



Environmental Awareness: A Current Challenge For Peruvian Education

Luis Alberto Albarran Silva^{1*}, Lirio Cruzado Llanos², Juan Carlos Lozano Estrada³, Renzo Jesus Maldonado Gomez⁴, Jorge David Ríos Gonzales⁵, Janeth Tomanguilla Reyna⁶, Teresita Del Rosario Merino Salazar⁷, Luis Santiago Garcia Merino⁸

^{1*}(<https://orcid.org/0000-0002-1664-0825>) Teacher - social sciences - Secondary Level

²(<https://orcid.org/0000-0002-8730-7202>) Professor of Pedagogical Innovation - Secondary Level

³(<https://orcid.org/0000-0002-59723-895X>) César Vallejo University. Trujillo, Perú

⁴(<https://orcid.org/0000-0001-8026-8215>) Technological University of Peru

⁵(<https://orcid.org/0000-0001-6073-0804>) Professor César Vallejo University, National University of Trujillo, Regular Basic Education

⁶(<https://orcid.org/0000-0002-7460-7214>) Teacher of the anatomy curricular experience - School of Nursing Cesar Vallejo University

⁷(<https://orcid.org/0000-0001-8700-1441>) Luis Santiago Garcia Merino

⁸(<https://orcid.org/0000-0001-9392-2474>) Autonomous University of Ica

***Corresponding Author:** Luis Alberto Albarran Silva

^{*}(<https://orcid.org/0000-0002-1664-0825>) Teacher - social sciences - Secondary Level

Citation: Luis Alberto Albarran Silva, et al (2024), Environmental Awareness: A Current Challenge For Peruvian Education , *Educational Administration: Theory and Practice*, 30(1) 4847 - 4855

Doi: 10.53555/kuey.v30i1.8464

I. INTRODUCTION

To substantiate, or, more specifically, justify or academically legitimize, the content that this text aspires to explain, the author found himself in the necessary and arduous task of adding consistency and integrity to what is already studied on environmental awareness. It is necessary to affirm that, despite the arduousness of the mission, the task is pleasant and manifestly evident because if something "finds" a topic like the one proposed, without a doubt, whoever intends to read it can find a "significance" that, despite the Fragmented but important information, the topic: Environmental awareness: A challenge for Peruvian education, indicates continuity in the work carried out as it adjusts to a latent and priority need for educational systems. Therefore, this article contains awareness-raising information relevant to the challenge that Peruvian education has on the political and action strategies that must be taken to develop genuine environmental awareness in students and thus contribute to responding to the environmental demand that the world whole demands. problematic reality

Threats to the global environment, the lack of human motivation to care for the environment, technological advances and, in general, the diverse reports that show the problem of environmental reality, are factors that generate concern for the search for action strategies that enable the preservation of life and the conservation of the planet, as they warn about the global significance of recognizing the various elements of the environment that influence the evolutionary process of the human being (Aguirre et al. 2023). In this sense Araújo et al. (2023)

warns that these damages to the planet that directly threaten life have a categorical impact on Peru, since it is necessary to take political and state measures to reduce pollution to preserve the lives of Peruvians; It is necessary to generate spaces that enable the recognition of reality and its forms of protection, of the environment, promoting and motivating reflection and the development of pro-environmental consciences, which allow us to "save" our planet. In the opinion of Arciniega et al. (2023) a positive turn must be taken in terms of people's environmental awareness, for the transformation of pro-environmental thinking schemes because if the current destructive trends are not changed, the man-nature relationship will continue to deteriorate, for this reason in Guadalupe and in La Libertad, with concern, mentions the existence of irrational exploitation of natural resources and excessive environmental pollution, with serious damage to the ecological balance, which is why developing adequate environmental awareness in students is important.

It is in this context that the research question is considered: What are the actions to take in the face of the challenge of Peruvian education to develop environmental awareness in students? The study is justified by the following: It is relevant because the topic investigated is a current social problem at a global level, which affects Peruvian students. Furthermore, it is argued that this research is useful because it allows us to determine the actions to take in the face of the challenge of Peruvian education to develop environmental awareness in students. Finally, an appropriate bibliographic review is carried out to understand the topic studied.

Based on what is stated in the previous paragraphs, the following main objective is considered: Determine the actions to take in the face of the challenge of Peruvian education to develop environmental awareness in students. The specific objectives are: Raise awareness among Peruvian education actors about the importance of facing the challenge of developing adequate environmental awareness in students. Analyze the actions to take in the face of

the challenge of Peruvian education to develop environmental awareness in students. Regarding the background, Núñez et al. (2023) analyzed the environmental education proposal of the Chilean national curriculum in subjects to integrate the development of environmental awareness. A qualitative documentary analysis was applied considering the dimensions of environmental awareness: affective, cognitive, behavioral and dispositional. Evidence was found that environmental awareness develops in a partial and unbalanced manner, with greater dominance of the dispositional and cognitive, over the behavioral and affective. The curriculum of this country barely proposes the study of conflicts and environmental problems, instrumentally values the environment, and encourages low-impact actions in the face of the global ecological crisis. Laso et al. (2022) in Spain, address a study on climate change and environmental awareness: A study with educators in training with the development of environmental awareness as its central axis. A qualitative approach was applied, with a content analysis design with specific software, an experiment aimed at teaching for this purpose was implemented and analyzed. It is concluded that the data indicate changes in environmental awareness that enable opportunities to contribute to creating environmentally responsible behaviors in the future teaching work of educators in initial training.

In previous national studies, Diaz and Ledezma (2021) described the differences in the most relevant factors that shape environmental awareness. It had a quantitative, descriptive and comparative approach. The results indicated that there are significant differences in environmental awareness in its affective, cognitive, active and conative factors; there being a preponderance of one factor over another; Therefore, there is scientific evidence to propose strategies and act, mainly in the affective and cognitive aspects.

Montes de Oca and Naessens (2023) set out to examine definitions of sustainability from the perspective of critical thinking. Applying a comparison and review of articles oriented to sustainability, considering multidisciplinary theoretical positions. Capturing some critical components of sustainability, which are oriented to traditional and scientific reasoning to acquire environmental awareness, despite the efforts of some social groups, politicians, civil society and companies to contain ecocide and the degrees of environmental deterioration that occur. they see on the planet.

On the theoretical basis, we begin by expressing the Regulatory Framework in Peru, which is based on the following documents: Political Constitution of Peru as Magna Carta of the country, Law No. 28611 called General Law of the Environment, also in the Decree Legislative Decree No. 1055, decree that modifies Law No. 28611 or General Law of the Environment, finally Legislative Decree No. 1013 is also considered, which contemplates the Law of creation, organization and functions of the Ministry of the Environment. Castelli and Longaray (2022) consider that the concept of environment has many manifestations, for example: natural environment, which refers to the valuation, respect and protection of the physical and natural environment, so the word environment refers to the original environment. The resource environment shows that the environment is the material basis on which the development process can be developed, but if its renewal cycle is not respected, this natural heritage will be depleted and this is where people must use protection strategies. environmental such as reusing, recycling and upcycling products to save resources. For Coacalla et al. (2022) regarding the conception of the environment, it is understood as a complex, broad and dynamic system, the result of the interaction between the natural and sociocultural ecosystems that inhabit it. To understand the environment implies knowing the great variety of components, as well as the relationship that exists between them.

For Khdaire and Jabbar (2022). The approach on which it is based is considered the Environmental Approach, based on this approach, we must guide the educational processes aimed at strengthening the collective critical consciousness of students to address environmental problems, as well as climate change, learning processes that must link environmental approaches with poverty and social inequality. This approach inspires teachers and students to engage in practices that care for biodiversity and natural resources, individual and collective health and well-being. Finally, this environmental focus inspires us to promote a healthy and sustainable lifestyle in our students. For Laso et al. (2022), putting environmental education into practice helps our country and our planet grow, so environmental practices that meet current needs should not put future generations at risk. An approach to the environment in the national curriculum must begin with the practice of values such as planetary solidarity and intergenerational equality, taking into account the nature that surrounds us, as demonstrated by teachers and students who intervene to prevent and respond to landslides, droughts, gravity. In case of rain, natural phenomena such as frost, social and emotional support actions are formulated to respond quickly and effectively. In short, environmental awareness refers to the need to care for, protect and use natural resources responsibly and sensibly to ensure the well-being of the planet on which we live (Martínez, 2023). As mentioned by Mediavilla et al. (2020) is also considered a philosophy of life that nourishes and protects the environment, thus ensuring its balance now and in the future. In essence, environmental awareness combines education, ecological values and an ideological construct related to caring for the environment. It manifests itself in actions, knowledge and experiences that strengthen our relationship with ecosystems. This is a very important process because it creates changes that help address the climate crisis and a more sustainable future (Yeşilyurt et al., 2020). Regarding this type of awareness, the sensitivity of the environment is taken as a priority in the face of other problems that may arise in school, reaching the point where students are seen as concerned about the environment. This perception must start from the home, then in school and then in their community (Mejía et al., 2023). On the dimensions of environmental awareness Núñez et al. (2023) consider the affective dimension that includes feelings and values related to the protection of nature and suggests evaluating different environmental conditions, prioritizing problems and seeking more concrete solutions. The conative dimension reveals the behavior of people in the environment, the judgments they make and the behavior that is beneficial or detrimental, protecting or degrading

the environment. Regarding the proactive dimension, it refers to both the individual practices that people demonstrate through actions such as energy saving, recycling and ecological consumption, and to the collective action of public environmental behavior. The cognitive dimension refers to the degree of understanding and information about environmental issues.

Palomino et al. (2022), regarding the historical framework, they consider:

The creation of The International Union for the Conservation of Nature and Natural Resources (1948) (IUCN) "Working together for a just world that values and conserves nature." The Foundation of the World Wildlife Fund (WWF) in 1961. The Stockholm Sweden 1972 conference, which in its article 79 states that environmental education is essential for young people and adults and must provide special attention to less privileged populations. so that they improve their conduct both individually and within their companies in terms of protecting the environment and human life. In 1973, the United Nations Environment Program (UNEP) was created, with headquarters in Kenya, in charge of coordinating actions related to environmental issues and providing assistance to countries to implement environmental policies and promote sustainable development. In 1973, the PIEA International Environmental Education Program was created. In 1977, the World Conference on Environmental Education was held in Russia, which incorporated the environmental dimension throughout the educational system from an interdisciplinary approach. In 1992, the summit was held. Rio in Brazil, also called the Earth Summit where Agenda 21 is issued, which in its chapter 36 promotes the promotion of education, training and awareness towards sustainable development.

In Braga 2004, the International Conference on Education for Sustainable Development was held, in its debate opening to new visions by establishing a Directorate of Education and Environmental Culture. The UN (2005-2014) declares this period of time as the decade of education for sustainable development, in this period of time our country developed many actions in order to improve environmental education with respect to the educational field. The World Summit on Sustainable Development that took place in New York on September 25, 2015, where the 2030 agenda was approved, which consists of 17 sustainable development goals that aim to confront climate change in the same way as eradicating poverty by fighting against social inequalities.

Rubina et al. (2023) maintain that in a philosophical framework Socrates (469-399 BC) highlighted the lack of peaceful practices and respect for human life. Socrates' love and concern for the environment in our educational institutions focused on reason and logic, in terms of the environmental approach, thinking through human thoughts, emotions and beliefs, what thoughts, emotions and beliefs manifest in all our places and environments, every day we must act in a way that respects nature and the essence of life and confronts individual or collective economic interests. Hippocrates (460-370 BC) emphasized the importance of the environment in the development and treatment of diseases. Plato (427-347) argued that the environment has an effect on the material and spiritual structure of human society, which also affects the environment.

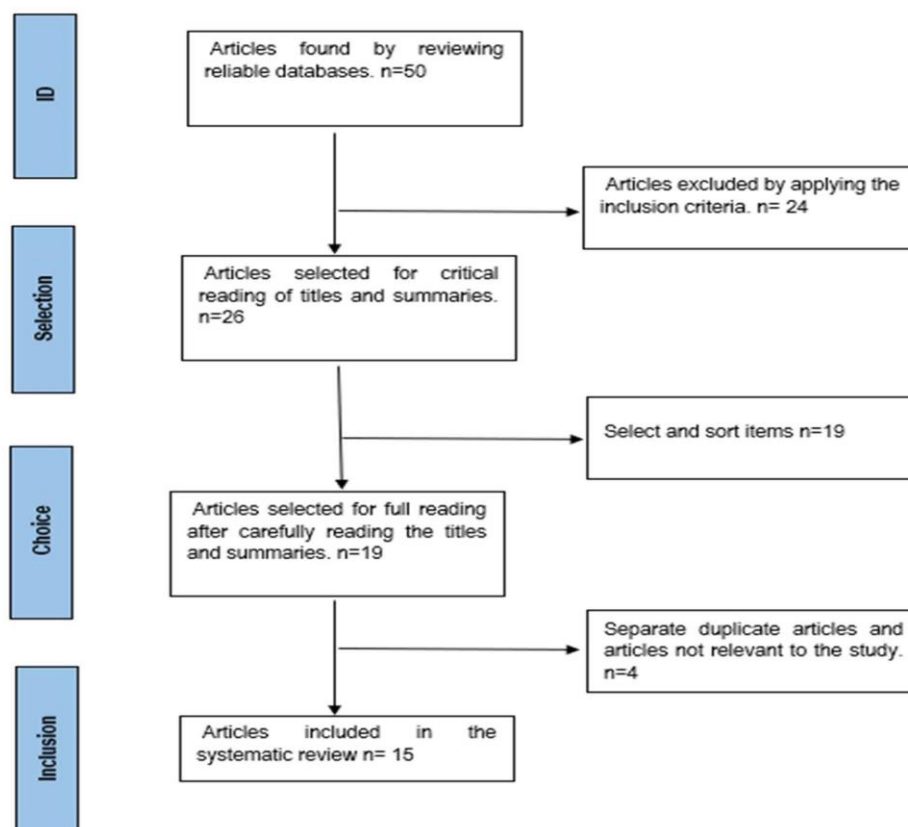
II. METHODOLOGY: MEDIUM AND MATERIALS

The methodology used in the study is a systematic literature review, considered a descriptive literature review, on texts with relevant information and articles from indexed journals. Specifically considering the scientific literature of texts from the year 2018 to the year 2023 and was carried out using the search engines Scopus, Web of Science, Scielo and Academic Geogle. In the search, the following keywords will be used in Spanish and English: "environmental challenges", "environmental challenges", "environmental awareness", "environmental awareness", "Environmental education", "environmental education".

With the objective of systematizing the research, six different steps were carried out: (1) identify the topic and develop the guiding research question; (2) systematic literature search; (3) collection of information from the selected studies; (4) critical analysis of the included studies; (5) discussion of results; (6) review presentation.

To select the articles for this systematic literature review, a careful search was carried out in different reliable databases, such as Scopus, Web of Science, Scielo and Academic Geogle.

50 studies in general on the topic studied were analyzed, of which 15 articles with important information were selected, with which the study was constructed. For this, exclusion criteria such as duplicity, lack of relevance and incomprehensible information were taken into account. The information collected was then ordered, respecting a certain sequentiality with previously established patterns, as seen in the following figure:

Figure 1 Scientific article selection scheme

Note: The figure shows how the information collected was organized

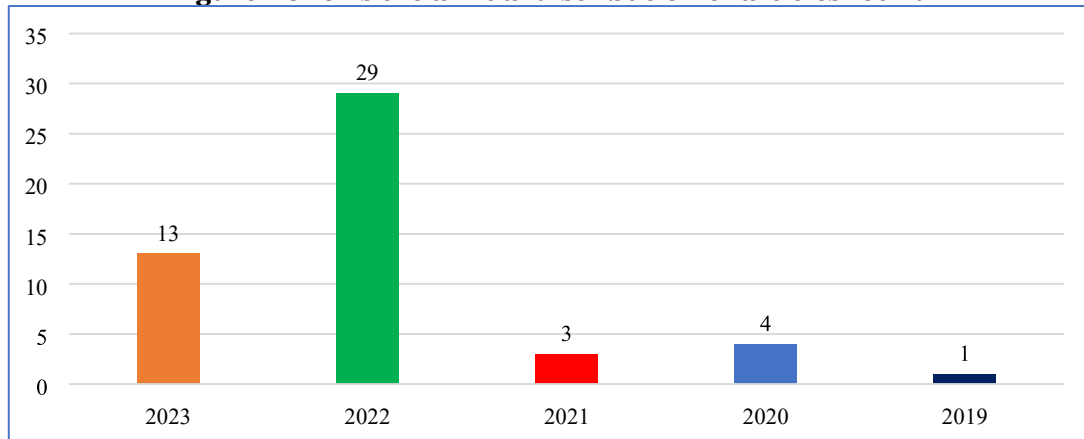
III. RESULTS:

Table 1 Shows the annual distribution of articles found

Year	Number	Authors
2023	13	Ochoa et al. (2023); Bonisoli and Román (2023); Nuñez et al. (2023); Araujo and Morais (2023); Aguirre et al. (2023); Montes de Oca and Naessens (2023); Mejia et al. (2023); Araujo et al. (2023); Martínez (2023); Rubina et al. (2023); Farfan (2023); Arciniega et al. (2023); Valenzuela (2023)
2022	29	Loayza (2022); Laso et al. (2022); Khdaif and Jabbar (2022); Lezama (2022); Laso et al. (2022); Bonilla et al. (2022); Mendoza et al. (2022); Suarez et al. (2022); Garrido et al. (2022); Miyazaki et al. (2022); Martínez (2022); Saints (2022); Coacalla et al. (2022); Canahuire and Loaiza (2022); White et al. (2022); Cedeño et al. (2022); Naranjo et al. (2022); Palomino et al. (2022); Mendoza et al. (2022); Mamani et al. (2022); Quispe et al. (2022); Macías et al. (2022); Naranjo et al. (2022); Hernández and Sánchez (2022); De la Cruz (et al. (2022); Veliz (2022); Carrillo et al (2022); Castelli and Longaray (2022)
2021	3	Diaz and Ledesma (2021); Mediavilla et al. (2021); Reds (2021)
2020	4	Medina (2020); Pereáñez and Arango (2020); Flandoli and Romero (2020); Yeşilyurt et al. (2020)
2019	1	Laso et al. (2019)

Note: Own elaboration

The information seen in Table 1 refers to the studies found, in the year 2023, 13 studies were presented, in the year 2022, 29 studies were presented, in the year 2021, 3 studies were presented, in the year 2020, 4 were presented. studies, in 2023 1 study was presented, it shows 50 articles in total organized according to the year of publication.

Figure 1 Shows the annual distribution of articles found

The information seen in Figure 1 are the bar charts of determining color according to the studies found on our topic, showing 50 articles in total organized according to the year of publication. Note that in 2022 the largest number of publications related to the topic was presented with 29 articles, in 2023 13 studies were presented, in 2021 3 articles were presented, in 2020 4 articles were presented and in 2019 1 article was presented.

Table 2 Shows the annual distribution of selected articles

Year	Number	Authors
2023	8	Nuñez et al. (2023); Araujo and Morais (2023); Aguirre et al. (2023); Montes de Oca and Naessens (2023); Mejia et al. (2023); Rubina et al. (2023); Martínez (2023); Arciniega et al. (2023)
2022	5	Laso et al. (2022); Khdaïr and Jabbar (2022); Coacalla et al. (2022); Palomino et al. (2022); Castelli and Longaray (2022)
2021	1	Mediavilla et al. (2021)
2020	1	Yeşilyurt et al. (2020)

Note: Own elaboration

Table 2 shows the selected studies, in the year 2023, 8 studies were presented, in the year 2022, 5 studies were presented, in the year 2021, 1 study was presented, in the year 2020, 1 study was presented, in the year 2023 1 study was presented, 15 articles in total are shown organized according to the year of publication.

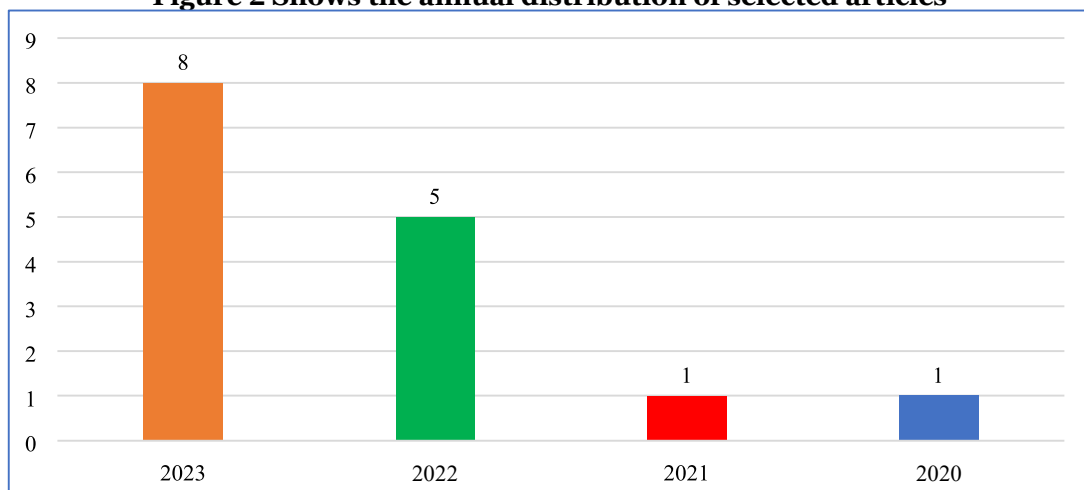
Figure 2 Shows the annual distribution of selected articles

Figure 2 shows bar charts of determining color according to the selected studies, showing 15 articles in total organized according to the year of publication.

Note that in 2023 the highest number of publications on the topic was presented with 8 articles, in 2022 5 selected studies were presented, in 2021 1 article and in 2020 1 selected article was presented.

Table 3 Shows the year, number of articles, author(s) and the abstract

Year	Number	Authors	Summary
2023	8	Núñez et al. (2023)	A qualitative documentary analysis was applied considering the dimensioning of environmental awareness: affective, cognitive, behavioral and dispositional. Evidence was found that this consciousness develops in a partial and unbalanced manner, with greater dominance of the dispositional and cognitive, over the behavioral and affective.
		Araujo and Morais (2023)	Warns that these harmful attacks on the planet that directly threaten life have a categorical impact on Peru, since it is necessary to take political and state measures to reduce pollution to preserve the lives of Peruvians; It is necessary to generate spaces that enable the recognition of reality and its forms of protection of the environment, promoting and motivating the
			development of pro-environmental awareness and reflection, which allow us to "save" our planet.
		Aguirre et al. (2023)	It maintains that the threats to the global environment, the lack of human motivation to care for the environment, technological advances and, in general, the diverse reports that show the problem of environmental reality, are factors that generate concern for the search for strategies that enable the conservation of the planet, as they alert about the global significance of recognizing the diverse elements of the environment that influence the evolutionary process of the human being.
		Montes de Oca and Naessens (2023)	I carry out a comparison and review of documents oriented to sustainability, which are oriented to traditional and scientific reasoning, including the efforts of social groups, politicians, civil society and companies to contain and the degrees of environmental deterioration that are seen on the planet.
		Mejia et al. (2023)	This awareness prioritizes environmental sensitivity over other issues that may arise at school when addressing students' environmental concerns, and this awareness must begin at home, then at school, and then in their community.
		Rubina et al. (2023)	It states from a philosophical point of view that the love and concern for the environment in educational organizations focused on reason and logic, regarding the environmental approach, thinking through human thoughts, emotions and beliefs, what thoughts, Emotions and beliefs manifest in all our places and environments, every day we must act in a way that respects nature and the essence of life
		Martínez (2023)	It states that environmental awareness refers to the need for responsible and wise care, protection and use of natural resources to ensure the well-being of the planet on which we depend.
		Arciniega et al. (2023)	I assert that a positive turn must be taken in terms of people's environmental awareness, to transform pro-environmental awareness schemes because if the current destructive trends are not changed, the man-nature relationship will continue to deteriorate.
2022	5	Laso et al. (2022)	It proposes that the practice of environmental education helps the country and the planet grow, so environmental practices that meet current needs should not put future generations at risk.
		Khdaire and Jabbar (2022)	It maintains that the environmental approach guides educational processes aimed at strengthening the collective critical consciousness of students to address environmental problems, as well as climate change, learning processes that must link environmental approaches with social inequality and poverty.
		Coacalla et al. (2022)	It defines that the environment is understood as a complex, extensive and dynamic system, which is the result of the interaction

			of the natural and sociocultural ecosystems that inhabit it and interrelate.
		Palomino et al. (2022)	It states that the historical framework considers the different international organizations and their agreements on environmental policies and the promotion of sustainable development taking environmental education as a reference, working together in a corporate manner to protect the environment and human life.
		Castelli and Longaray (2022)	They consider that the concept of environment has many manifestations, for example: natural environment, which refers to the valuation, respect and protection of the physical and natural environment, so the word environment refers to the original environment. The resource environment shows that the environment is the basis where the development process can take place, but if its renewal cycle is not respected, this natural heritage will be depleted and this is where people must use environmental protection strategies such as reuse, recycle and upcycle products to save resources
2021	1	Mediavilla et al. (2021)	Environmental awareness is seen as a philosophy of life, it combines ecological values, education and an ideological construct related to caring for the environment.
2020	1	Yeşilyurt et al. (2020)	It manifests itself in knowledge, actions and experiences that strengthen the connection with ecosystems, create changes that can help combat the climate crisis and guarantee a more sustainable future.

Note: Own elaboration

The information seen in Table 3 refers to the year of publication, author(s) and abstract as a relevant contribution to the systematic review study. The studies found from 2020 to 2023 were classified and organized with important information that guides the purpose of the investigation. In 2023, 8 studies were presented. In 2022, 5 studies were presented. In 2021, 5 studies were presented. 1 studies, in 2020 1 studies were presented.

Note that of 15 articles carefully analyzed, in 2023 the largest number of publications on the topic was presented with 8 articles.

For the inclusion criteria, the title, summary, methodology, results, articles that belong to the period of the last 5 years, open access articles related to the variable and that the information is relevant to the research objectives were taken into account. Likewise, for the inclusion of texts, the relevance of the proposal and its contribution to the research in terms of formative evaluation was considered.

For the exclusion criteria, the following were considered: duplicity, not being scientific articles or relevant texts, and not corresponding to the topic discussed.

Finally, 15 articles were found registered in the Database from indexed journals such as: Scielo, Scopus and Google Scholar.

IV. DISCUSSION OF THE RESULT:

V.

According to Rubina et al. (2020) in educational organizations, the application of environmental education projects should be encouraged, as a strategy to develop an environmental awareness of conservation and environmental care, and the actions that are promoted for this purpose must be planned, organized, executed and evaluated. Yeşilyurt, et al. (2020) insist on the hope of changing bad environmental habits, which is what motivates me to start this project to improve the quality of life of my students and educational community by developing good environmental practices and supporting each other among the people who share the same space. The Air we breathe, the same water we drink, the same sun brings us light every day, they ask us to take care of them so that they last forever, in this sense we agree with Núñez et al. (2023) who analyzed the environmental education proposal of the Chilean national curriculum, finding evidence that environmental awareness develops in a partial and unbalanced manner, with greater dominance of the dispositional and cognitive, over the behavioral and affective. The curriculum of this country barely proposes the study of conflicts and environmental problems, instrumentally values the environment, and encourages lowimpact actions in the face of the global ecological crisis.

Khdaïr and Jabbar (2022) assume that modern and contemporary philosophy leaves aside nature and its essence of goodness and beauty, that nature is the companion of humans, that humans share it with respect and dignity, and that humans and nature protect each other. Therefore, our country needs to build a new 21st century society that is supportive, democratic and above all fair, where citizens of both genders practice healthy and sustainable values, customs and lifestyles and have the ability to function in society. and the ability to protect all forms of life,

from humans to flora and fauna, it is clear that humans depend on nature and vice versa. This is consistent with Laso et al. (2022) who in their article on climate change and environmental awareness: implemented and analyzed an experiment aimed at teaching this purpose. Concluding that the data indicate changes in environmental awareness that enable opportunities to contribute to creating environmentally responsible behaviors in the future teaching work of educators in initial training.

It also agrees with Diaz and Ledezma (2021) who in their article described the differences in the most relevant factors that shape environmental awareness. Indicating that there are significant differences in environmental awareness in its affective, cognitive, active and conative factors; there being a preponderance of one factor over another; Therefore, there is scientific evidence to propose strategies and act, mainly in the affective and cognitive aspects. The strengths of the study lie in updated studies on environmental awareness actions through the application of programs, projects to protect, conserve and value natural resources at an educational level, promoting sustainable development and quality of life for future generations. The limitation lies mainly in the fact that there are no studies with strategic, significant and contextualized proposals to strengthen environmental awareness with an education in environmental values and principles, so this study will serve as support to empower future research.

VI. CONCLUSION:

1. It was determined that it is necessary to take immediate actions considering the challenge that Peruvian education has to develop environmental awareness in students, with the purpose of mitigating the consequences of the existing environmental deterioration.
2. It was realized that the development of genuine environmental awareness in students is important in each educational institution as part of its contribution to the care and preservation of the planet.
3. Relevant and genuine information was analyzed about the challenge of consolidating or developing environmental awareness in students to contribute to the sustainable development of our planet.

REFERENCES

1. Aguirre, N. , Alvarado, J. , & Ponce, P. (2023). Incidence of COVID-19, social norms and environmental awareness on electrical energy savings in homes in Loja. *Economics and Politics Magazine*, (38), 80–102.<https://doi.org/10.25097/rep.n38.2023.05>
2. Araújo, J., Morais, C. and Paiva, J. (2023). Citizen science in promoting chemical environmental awareness of students in the context of marine pollution by (micro)plastics. *Educare Electronic Magazine*, 27 (1), 1-21.<https://doi.org/10.15359/ree.27-1.15845>
3. Arciniega Galaviz, MA, Ávila Díaz, JA, Moreno Rentería, KJ, & Castro Bojórquez, F. (2023). Environmental awareness in basic level children Case Study in Los Mochis Primary School, Sinaloa, Mexico. *Electronic Journal on Academic Bodies and Research Groups*, 10(19). Recovered from <https://www.cagi.org.mx/index.php/CAGI/article/view/295>
4. Castelli, T., and Longaray, A. (2022) Analysis of green information technology from the perspective of individual socio-environmental awareness. *Environment and Societies*.<https://doi.org/10.1590/18094422asoc20190163r2vu2022L1AO>
5. Coacalla, C., Gutiérrez, M., Ríos, J. and Gutiérrez, A. (2022) Systems Thinking in the Teaching of Eco-efficiency in Universities. *Production + Clean*.<https://doi.org/10.22507/pml.v17n1a1>
6. Khdair, WA. and D. Jabbar, AA. (2022). Study of the effect of employees' environmental awareness as an intermediate variable in the relationship between institutional pressures and human resources intentions for the adoption of ecological information techniques: an exploratory study of microenterprises. *International Journal of Business Professional Review*, 7 (2), e447.<https://doi.org/10.26668/businessreview/2022.v7i2.447>
7. Laso-Salvador, S., Marbán-Prieto, J., & Ruiz-Pastrana, M. (2022). Environmental awareness and climate change: a study with pre-service primary school teachers. *Educare Electronic Magazine*, 26 (3), 1-23.<https://doi.org/10.15359/ree.26-3.24>
8. Martínez Salinas, FJ (2023). Environmental awareness in public primary education students. *Horizons. Journal of Research in Educational Sciences*, 7(28), 793–808.<https://doi.org/10.33996/revistahorizontes.v7i28.555>
9. Mediavilla, ME, Medina Quintana, S., & González López, I. (2020). Diagnosis of environmental sensitivity in university students. *Education And Educators*, 23(2), 179– 197.<https://doi.org/10.5294/edu.2020.23.2.2>
10. Mejía, G., Lopéz, T. and Haro, J. (2023) Social perception about recycling in the municipality of Xalisco, Nayarit, *JONNPR vol.8 no.2*. https://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S2529-850X2023000200003&lng=es&tlng=es
11. Montes de Oca Hernández, A., and Naessens, H. (2023). «Critical-Conceptual Approaches to Sustainability». *Green Letters. Latin American Journal of Socio-Environmental Studies*, no. 33 (March):45-63.<https://doi.org/10.17141/letrasverdes.33.2023.5523>

12. Núñez Tobar, J., Vargas Navarrete, N., Valdebenito Pérez, A., Lizama Orellana, A., & Oyarzún Morel, J. de D. (2023). Analysis of the integration of environmental awareness in environmental education of the Chilean curriculum. *Educational Thought*, 60(2).
<https://doi.org/10.7764/PEL.60.2.2023.5>
13. <https://doi.org/10.7764/PEL.60.2.2023.5>
14. Palomino Rojas, RJ, Nima Olaya, MC, Huailapuma Santa Cruz, LM, & Sifuentes Pinto, N. (2022). Environmental awareness as ethics of good living. *Horizons. Journal of Research in Educational Sciences*, 6(26), 2140–2150.
<https://doi.org/10.33996/revistahorizontes.v6i26.480>
15. Rubina Ticlla, ME, Alva Rodriguez, CL, Díaz Torres, B., & Benavente Ayquipa, RM (2023). Development of environmental awareness from the teaching perspective. *Horizons. Journal of Research in Educational Sciences*, 7(28), 594–605.
<https://doi.org/10.33996/revistahorizontes.v7i28.537>
16. Forksilyurt, M., Ozdemir Balakoğlu, M., and Erol, M. (2020). The impact of environmental education activities on environmental awareness and visual expressions of primary school students. *Qualitative Research in Education*, 9 (2), 188–216.
<https://doi.org/10.17583/qre.2020.5115>