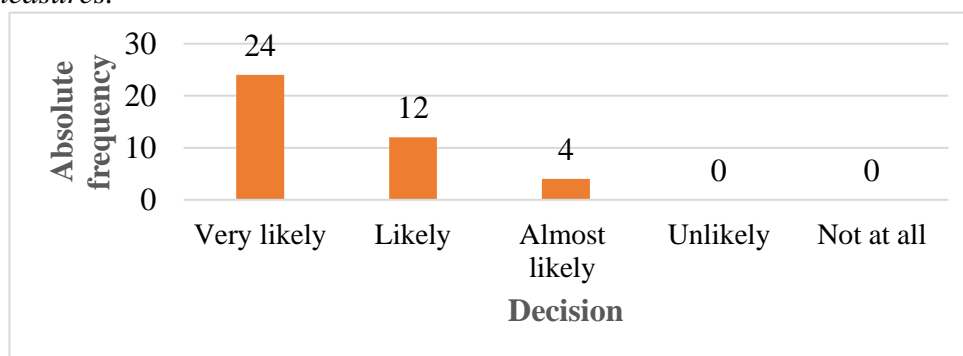
Note: E.I= extremely important; S.I= somehow important; N= neutral; S.U= some unimportant; N.I= nothing important. Source: Survey applied.

The students were asked what their reaction would be if they saw a person leaving water running while doing other things. Of the total sample, a few of students expressed that it was something that they were not interested in, and one student stated that he would not do anything.

On the other hand, most of the students said that they would come and tell them to turn off the water tap because the water was being wasted. In Figure 2, the majority of the students (24) are willing to react if they observe any noncompliance in terms of living with more sustainability, whether it is within their environment, be it at school, at home, or in the neighborhood.

Figure 2

Probability of reacting in the event of noncompliance with sustainability measures.



Source: Survey applied.

Interview

Four interviews were carried out with some teachers of the Natural Sciences subject at basic education of the La Inmaculada School. Some criteria were obtained that contributed to the design and adaptation of the activities.

In reference to question number 1, teachers consider that students have some prior knowledge about the reuse of materials and recycling, the classification of some materials such as cardboard, glass, paper, and plastic, and their nature and features. They also mention that students are aware of what they can achieve with those materials if they are given a new use such as piggy banks, notebooks, or pencils.

As to whether students need some reinforcement regarding these topics or not, three of the teachers interviewed agree that reinforcement is needed more than anything else in terms of creativity. Also, awareness should be raised along with teaching these topics. On the other hand, one teacher considers that reinforcement is not that necessary since it is an everyday occurrence that is frequent both in educational institutions and at home.

When asked about what proposal of topics based on sustainability were suitable for 5th-year students, the teachers consider that topics such as waste management, planting plants or

trees, and the functionality of living beings are topics that can be addressed with students at this level. At the same time, it is considered that the types of pollution, actions in favor of reducing global warming, saving energy and water are issues in relation to sustainability that need reinforcement. In the case of water, they were more emphatic and mentioned that it is very important to take care of this resource.

As a last point, the prior knowledge students have about saving water and electricity was discussed as specific topics, from which the teachers concluded that they know some methods for this, such as turning off the faucet while they are not using it when washing their hands, face, brushing the teeth or at bath time. They even mentioned that students know the importance of using containers to wash cars; also, turning off appliances while they are not being used, bedroom light bulbs, television sets, air conditioning, and radios, and avoiding leaving the cell phone connected all the time at night.

The teachers were very enthusiastic taking into account that this information will be consider for English as a foreign language lesson for children.

Documentary studies

A database search was done using keywords and articles were obtained that provided ideas and served as a guide. After gathering the information from different sources, the author of this study began to design activities based on sustainability for the development of productive English language skills for 5th-grade students.

PROPOSAL

The activities proposed below were designed considering the rise that sustainability has due to the environmental reality we live in and the impact that could have on students. These activities promote the development of linguistic skills such as speaking and writing in children but also enrich their content in terms of sustainability.

ACTIVITY 1

Do I correctly use water?

Objective: To get students analyze their usage of water and write some pieces of advice for using it adequately.

Methodology:

Divide students into pairs for a discussion activity.

Write some questions on the board: *In what activity do you waste water the most? Do you measure the amount of water you use? Are the activities where you use water all necessary?*

While students socialize the questions, the teacher assists them in writing their ideas in English using prior vocabulary and knowledge.

Then, draw a chart and make students copy and complete it with the answers previously discussed from the four questions.

What people necessarily need water for	What people unnecessarily use water for
People need water to wash cars.	People take a long time in the shower.
I need water to brush my teeth.	People fill a swimming pool with water indiscriminately.

Then, students create a list of advice for the appropriate use of water using *should and shouldn't* with the information from the chart.

Examples: *People should use cans for washing cars. People should not take long showers.*

ACTIVITY 2

My promises for the 3Rs.

Objective: To have students learn about the 3Rs and express what they are going to do to achieve the use of it.

Methodology:

Teacher the 3Rs on the board.

R_ _ _ _

R_ _ _ _ _

R_ _ _ _ _ _ _

Have students guess the missing letters to complete the word through gestures emphasizing the importance of these actions for the environment.

When finished, ask students their interpretation of each word.

Give them a view of these concepts for students to better understand.

Next, develop a chart for students to complete it, with the words from the box, providing examples.

Students must add more examples to the chart.

Use – new – Recycle – paper – Sheets - Reuse

#	R's	_____	Reuse	_____
1.	Meaning	Use or buy less of something.	Use something _____.	Give something a _____ use.
2.	Example Teacher	Don't buy notebooks. Use the rest of _____ from the last ones.	Use two sides of a piece of _____.	_____ an old container as a pencil holder.
3.	My examples.			
4.	My examples.			

Remind students of the structure for affirmative sentences. According to examples from the chart, students write statements using “going to” to express what they are willing to do.

The teacher monitors the activity.

Examples: *I am going to use the rest of the sheets from the last notebooks. I am going to use the two sides of a piece of paper.*

Finally, students share their promises with classmates and the teacher elicits their commitment to acting more sustainably.

ACTIVITY 3

Saving energy now.

Objective: To get students reflect on pictures of wasting energy and propose a list of what people do not have to do in order to save it.

Methodology:

Present some pictures of the incorrect and inappropriate use of appliances and energy.

Students describe the pictures.

Let students reflect and analyze on those pictures.

Then ask, how important the topic is to them. Make students comment about it, by saying: *I think... In my view...I believe... that saving energy is important or It is not interesting to me. Write these ideas on the board for students to read.*

It is mainly important that students learn how to express themselves using basic phrases to communicate ideas.

Divide the class into groups of three students. Assign them to make a list of Do’s and Don’ts where each student has to propose one.

The teacher monitors the activity and gives help as needed.

Examples:

Do’s:

- *Turn off the fans when not using them.*

- *Rather use cold water when taking a shower.*

Don'ts:

- *Don't let the TV on for hours.*
- *Don't let your phone connected all night.*

After socializing with the whole class students make posters with those sentences and a drawing in order to put them around the school.

ACTIVITY 4

Plants Around School

Objective: To get students analyze the importance of plants and trees in our environment.

Methodology:

Take a walk around the school with the students. Ask them to take note of the trees and plants we find and write down their number.

When you return to the classroom, as a support write the number of plants and flowers that the students recorded in their notebooks.

Ask students:

- What is the importance of plants in the environment?
- How do trees contribute to the educational environment?
- Do we take care of plants and trees?
- What do they need to be able to develop?

In order they reflect and interchange ideas.

They provide answers in L1 but teacher write them in English on the board.

The next period of class could develop the complete activity of planting a plant. In this case, you have to consult if you can make this type of procedure to the principal of the institution.

The teacher selects the place where to do the practice.

Students bring seeds for planting and all materials needed.

Make all the procedures.

At the end, make students express their emotions using the following phrases.

Planting a plant makes me feel.... happy, excited, hopeful, delighted.

Emphasize that we could feel happy when we do the right thing for our environment and our planet, but there are some bad things that can make us feel bad.

As well as to keep caring it since it needs treatment for growing.

ACTIVITY 5

Poster-environment

Objective: To have students create posters with messages for helping the planet using imperatives.

Methodology:

For this class students should bring materials needed to make a poster.

Start with a brainstorming with a question: What do you think do we need to do for helping the world?

Write students answer in the board.

Divide students by groups of four.

Each group will create two posters where they have to write a message/advice to help the planet and to draw a representative picture: *Recycle paper and plastic. Donate the clothe you don't use. Reuse your bags when do the market. Close the water tap when brush your teeth, etc.*

They use the ideas from the brainstorming activity.

The teacher monitors the activity correcting students and providing help as needed.

At the end of the activity students read aloud the messages and go out the classroom to put around the school for rest of the community.

Discuss with students the importance and the impact of this activity.

CHAPTER IV

DISCUSSION

It is emphasized that for proposals based on sustainability, a support base is required, which includes the ideas of the teachers, the opinions of the students, and the documentary review. In this way, the findings are closely related to what was established in the objectives of this research.

Regarding the first question of the survey, it is shown that students have great ignorance about the concept of sustainability, this allows the researcher to indicate how to introduce the themes by activities since they must start with known and basic themes that they have previously known without needing to overwhelm them with new content for them. Education based on sustainability is not within the Ecuadorian curriculum, unlike the Turkish one, Gürsoy (2010) indicates that in his country elementary schools are making this content part of the curriculum, which is why these students have an established base that allows develop greater knowledge of these topics.

The results obtained allowed us to find the greatest trend in terms of themes based on sustainability that can be introduced in English classes as activities, with this it was possible to interpret that the environment is a topic that interests students and despite Those who do not have the necessary background do not limit themselves to experimenting and rather are encouraged to learn. These themes were pointed out and emphasized by teachers and students, saving water, which means avoiding excessive and unnecessary use, was a theme where the students showed a certain level of awareness and stated that it was important to take care of it to help the planet. Likewise, energy saving is a topic that depends on the interest of the students since we use it indiscriminately and we can begin to correct it.

Planting trees was an exciting idea for students since they always want to be involved in outdoor activities where they can visualize and do things, as well as be immersed in activities, as mentioned “children are predominantly visual and kinesthetic. “They learn better if they see and are physically involved in the learning process.” (Gürsoy, 2010, p.236).

In her study, states that teachers should care about the activities chosen as children like to learn by doing and seeing. Contrasting with the current investigation, she emphasizes problem-solving activities where they feel encouraged to think about planet issues and solutions. I can mention that selecting the activities and the methodology to apply is very connected to what the students know about the English language and therefore allows them to express

themselves to the point of providing ideas and solutions. This will always depend on the linguistic skills and sustainability baggage that the learner manages. In the context of this study, 5th grade students need a little more reinforcement about English language for that reason the type of activities are according to their level.

This encourages the inclusion of innovative activities in the English language teaching-learning process, being another alternative through which language skills are developed in children who have the desire to learn and who in turn nourish the desire to contribute to their small environment on the planet. This is also stated by Dahniar et al. (2019), who affirm in their findings that learning English through the theme of sustainability generates in students the ability to interpret and become aware of the real problems that the earth faces, allowing comprehensive development in children. In the study, a certain change is observed around the attitude of the students who now demonstrate commitment to caring for the environment and this is what is sought beyond the very important development of the English language in their productive skills since the theme seeks that, educate children based on sustainability topic. However, it is a shame that there is no place for specific topics and content based on sustainability since this gives a much better direction about what we want to achieve with the activities and with this we allow students to get involved in learning the language. English since they were the ones who chose the topics and this gives a bonus for them to accept the activities proposed for the class.

According to Arikan's study (2009), integrating grammar teaching in the context of environmental peace education encouraged students to engage with English as they would in authentic, real-world settings. The activities not only provided a framework for improving grammatical knowledge, but also facilitated discussions on globally important social issues. Participants voluntarily incorporated the four language skills and eagerly searched for unfamiliar vocabulary items. However, they encountered challenges due to the novelty of these activities, which were not typically found in other subjects.

In this study, the activities were based on the topic of environmental peace, however the teachers considered other topics related to sustainability for a future study. Another difference is the age of the students, since the research was done with tenth grade children, the emotional, intellectual and even cultural development must be taken into account, plus the linguistic level of English of children of that age. Since they are aspects that determine the design of the proposed activities.

In terms of Vygotsky's sociocultural theory (1978), learning is fundamentally a social and cultural process, in which individuals actively construct knowledge through interactions with others and their environment, emphasizing the application of meaningful activities to facilitate learning and cognitive development. His goal is to create opportunities for meaningful language use within authentic social contexts, which is the primary goal of these proposed activities. By developing sustainability-based activities that take into account social issues such as the waste of water, energy and waste materials, from a global perspective, students immerse themselves in socially relevant and culturally significant content.

The sociocultural approach and the Zone of Proximal development theory emphasize the role of scaffolding, which involves providing support and guidance to students as they perform challenging tasks. In this study, the activities likely involved scaffolding techniques to help students navigate unfamiliar languages and concepts, such as in this case sustainability. This helps improve the learning skills, vocabulary, and language production of learners.

With ZDP with can relate the current knowledge to the previous knowledge of students in terms of sustainability which was carried out by the survey applied to students, and the potential development to what they can reach as new content and skills by the guidance of teachers within specific sustainability activities.

Something important to recognize is that there were limitations in terms of information in the context of Ecuador and Esmeraldas since no research was found to support this study. In some way, we would have had a prior vision regarding the students' context and see what activities were already applied or proposed, so that new ones could be proposed or, failing that, the same ones could be applied and compare the results. Added to this is that there were no such number of previous studies that speak as such about activities based on sustainability, and some are detailed that have not been for young learners however it gives a meaningful information about teaching sustainability in English lessons.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

After analyzing and discussing the results obtained, the following conclusions are presented.

As to the evaluation of students' knowledge and interest in sustainability, it is concluded that 5th-year basic education students do not have knowledge regarding the concept of sustainability, and everything that this entails, being something new for them. However, students do know basic environmental concepts such as caring for resources such as water and energy, recycling and planting trees, which they have learned over the years at school due to the emphasis given to them. The importance and interest in covering these topics as activities for English lessons is given by the curiosity and novelty that the topic offers since many of them suggested ideas, demonstrating motivation to learn from it.

The recollection of relevant information related to sustainability, topics through an interview with Nature Sciences teachers were obtained. We can summarize that teachers have contributed to prior knowledge regarding the environment and content around it. They know students and the topics in which they are interested in and propose some of them that are daily and applicable from each one's environment, whether in the educational institution or in their own homes. Each proposed topic is closely related to what teachers teach in their curricula within the classrooms, and this is important since it generates an integrated content experience.

Productive skills can be developed through topics that generate the possibility of expressing themselves, such as sustainability, a topic that is booming and has a strong impact today due to the environmental situation we are witnessing. The activities based on this theme, although they do not require a large number of resources, contribute in two ways to the development of the learner, both in their linguistic ability and in their environmental awareness allowing them to develop their English and improve as a citizen of the planet.

5.2 Recommendations

I would like to recommend to English teachers of La Inmaculada educational institution to take into account these activities as a new methodology for teaching children to develop speaking and writing abilities in students and also to raise awareness about this topic which is to help our planet and that is very important to treat with them indeed. It can contribute to a better improvement in language development and also to make students motivated in English learning.

Before designing any proposal, it is necessary to carry out a diagnosis that helps us understand the students' bases. This in particular allowed me to know the level of the type of activities that I should propose to the students according to this valuable guidance. This is recommended as long as the topic has not been discussed before with the students and the knowledge base that the students have is absolutely unknown.

It is also recommended that more research should be developed according to this topic since, being something little seen, it promises a lot in terms of innovation and we can draw conclusions about whether or not it contributes to the teaching of English. At the same time, as a suggestion, activities based on other themes can be proposed so that students can have a broader vision of sustainability and also focusing the activities on other language skills would help develop the potential of English.

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APPENDICES

APPENDIX A

OBJECTIVES	VARIABLES	CONCEPTUAL DEFINITION	OPERATIONAL DEFINITION	DIMENSIONS	INDICATORS	TECHNIQUE	ITEMS
<p>1) To evaluate students' knowledge and interest in sustainability.</p>	<p>Students' knowledge and interest in sustainability.</p>	<p>Practice of nowadays generations using natural resources responsibly today, so that future ones can make use of them as well.</p>	<p>Interest and knowledge of 5th grade students about sustainability content.</p>	<p>Interest</p> <p>Knowledge</p>		<p>Survey</p>	<p>6 questions 2 opened 4 closed</p>
<p>2) To collect relevant information related to sustainability through an interview with Nature Sciences teachers.</p>	<p>Information related to sustainability.</p>	<p>Practice of nowadays generations using natural resources responsibly today, so that future ones can make use of them as well.</p>	<p>Teacher's opinion and ideas about suitable sustainability activities for 5th graders.</p>	<p>Thematics</p> <p>Previous knowledge</p> <p>Teachers opinion</p>		<p>Interview</p>	<p>5 opened questions</p>

<p>3) To design activities based on sustainability to improve the English productive abilities.</p>	<p>Activities based on sustainability</p> <p>English productive abilities</p>	<p>A set of activities that are centered on developing The Global Goals for Sustainability Development goals stated by the United Nations.</p> <p>Speaking and writing are two important productive skills in language learning and teachers can provide students to learn how to practice and manage their productive skills.</p>	<p>A set of activities that the main objective is to develop student's consciousness in terms of environmental issues.</p> <p>Productive skills are the main part of the English language learning process such as: lexicon, vocabulary and communicative functions.</p>	<p>Content integration</p> <p>Speaking skill</p> <p>Writing skill</p>	<p>Focused on sustainability topics.</p> <p>Awareness</p> <p>Pronunciation</p> <p>Vocabulary</p> <p>Grammar usage</p> <p>Vocabulary choice</p>		<p>4 activities</p>
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APPENDIX B

SURVEY FOR 5TH GRADE STUDENTS

1. How much do you think you know about sustainability?

Very much	Enough	A little	Almost nothing	Nothing at all

2. Of the following topics, choose which ones you would like to learn about in relation to sustainability:

- Energy saving _____
- Saving water _____
- Recycling and reuse of waste _____
- Planting plants _____
- Waste classification _____
- Animal care _____
- Water contamination _____

3. Why do you think saving water is important?

4. How much importance do you give to the following statements connected to sustainability?

	Extremely important	Somewhat important	Neutral	Somewhat unimportant	Not important at all
It helps us to keep the planet clean.					
We improve as individuals.					
We help to reduce the plastic consumption.					
It trains up to work with families.					
Necessary to know about the topic.					

5. How important do you find the following statements connected to sustainability?

It's something that I don't care about _____

I do not do anything _____

I tell them that they should turn it off because water is being wasted. _____

Another: _____

6. Would you be able to act if you see any irregularity or non-compliance in your educational location in relation to sustainability issues?

Very likely	Likely	Almost likely	Unlikely	Not at all

APPENDIX C

INTERVIEW FOR SCIENCE TEACHERS

1. What content do students know in relation to the reuse of waste materials?
2. Are there topics that need reinforcement in that area?
3. What types of content in relation to environmental sustainability do you consider suitable for 5th graders?
4. Based on your experience, what content needs to be reinforced regarding sustainability?
5. What prior knowledge do students have about saving water and electricity?

APPENDIX D

CHART OF DOCUMENTS

Nmr.	Documents	Author	Relevant information Collected
1.			
2.			
3.			