



## Program Caring for the Environment of My Community to Develop Environmental Knowledge in Students of an Educational Institution, 2022



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### Abstract

The objective of this research was to design a proposal called "Caring for the environment of my community" to improve the environmental knowledge of the students of an Educational Unit in the Esmeraldas Cantón Quininde province, Ecuador, 2022, where it seeks to address the deficient knowledge on the care of the environment of the students, for this a non-experimental study of the applied type has been proposed, with a quantitative, cross-sectional approach, which had a sample of 100 students in the last year of the level of studies, they were surveyed through two questionnaires that have gone through a validation process by expert judgment, the field data was processed taking into account descriptive statistics and the use of statistical software. The conclusions that were reached indicate that the students do not have adequate attitudes for the care of the environment, demonstrating that more than 70% do not have adequate and solid knowledge regarding the care of water, air, soil and also regarding the proper disposal of solid waste, so it is very important to implement the proposal presented to the educational institution.

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## 1 Introduction

In recent years, climate change has been one of the most controversial issues, the changes and degradation that our planet is undergoing in all its ecosystems are increasingly perceptible and their acceleration is increasingly rapid, due to the action of the humanity, becoming a problem that is being addressed with greater priority by the governments of all the countries of the planet, this reality could be counteracted to what [Ramírez Tarazona \(2017\)](#) had said that the forms of life of humanity will not be able to drastically affect the climate and the environment as a whole ([Kampa & Castanas, 2008](#); [Brunekreef & Holgate, 2002](#)).

At present, this statement has already been distorted with the effects that pollution is having on the environment, one of the most important is global warming, which according to [Paterson \(2017\)](#), mentions that in 2020 there have been historical peaks. temperature throughout Europe, especially in Spain, due to the effects of greenhouse gases that are emitted throughout the planet and that are generating a 1°C increase in temperature throughout the planet. In Latin America, the environmental problem and the effects of pollution are increasing even more, since there is one of the most sensitive biodiversity's on the entire planet, according to [Jarvis et al. \(2020\)](#), mention that climate changes in Latin America are increasing, thus observing the effects such as droughts, forest fires and major weather phenomena such as hurricanes in the Caribbean. Due to this increasingly intense problem, the Ministry of Education of the Ecuadorian government has implemented strategies for teaching environmental studies in school education as indicated by [Núñez-Aldaz et al. \(2021\)](#) the state has implemented the environmental education plan in order to make the population aware of the importance of caring for resources and the environment, however this initiative has many shortcomings, especially budget and resources, for so its results are limited ([Engel et al., 2008](#); [Wunder et al., 2008](#)).

The environmental knowledge of [Liobikienė & Poškus \(2019\)](#) indicates that caring for the environment has become a very important factor, since all people must be aware of the impacts generated by human activities in the environment. For [Ahmad et al. \(2021\)](#) caring for the environment should be part of the values of behavior and empathy that people should have for nature, a great change would be taken into account if they were aware not only of the damage it causes when generating actions that damage the environment, as well as the damage they generate to other living beings such as animals and plants, which are very important for life on the planet. In this sense, [Rodríguez & Camacho \(2017\)](#) mention that currently, access to knowledge of the environment has diversified with the use of digital media, but it has also become an access that puts it at risk due to the amount of energy that is needed for the maintenance of the global database ([Nnorom & Osibanjo, 2008](#); [Kadirvelu et al., 2003](#)).

On the other hand, [Sánchez Corzo \(2020\)](#) refers to the fact that environmental awareness is getting bigger and bigger, young people are more respectful of the environment and propose actions for continuous improvement, however, the effects that the actions of humanity have had for decades it has damaged various ecosystems, so actions must be immediate. [Barbosa \(2018\)](#) indicates that attention to the environment is becoming increasingly important at all levels, since humanity is currently aware of the damage caused to the environment and that if an important change is not developed in the short term humanity will cease to exist in a relatively short period of time. The word environment is a derivative of the Latin language *medius* and then *ambiens*, the translation being what is found on both sides, that is, the changes that take place in the environment directly affect all living beings that live on the planet. Therefore, an awareness of the importance of their care must be created, even more so in young people who in a few years will be the ones who direct and make the decisions for their care and conservation ([Paço & Lavrador, 2017](#)).

People are currently aware of the impact of human activities, but they are not aware on a personal level of how they generate that impact in their day-to-day lives ([Ramadhan et al., 2019](#)). Likewise, industrial waste has been found in the most remote areas of the planet, such as the North Pole or in the fish of the [Russ & Krasny \(2017\)](#). Caring for the environment begins with people, since it is they and their household waste that They generate most of the pollution by not properly managing their waste ([Otto & Pensini 2017](#)). [Mohiuddin et al. \(2018\)](#), the environment is made up of all aspects that surround living beings and this includes humanity, however, they can also be considered sub-divisions and these with the social and economic environments, the physical ones and also the biological ones, all three must be taken care of since not doing so directly affects the behavior and life of all the beings that live in it ([Hargreaves et al., 2008](#); [Abdel-Shafy & Mansour, 2018](#)).

Biological Environment, it refers to all the beings that make up the flora and fauna of the planet, this has a very large diversity and there are many new species that are being discovered, the effects of pollution are causing very significant damage to their ecosystems, for which is very important to propose actions for their care. Physical environment, is constituted by all those tangible and visible factors such as visual environments, the sky, water,

vegetation, among others socioeconomic environments. They are related to all those that involve the interaction of human beings in their society, groups, interaction, intelligence, in addition to urban aspects and all the activities carried out by people. In general, this shotgun is the cause of the vast majority. of pollution. [Lin & Niu \(2018\)](#) environmental care starts from the smallest aspects, from home or school and from the values that parents can teach their children and this knowledge is reinforced in schools, some actions that can be carry out to take care of the environment are:

Take care of energy expenditure. Energy such as electricity currently only 20% is created by natural means such as hydroelectric, wind or solar plants, unfortunately 80% is still created with the use of fossil means such as oil and its derivatives, for which must be aware of its correct use, for example turning off lights that are not necessary, making careful use of high consumption equipment such as refrigerators, washing machines, irons among others, also taking care of the good maintenance of these equipment to avoid leaks energy that can cause accidents. Care of the environment at work. This aspect is very important since for many people work is like a second home due to the large number of hours a day they spend in it, so the proper use of supplies with office consumables such as paper, printer ink, learn to reuse all possible materials. Run tree planting. A good activity that can be done at work or at home is to plant a tree or have a garden that they can take care of, remember that you can adopt a tree since it is a living being, you can plant that by doing this activity that plant or tree becomes part of the family, so its care is required ([Mohan & Pittman Jr, 2007; Fillaudeau et al., 2006](#)).

[Hamdoun et al. \(2018\)](#), indicates that the importance by which people must provide adequate control of the environment for the well-being of humanity since it directly depends on the environment that surrounds it. Human populations are settled in places where the climate and nature are in relative harmony and their conditions are stable, in addition there are resources such as food and water so that societies can prosper without problems, however there is a factor that is repeated is that the continuous use of natural resources and by not allowing nature to regenerate, are causing very important negative effects, which must be analyzed and determined promptly for the implementation of corrective actions.

The main theory that this variable raises is the model of ecological behavior cited by [Fietkau and Kessel](#) cited by [Pirmoradi et al. \(2021\)](#) are those attitudes and actions that people develop to care for their environment, these actions are also called pro-environmental and seek to generate awareness of care on a par with the generation of actions for the good of nature, for example, use of bicycles instead of using motorized vehicles, have a garden and grow your own food or have green equipment at home such as solar panels or others that allow for greater energy efficiency. A second theory is the environmentalist of [Nightingale 1859](#), [McGain et al. \(2020\)](#) mentioning that caring for the environment implies maintaining a healthy environment taking hygiene into account to prevent some type of disease, a healthy environment improves people's quality of life. In every way, strict care must be maintained for order, cleanliness, health, good habits and, above all, knowledge of the effects that our actions have on the environment, without it people would have many difficulties at the health level. both mental and physical.

A third theory is the one presented by the functionalist of [Egon Brunwik 1959](#) that has been reviewed by [Salinas & Sarzosa \(2018\)](#) mentioning that the perception of a person regarding their environment is always biased, avoiding having a true awareness of their environment in this way. that the person only sees a part of the environment in which he is, being oblivious to the parts that he cannot observe but that are not affected by his operations, such as the emission of waste or the excessive consumption of resources. Regarding the second variable that implies the creation of a program called this refers to the teaching of environmental aspects aimed at a population that, upon receiving education, becomes students, so [Ardoin et al. \(2020\)](#) environmental education is aimed at publicizing the benefits of caring for the environment and its harmful effects that human actions are currently generating, which is why it is important to raise awareness among people about values, attitudes and knowledge. which will serve to generate a social conscience linked to caring for the environment.

Environmental education is taking on a very relevant importance at all levels of education in educational institutions, the massification of virtual media and the internet have been able to document and communicate the great effects of climate change and the actions of degradation of nature that It is generating the multiple human activities, even those that are considered small, it is already the case that due to the effect of the COVID 19 pandemic, the use of masks has become massive, however, the same care has not been taken in their use and Elimination since residues of these products have been found in the Antarctic Ocean, for which it is important to be aware that all human waste ends up in the most inhospitable places on the planet, generating contamination ([Sukma et al. 2020](#)).

Environmental education occurs mainly in companies since these, being regulated, must follow strict care of all their processes ([Law et al., 2017](#)). While, in education, teachers should be the main trainers of environmental

awareness in students, but there are many deficiencies in the training of the teachers themselves who are unaware of the strategies for teaching this type of subject (Valderrama et al. 2017). The theory on which this variable is based is proposed by Bandura on social learning cited by Williams (2017) indicates that people, being social beings, learn in their environment with techniques such as observation and research, so when developing training environment and by relating this knowledge that he observes in his environment, the student comes to understand and internalize the teaching, making it his own and generating a change of paradigms and thinking in them.

The research was justified by being practical when presenting results and a proposal that allows the development of various strategies and training programs at the level of teachers and students in the care of the environment in all its aspects. It is also raised from the methodology due to the importance generated by the instruments used in this research that may be used or taken as a reference with the finality of being applied in other realities where similar objectives are sought. For the theoretical justification, this study will allow to attend in an applied way the problem that is being described in this population, referring to the care of the environment, being this very important so that the students can find an alignment with the care of their environment and the effects that generated on it by human activities (Calderero et al., 2018; Simpen et al., 2018).

This study can be replicated in various educational institutions that seek to improve knowledge about the environment in their students and also in the entire community where they live. As social relevance, mention is made that caring for the environment is an issue that interests the whole of society and are key strategic objectives of all public and private institutions. It is of great interest for the researcher to develop environmental awareness in students due to the great problems that climate change is generating, also considering that it is young people who are going to lead environmental actions in the future and it is very important to train awareness of its care and preservation, hence the importance of designing a proposal called "Caring for the environment of my community" that favors the environmental knowledge of the students of the Canton of Quindé on issues, above all, waste management, soil, water and air.

## 2 Materials and Methods

The approaches of an investigation are given by the type of data that was obtained, they were differentiated in quantitative and qualitative, the first one worked numerical data, processing and quantifying them and the analysis of the textual data, describing them and presenting them in an orderly manner to arrive in both cases at a conclusion. The present study had a quantitative approach since numerical data will be obtained to meet its objectives (Askarzai & Unhelkar, 2017). Scientific research has different types, among the most referential are: explanatory, descriptive, correlational, or also exploratory, all applied according to the objectives pursued by the researcher with his study. The research was of the descriptive and purposeful type since it sought to analyze the variable and then present a proposal for improvement (Chilisa, 2019). The level of the investigation is defined in how the investigation will contribute to science, it can be basic where the knowledge generated with respect to a variable is expanded and the other option is the applied one which will attend to a specific situation that will be addressed by the Project. This study presented a basic type (Ramos Galarza, 2017).

The design of the investigations, such as the way in which the variables are treated during the investigation, can be experimental and non-experimental, the first analyzes the relationship of the variables to a certain type of treatment and the second seeks to describe the variable without any type of alteration, both can be applied in all fields of research, for which it is important to correctly state the objectives that the researcher seeks to achieve (Lassonde & Galman, 2019). The way in which the data is processed uses two types of statistical analysis, descriptive and inferential, the first shows the data of the variables in a unitary way and the second shows the interaction of the variables with the inferential statistical tests. The field data that were obtained were worked through descriptive statistics, showing the characteristics of the study variable, inferential statistics are not considered because a hypothesis test was not generated (Plonsky 2017).

Scientific research has become a very important activity, even more so if it is done with humans, for which there are currently various regulations that control the ethical levels that must be followed in studies, such as the Nuremberg code, at the national level. the political constitution and, at the local level, the codes of ethics of the Educational Unit where the research is carried out (Ross et al., 2018). For this work, the codes of ethics referring to autonomy, benefit, efficiency and also justice were taken into account, the investigation was autonomous and was not influenced by interests that are not the researcher's own, any type of discrimination was avoided in The research

was developed seeking to benefit the participants by maintaining the protocols against COVID, to avoid any harm to the participants (McDonough & Shaw, 2012).

### 3 Results and Discussions

The investigation considered the elaboration of a proposal that sought to improve the knowledge and skills of the students regarding the care of the environment in the community, to achieve this objective, the following selection criteria were presented, which are indicated in figure 1.

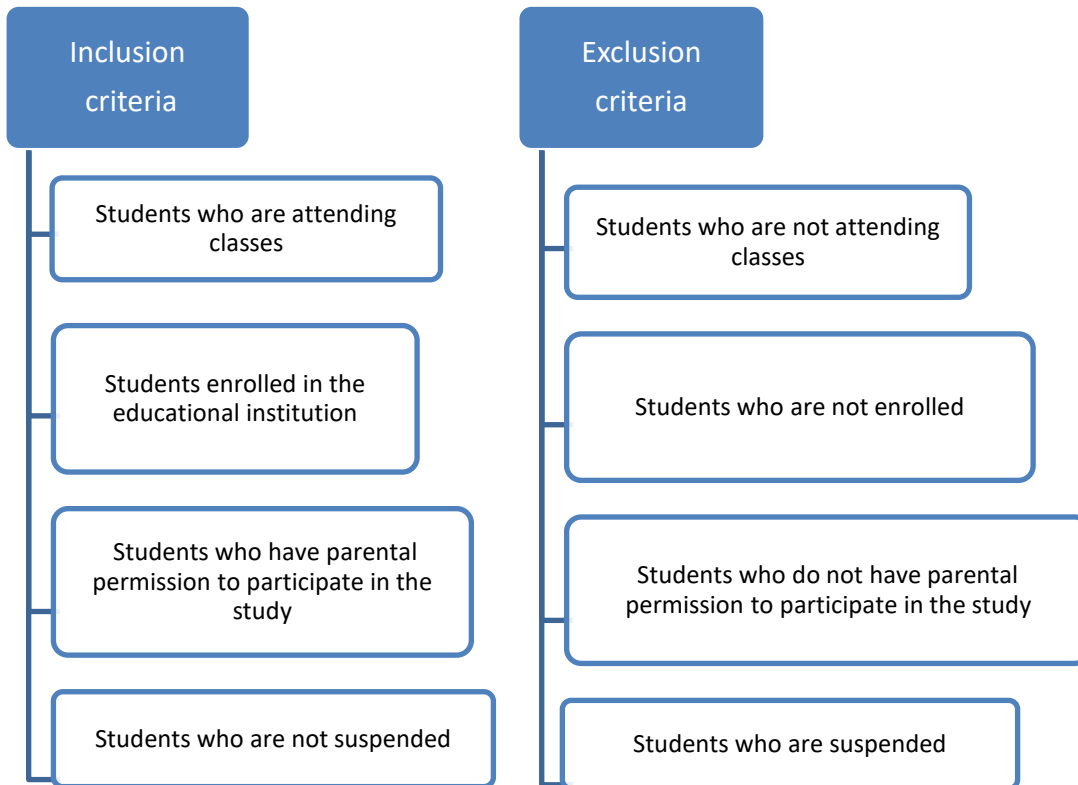


Figure 1. Teacher inclusion and exclusion criteria

The results obtained in this investigation have been developed, based on the objective set forth in it, the following results are presented, where it was sought to analyze what are the main attitudes that young people develop regarding the care of the environment, the following results are presented. Attitudes about caring for the environment are presented in figure 2, taking into account experience, reflection, action and acceptance to promote the proposal for environmental care.

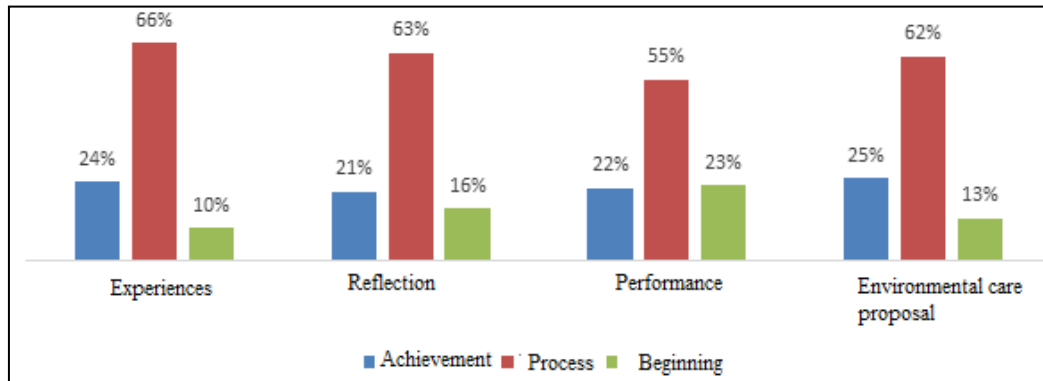


Figure 2. Attitudes about caring for the environment are presented

The results that have been found in the table and figure 1 show that for the attitudes of caring for the environment respecting the experience, 24% of the students have levels of achievement, 66% are in the process and 10% in the beginning, In the same way, for reflection, 21% are in achievement, the majority of which is 63% being in processes and only 16% are in the beginning, for the dimensions of action, 22% are at the level of achievement, 55% are at the process level and only 23% at the start, finally for the general variable, 25% are at the achievement level, 62% at the general level and finally the start level. For the second variable, knowledge in care of the soil, water, air and solid waste, the results are shown in Figure 3, which shows the values found and schematized in bars

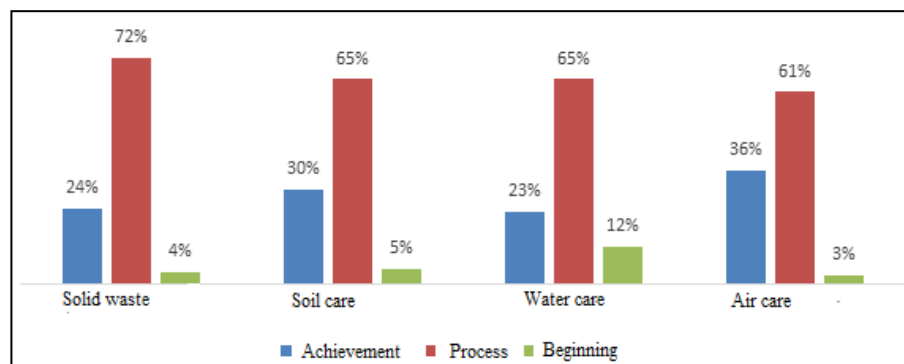


Figure 3. Knowledge of soil, water, air and solid waste care

The results found in table 2 and figure 2 regarding knowledge about the care of environmental elements, shows that 24% are at the level of achievement, 72% are in process and only 4% Initially, for the solid waste dimension, on the other hand, for soil care, 30% are in progress, 65% are in the process of being surveyed and 5% are initially, regarding water care, 23% are At the level of achievement, 65% is in process and 12% at the beginning, finally for air care, 36% is at the levels of achievement, 61% is developed at the level of processes and finally the 3% at the starting level. In relation to the general objective that was Design a proposal "Caring for the environment of my community" seeking to improve the knowledge of the students, for which a proposal of ten learning sessions has been developed where waste management issues have been developed. solids, in addition, soil care issues were developed, water care has also been developed, each one of the topics was developed with practical cases, and taking into account the necessary methodological strategies for the correct training of students.

#### *Methodological proposal*

A proposal was developed in order to increase knowledge about caring for the environment, therefore the following learning methodology was developed: The elaborated proposal is conformed under the scheme of practical learning, where the students have a theoretical knowledge and at the same time a practical and experiential work is developed, on the care of the environment, the proposal consists of learning sessions where the teacher proposes a topic to be



dealt with regarding the environment, inculcating the knowledge and then moving on to an experiential experience with the students, then a feedback of what has been learned is carried out, with various questions aimed at carrying out the lived experience, finally the knowledge is strengthened with work that They must be developed outside of the classroom. Students, when developing this teaching-learning process, generate awareness of the importance of caring for the environment in general, but, above all, the care that must be taken in the environment in which they live.

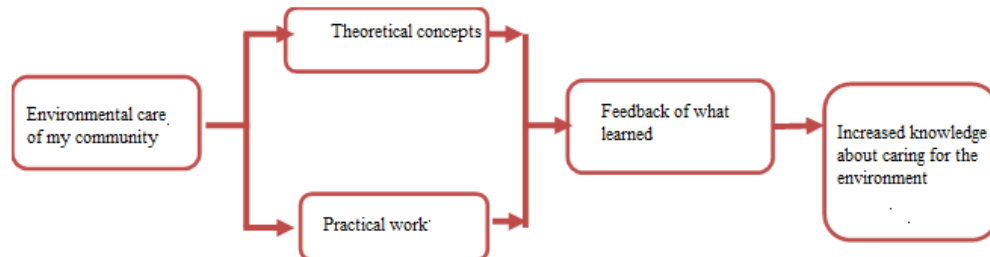


Figure 4. Methodological proposal

## 4 Conclusion

A proposal called "Caring for the environment of my community" was designed to improve the environmental knowledge of students, a proposal has been developed consisting of ten sessions of three hours each where the basic aspects of environmental care are shown, attending to the need that 75% of students do not have adequate skills of care for the environment concluding that this contributes to increase the knowledge of the students regarding the care of their environment. It was determined that 76% of the students have knowledge in levels of initiation and process having only 24% levels of achievement, so it is concluded that the vast majority of students do not have adequate knowledge about the management of solid waste and must improve this knowledge. It was possible to improve the knowledge in soil care of the students it has been found that the students in 70% have knowledge in the beginning and process levels, reaching the conclusion that the knowledge of the students regarding this environmental aspect must be improved. In relation to the third specific objective this described the knowledge of the students about the knowledge in water care of the students, it was demonstrated that the students in 77% of the students have limited knowledge are the care of water, reaching the conclusion that this knowledge should be improved in the students. It was demonstrated that 64% of students have limited knowledge about hand and air care, concluding that it is important for students to improve this knowledge.

### *Conflict of interest statement*

The author have no competing interest.

### *Statement of authorship*

The author have a responsibility for the conception and design of the study. The author have approved the final article.

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