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Development of environmental education: As a culture of sustainable development

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Abstract

The study of the environment involves a certain natural phenomenon and the interactions that exist between man and his environment. Environmental Education, as a culture of sustainable development, with the aim of ensuring that resources are sufficient for the present and future generation. Anthropogenic activities, both individual and collective, have affected the environment. Advances in technology have brought advantages to man, generating goods and services to improve the quality of life and making life easier. However, collective actions by industry have contributed to a greater negative impact on the environment. Therefore, various strategies have been proposed to mitigate the damage caused, such as: generating educational programs to promote changes in values and attitudes in society about the environment, generating cleaner productions, environmental reviews, eco-balances, impact assessment, among others; educational institutions have focused on environmental education, with the purpose of establishing a culture of sustainable development as a strategy for social change.

Keywords: Education; Environmental; Sustainable; Environment; Impact

1. Introduction

Environmentally oriented research, in this research, is based on how the reality that involves natural sciences is understood, in it the reasons are argued as to why it is important to investigate a certain natural phenomenon and the interactions that exist between man and the environment. In this case, research based on the development of Environmental Education, as a culture of sustainable development, so that resources are sufficient for the present and future generation. In context, throughout history, anthropic activities, both individual and collective, have affected the environment, especially advances in technology, which has brought advantages to man, generating goods and services to improve the quality of life and make life easier, and the collective actions of industry have been those that have contributed with a greater negative impact on the environment. Due to the above, various strategies have been proposed to mitigate the damage caused, such as: generating educational programs to promote changes in values and attitudes in society about environmental care, generation of cleaner productions, environmental reviews, eco-balances, impact assessment, as well as other environmental management strategies, on their own, educational institutions have focused on environmental education since it is important to include in the training and in the curricula of any subject for teaching natural and social sciences, in order to establish the culture of sustainable development (Severiche-Sierra *et al.*, 2016). In this study, it is intended to include in the curricular design the culture of environmental education as a strategy to raise awareness in society for sustainable development, implementing programs and techniques of classification, recycling of materials and composting for the improvement of green areas in the local educational institution.

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2. Human activities and their impact on the environment

For decades, both individual and collective anthropic activities have affected the environment, especially technological advances. Although they have brought benefits to man, generating goods and services to improve the quality of life and make life easier, collective actions by industry have contributed the most negative impact on the environment. The neoliberal economic development model has led to various environmental problems such as damage to soils, water resources, contamination by hazardous and non-hazardous solid waste, visual pollution, climate change, deforestation and loss of biodiversity, which have seriously affected the planet's ecosystems (González *et al.*, 2019). This has caused spills in soils and waters, contaminating them at different trophic levels, affecting flora and fauna and man, causing economic losses and public health problems at local, national and global levels. Due to the above, various strategies have been proposed to mitigate the damage caused, such as: cleaner production, environmental reviews, eco-balances, impact assessment, as well as other environmental management strategies. On their own, educational institutions have focused on environmental education since it is important to include it in training and in curricula, with the purpose of establishing a culture of sustainable development. However, the environmental problem is considered a situation of great impact, previously, analyses were carried out on the effects of soil, water and air pollution, but as it has become a complex situation, the causes and effects have become even more known, as well as recognizing that natural cycles would not be able to return the vitality that the planet requires (Eschenhagen, 2007). It is therefore necessary to work locally by incorporating environmental education and sustainable development into the curriculum of any subject, to promote awareness of environmental care and the establishment of waste sorting and recycling campaigns and composting programs through the use of agricultural waste to improve the green areas of the school environment.

3. Environmental education as a sustainable development strategy

For decades, both individual and collective anthropic activities have affected the environment, especially technological advances. Although they have brought advantages to man, generating goods and services to improve the quality of life and make life easier, collective actions by industry have contributed to the greatest negative impact on the environment, causing spills in soil and water, contaminating them at different trophic levels, affecting flora and fauna and man, causing economic losses and public health problems at local, national and global levels. Due to the above, various strategies have been proposed to mitigate the damage caused, such as: cleaner production, environmental reviews, eco-balances, impact assessment, as well as other environmental management strategies. On their own, educational institutions have focused on environmental education since it is important to include it in training and in curricula, with the purpose of establishing a culture of sustainable development (Severiche-Sierra *et al.*, 2016). Because man has caused considerable environmental deterioration in the world, for this reason greater importance has now been given to the care and conservation of the environment, seeking that the actions carried out within society, the economic and cultural do not deteriorate even more within them resources such as water, soil and air. However, despite the efforts that have been made regarding the conservation of natural resources, it has been impossible to stop environmental deterioration, perhaps because we have not managed to have awareness and attitude of caring for the environment (De Castro, *et al.*, 2009). The environmental problem is considered a situation of great impact. Previously, analyses were carried out on the effects of soil, water and air pollution, but as it has become a complex situation, the causes and effects have become even more known, as well as recognizing that natural cycles would not be able to return the vitality that the planet requires (Eschenhagen, 2007). There are diverse effects such as hurricanes, extreme floods, earthquakes, eruptions, uncontrollable fires, famines, cracks in the earth's crust, landslides, tidal waves, thawing, global warming and climate change are some of the drastic effects on which research has been carried out and in which we have sought to understand these phenomena and find strategies to mitigate them, however, we are very far from being able to do much about it (Zabala and García, 2008; Bocco and Palacio, 2014).

4. Culture and Environmental Education

There is an environmental crisis, which has been manifested by the emergence of large-scale phenomena throughout the planet such as climate change, greenhouse processes, thinning of the ozone layer, as well as the extinction of many species of both flora and fauna (De Castro *et al.*, 2009; Giraldo, 2013). For decades, man has carried out actions that alter ecosystems and affect society. The environmental problem has become a phenomenon that has affected the world, so it is essential to lay the foundations for a culture of environmental education. The school environment is the strategic ally for the promotion and development of environmental values and the creation of an environmentally sustainable culture in students to allow a more friendly relationship between man and nature, considering that those responsible for environmental damage with a greater commitment are the actions of man (Severiche-Sierra *et al.*, 2016). Currently, in different countries around the world, policies have been implemented to address sustainable development or situations related to the subject. Even international organizations have joined forces in favor of the same cause, such is the case of

Sustainable Development Goal (SDG) No. 4 on quality education, which gives rise to the implementation of plans and projects from the educational field, however, the application as a product of the teaching-learning process has not yet been determined. On the other hand, the consumerism practiced by people worldwide has led to greater environmental pollution

5. Environmental studies in social research.

Environmental studies in social research may present controversies, for the reason that they involve the participation of various actors, who within the same environment carry out various actions that may be synergistic and in others are contrary. In this regard, social scholars have developed different approaches to address sustainability taking into consideration the importance of individual and collective behavior in environmental results (Severiche-Sierra *et al.*, 2016). An important element in which various approaches concur is the area of sustainability, as well as the behaviors that promote them. Sustainable behavior is defined as a set of effective actions, whose purpose is to ensure the natural and sociocultural courses that guarantee the present and future well-being of humanity. Environmental problems cannot be dismissed. In past decades, studies were limited to carrying out analyses of the effects of water, soil and air pollution. However, the problems have become more complex as the causes and effects have become known, and considering that natural cycles may never be the same again (Eschenhagen, 2007). The neoliberal economic development model has led to various environmental problems such as damage to soil, water resources, contamination by hazardous and non-hazardous solid waste, visual pollution, climate change, deforestation and loss of biodiversity, which have seriously affected the planet's ecosystems (González *et al.*, 2019).

6. Discussion

For decades, man has carried out actions that have altered ecosystems, which affects society. Environmental problems have become phenomena that affect the entire planet and require us to lay the foundations for an environmental culture of education. Educational institutions must establish strategic allies to promote the development of strategic values, create an environmentally sustainable culture in students to allow a more human relationship between man and nature, considering the human being as the main responsible for environmental degradation and therefore, is the one who has the responsibility to promote a cultural change linked to a new ethical environmental perspective of the planet, may be the only way out of this crisis, however, it requires a new educational approach. It is essential to develop and generate educational programs to promote changes in values and attitudes in society regarding environmental care, generation of cleaner productions, environmental reviews, eco-balances, impact assessment, as well as other environmental management strategies (Severiche-Sierra *et al.*, 2016). Educational institutions have focused on environmental education since it is important to include it in the training and curricula of any subject for teaching natural and social sciences, with the purpose of establishing a culture of sustainable development, implementing classification and recycling techniques for materials and composting for the improvement of green areas in the local educational institution, for the generation of more sustainable societies. Social needs demand quality education, with greater curricular relevance, with significant learning relevant to topics of interest for contemporary pedagogical activity, such as environmental education for sustainable development. Various reports on the environment have raised the need to take measures in education to stop the increasing deterioration of our planet (UN, 2023). Given the need, a branch of pedagogy has been developed focused on achieving these goals, environmental education, which has its own objectives, content, methodology, constituting a new pedagogical vision (Paredes, 2000). Environmental education has been addressed in many countries, with different interdisciplinary initiatives, however, these have been truncated or terminated without achieving sustainability, most likely due to a lack of environmental culture among citizens (Yanniris, 2021). For projects to have an impact and transform the problem, they must be well designed and tested, in addition to having contextual conditions that are favorable for their implementation (Prosser-Bravo *et al.*, 2020).

7. Conclusion

In environmental culture in education for sustainability, it can be analyzed that there are many studies with theoretical approaches that address the topic, from different contexts.

Environmental education allows us to analyze the results of sustainable development and guide the transformation of the relationship between man and nature. Sustainability requires actions to achieve a better quality of life in an integral way.

Environmental culture is an element that enriches environmental education for sustainability. Man is an important agent for the management and conservation of the environment and he must assume his responsibility for

environmental impacts at local, national and global levels, so environmental culture is essential for educational sustainability.

Compliance with ethical standards

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Disclosure of conflict of interest

The authors declare that there is no conflict of interest.

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