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Environmental Culture and Education: A New Conceptual Framework

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Abstract

Considering the exacerbation of present ecological crisis and the urgent need to restore natural balance, present paper proposes a new approach for environmental education. Reviewing concepts as "cultures of nature", "cultural ecology", "environmental literacy" and "environmental culture", we recreate the strategies and goals of environmental education and propose a new conceptual framework to establish environmental educating communities and promote environmental culture. This framework builds on the community itself and is structured in three different sequential stages: driving forces; sociocultural transformation process; and environmental sustainability. Each stage feeds from its previous, being the first one both an initial trigger but also the permanent driving forces that feed the all cycle. Driving forces from the first stage are taken from political and social will, which would create mechanism to promote environmental education and best practices. Second stage is a process of sociocultural transformation of the community contexts based on the implementation of environmental best practices and environmental education programs, which should modulate and be modulated the/by community and its models of organization. Finally, our conceptual framework advocates that this process will be able to reach the third stage, the environmental sustainability, supported by an environmental educating community that drives environmental culture, which should also boost the driving forces from the first stage, closing the loop. We conclude that, since this is a theoretical approach, it needs now to be validated through its implementation and evaluation in a real scenario.

Keywords

Environmental Education, Environmental Culture, Environmental Literacy, Environmental Sustainability

1. Introduction

Modern man (Homo sapiens) appeared more than 300 thousand years ago (Hublin et al., 2017) and throughout much of that time, namely its long prehistory, lived like any other animal, depending directly on the natural resources and its balances. Over time, as a result of its mental capacity and social organization, humanity has been developing and accumulating knowledge and technology, and, with this, culturally rooted the idea of being superior to other living beings and to nature itself. He stopped to admire nature, where his spirituality and divinities resided, and created a God in his image and likeness, becoming the center of everything. Amputating himself from nature and turning it into an object, humanity legitimized its intensive exploitation until the exhaustion, something that did not happen before because only in recent times, since the Industrial Revolution, we began to have the means to do so. The current dominant culture, and the social model based on consumption that underlies it, was developed over thousands of years and has its foundations rooted in the power of civilizations that grew at the expense of the exploitation of nature and human slavery.

Currently, with technological development and the exponential growth of the human population, the levels of resource consumption and pollution emission have largely exceeded the capacities of Planet Earth, causing global imbalances that, among other consequences, are reflected in climate change, marked losses of biodiversity and ocean pollution. In recent decades, humanity has woken up to the seriousness of these environmental imbalances, and there is some social and political unease at our inability to reverse the catastrophic course set for the coming decades. However, the solutions that have been advocated to mitigate the effects of the ecological crisis insist on focusing mainly on developing cleaner and more efficient technologies, and there is enormous resistance to investing in social and cultural changes, where the real root of the problem lies. Technology can be very useful to us in this challenge, but we must not forget that it has always been the instrument which, in the light of our cultural will, has enabled us to exploit intensively the earth's resources. Technology can only be seen as a tool whose use, for the good or the bad of the natural balance, depends on our will, our ethics and morals, our culture. So, first of all, it is a cultural transformation that we need in order to face the current ecological crisis, and this transformation is only possible through education.

Present paper, along the following sections, analyses the cultural relationship between humans and nature, unravelling the pathway along which humanity has placed itself outside the natural context and started to be the source of a serious global ecological crisis. Besides this analysis, crucial to understand the dimension of the challenge that present environmental imbalances poses to modern societies, we question the effectiveness of the environmental education practices that have been followed. As so, a redirected approach for environmental education is suggested, with new goals and strategies focused not only in the development of environmental literacy but also environmental culture. Finally, in this

context, a redesigned conceptual framework to promote environmental education effectiveness is proposed, based in real sociocultural contexts and in the light of the Vygotsky's Sociocultural Theory of Learning.

2. Cultures of Nature

In a Judeo-Christian culture, our moral and ethics are set to explore nature with no regrets since a few thousand years ago the book of Genesis was written (Mazar, 1969). In fact, the foundations of this two monotheistic religions lay on the words of God said after the creation of women and man: "God said to them: be fruitful and multiply and fill the earth and subdue it, and have dominion over the fish of the sea and over the birds of the heavens and over every living thing that moves on the earth" (Book of Genesis, verse 28, chapter 1). Thus, these two monotheistic religions, together with the other one, Muslim, establish on their foundations the supremacy of man over the nature, and besides accounting for over than 50% of world population, they dominate and influence the human cultures over the world.

Edward Tylor, an English anthropologist, defined "culture" as a complex system of codes and standards shared by a society or social group and manifested in the norms, beliefs, values, creations and institutions that are part of the individual and collective life of that society or group (Tylor, 1871). Additionally, following the anthropocentric trend of human civilizations, the concept of culture has been asserting itself as something that distinguishes us from the rest of nature and opposes us to it (Read, 2012), ignoring in most cases that cultural diversity is, in fact, a consequence of the different environments in which each populations have been settled (Terray, 2010; Spínola, 2020). This anthropocentric quest to distinguish us from other animals, has tried to determine some characteristics that could make us exceptional, but even when it is said that culture is what makes us human, we must not forget that other species, particularly primates, also reveal their cultures, even if we want to classify them as rudimentary (Melo, 2012; Read, 2012). No matter who much we want to distinguish ourselves from nature, the fact is that we are its continuity. Humanity, and all that it does and creates, is also nature.

The relationship between culture and nature reveals a paradox exposed by the contradiction between their interdependence and, at the other side, the anthropocentric view of both being apart. In the past few decades, the study of the relationship between cultures and nature brought to light the concept of "cultures of nature", revealing that what we consider to be natural, the value that we give to it and the way we understand it, varies culturally. The way we understand nature in each culture is a major question since it determines our relationship with it and the way we live in our communities, defining our environmental impact (Head, 2017). The concept "cultures of nature" help us to deconstruct the barriers between nature and society, that are hegemonic in modern Western cultures, and to highlight the interconnection between the human and the

non-human world (Ares-López, 2017). This concept is defined as clusters of beliefs, practices, and assumptions, historically and geographically situated, underlying the relationship between people and non-human living organisms or inanimate matter. Everyone is imbued with a certain culture in the way they are socialized to think and act on the territory and natural life (Ares-López, 2017; Head et al., 2005). As so, the different human communities reveal different "cultures of nature" but, unfortunately, in the westernized societies, the great majority, a utilitarian view of the environment predominates, being seen as a source of resources to be explored. Claude Lévi-Strauss characterized well this context, concluding that the primitive societies of hunter-gatherers, and even of farmers and shepherds, reflected in their ideology the fact that they were strongly dependent on nature, seeing it not as their property, but as a spiritual territory that, in addition to nourishing them, also allowed contact with ancestors, spirits and gods. The first act of mutilation of the human species over nature was its own separation, a gradual process strongly influenced by most monotheistic religions, the Discoveries, the Industrial Revolution, the growth of cities and the scientific and technological revolution, and globalized with the expansion of Western civilization (Terray, 2010; Lévi-Strauss, 1973; Lévi-Strauss, 1976). Surpassed the feeling of belonging to nature, and equipped with powerful technological tools, most of humanity felt entitled to intensively explore the environment in the light of immediate interests, which was quickly translated into the global imbalances that are quite evident today.

3. "Cultures of Nature" and Environmental Education

Julian Steward (1955) gave an important contribution to our understanding of the human-nature interaction. He developed a theoretical approach, coined as "cultural ecology", to explain the cultural changes caused by the need for environmental adaptation. Assuming that culture is superorganic, he defended that cultures, not individuals, adapt. In fact, later, under the umbrella of a new concept, the ecosophy or ecophilosophy, Félix Guattari (1992) stated that without modifications to the social and material environment, there can be no change in mentalities, which make we think that environmental education needs to go far beyond to an approach to individuals and compromise further with social and cultural changes.

Environmental education has as its main purpose to promote environmental literacy, an essential task to improve environmental quality (Disinger & Roth, 1992). The concept of environmental literacy includes a wide range of aspects, namely knowledge and understanding of environmental concepts, problems and issues, a set of cognitive and affective dispositions, and a series of cognitive skills and competences, together with the appropriate behavioral strategies for implement this knowledge and understanding in order to make effective and relevant decisions in different environmental contexts (Simmons, 1995; Hollweg et al., 2011; Hungerford & Volk, 1990; Cook & Berrenberg, 1981; Stern, 2000). In a

simple way, we can say that knowledge, attitude and behavior capture the most essential aspects of environmental literacy (Hallfreðsdóttir, 2011; Krnel & Naglič, 2009; Igbokwe, 2012; McBeth & Volk, 2010; Kuhlemeier et al., 1999; Pe'er et al., 2007; Spínola, 2015), but in order to better reveal the complexity and interdisciplinarity of this concept, and the difficulties that face its promotion, it will be worth deepening it. Among others, knowledge must include physical, ecological, social, cultural and political systems, disposition must involve sensitivity, attitude, personal responsibility and motivation, skills must imply the ability to identify, analyze, investigate, evaluate and resolve environmental issues, and environmentally responsible behavior must include eco-management practices, persuasion, consumer action on the economy, political action and legal action (Hollweg et al., 2011). However, despite the great effort that, around the world, has been put in environmental education, the ecological crisis has only worsened, leading some authors to question the effectiveness of the strategies followed (Spínola, 2014; Blumstein & Saylan, 2007). As so, and considering the time we no longer have for social and economic transformation that can rebalance humanity with nature, it becomes clear that we need to look for more effective paths than those we have been following in past decades.

The effectiveness of environmental education in its contributions to tackle the present ecological crisis is a question of major concern. Its goal in promoting environmental literate citizenry needs to be seen as a way to change our "culture of nature", i.e. the way we see and interact with nature. Since it is unquestionable that our "culture of nature" is integrated in our general culture, and considering Steward (1955) and Guattari (1992), environmental education needs to address social changes, more than individual, and, to be successful, can only be supported by physical and organizational changes on the contexts people live. This means that environmental education needs to untie from school and formal education and place itself among the society.

4. Environmental Culture

It is of our understanding that environmental education has been misused along past decades due to the believe that changing individuals will change societies. Despite this approach could effectively lead to same changes, it will take too much time, time that we don't have since the ecological crisis knocked on our door some time ago and is now walking around in our living room. We need to boost an educational process that could answers to the crying help of humanity and the Planet Earth, and we believe that it implies to reformulate the means and goals of environmental education. As so, we suggest drifting environmental education purpose from environmental literacy, more school and individually centered, to environmental culture, a concept that could only be fully understood and promoted in a social and contextualized approach.

The concept of "environmental culture" has been widely used by eastern researchers but is quite rare in western published works. Its most popular use

among the English bibliography was as a book title of the Australian philosopher and ecofeminist Val Plumwood (2002). She does not elaborate on its definition but leaves an important framework that aligns the concept with the idea of being the only possible way to overcome the environmental crisis in which humanity is involved. Despite commonly used in Russian literature, this concept is frequently presented with a similar definition as environmental literacy, being centered on changes at the individual level (Stukalyenko, 2015; Simonova & Varnikova, 2015; Kamakhina et al., 2018; Shishkina, 2008). Nevertheless, several other authors from Russia, as well as ex-URSS republics and Asian countries, give us a more advancing understanding, including an all society transformation (Tregubov, 2012; Sabrekov, 2020; Shilin, 2000; Ridei et al., 2014; Titov & Fufagin, 2016). Recently, Sabrekov (2020) delineated a clear picture on what did happens to environmental education along the past fifty years. Considering that the concept of "environmental culture" emerged in the 1970's through the work of the cultural researcher Lev Kogan, Sabrekov regrets that, with the advent of the industrial society in the 1980's, it suffered a distortion with the "environmental culture" concept being eclipsed by the environmental education itself as an entity/concept. Later, environmental education became science-centered, and ecological culture becomes to be based only in scientific knowledge. However, Sabrekov considers that, presently, it is clear for the world scientific community that the environmental crisis can't be solved only by technical means, which demands for a revision on the environmental education approach. This Sabrekov statement could explain why, even in eastern countries, there was a clear distortion on the practices of the environmental education, aligning it in the individual and technologic spheres despite the social amplitude that was given in its foundations in the 1970's.

As so and considering the huge challenge humankind is facing with present ecological crisis, we need to refresh the purpose of environmental education, centering it on the environmental culture, that could enhance the social, political and economic transformations that are required. To start this approach, a clear definition of this environmental culture that we pursue needs to be set and, as so, we leave here a contribution:

Environmental Culture—a complex system of codes, standards and forms of organization shared by a society, or a social group, learned through education and socialization, and that contributes to the maintenance of environmental balances. It manifests itself through norms, beliefs, values, concepts, knowledge, habits, practices, expectations, lifestyles, institutions, and models of social and economic organization that, as a whole, ensure the environmental sustainability of a community.

5. An Educational Approach to Promote Environmental Culture

Since it is clear that, in order to mitigate the ecological crisis in which we live

and to re-establish natural balances, we need profound cultural transformations in our societies, abandoning an anthropocentric view and embracing biocentrism/ecocentrism, the approach to environmental education cannot be limited to classical teaching models based on the schools and classrooms. Aware that the challenge is huge and realizing that it depends a lot on social transformations, along with technological ones, environmental education will have to, first, change its focus from schools and children to the daily life of all institutions and social groups, in a transversal and multidisciplinary/transdisciplinary way, through the development of "educating communities" for environmental culture and sustainability.

Following the considerations of other authors that address environmental literacy (Lucas, 1979; Uzzell, Rutland, & Whistance, 1995), the context for the development of environmental culture will have to be the society itself and the environment, involving social groups and communities in the implementation of measures to solve or mitigate imbalances and ecological crisis, thus giving them the opportunity to understand and solve, in an active and democratic way, environmental issues at the local level, so that they understand the relationship with their own lives and feel encouraged by the success of their actions. In fact, previous studies show that the environmental literacy, and we believe that also environmental culture, tends to be higher when direct contact with nature and the resolution of environmental problems are promoted, and when the relationship with environmental issues is mediated by someone seen as a model/reference, a leader (Brody & Storksdieck, 2013), revealing that these learning processes are closely dependent on real sociocultural contexts and on the interaction with the social environment, as advocated by Vygotsky's Sociocultural Theory of Learning (Vygotsky, 1978).

Thus, we propose that environmental education should be integrated into the different places and organizations that structure today's societies/communities, from public bodies that manage settlements or natural spaces, and even areas of activity such as agriculture, teaching or industry, to private companies that create employment and provide products and services to meet the needs of communities, through the entities that exercise power, regardless of the political system in force, and associations that bring together interest groups in social, economic and environmental areas. This decentralization of environmental education, with its incorporation into the community itself, should allow it to be free from the education model or its institutions, although it can and should beneficiate from their action and resources, and be supported in the learning-by-doing approach of John Dewey (DuFour et al., 2016). In these real contexts, whether physical, logistical, social, cultural, economic, and environmental, environmental education should not only interact with the individual but, more than that, involve social groups and make the whole community responsible (Blair, 2008).

In this context, and to achieve environmental sustainability, we developed and propose a conceptual framework to drive environmental culture (**Figure 1**). This

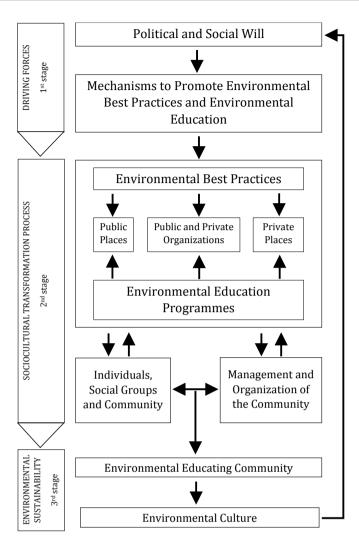


Figure 1. Proposed conceptual framework to drive environmental culture. The framework is organized in three sequential stages that loop back in a closed cycle of continuous improvement to build an environmental educating community.

framework is based in a holistic and sociocultural approach to build an environmental educating community that could promote its own environmental culture. Along the proposed conceptual framework, three stages need to be covered to reach its goals and, finally, a feedback loop to provide a continuous improvement cycle. First stage is a lead-off step to trigger the process but also to maintain and fuel it, so it should be sustained alongside the next two stages. It constitutes the driving force of the process and is based on the implementation of mechanisms that could promote environmental best practices and environmental education programs in all the community. These mechanisms may, for example, be of a mandatory nature or based on systems of incentives and penalties, and for them to arise there must be a certain level of political and social will, which, in turn, will depend on the general sensitivity to mitigate the current ecological crisis. Second stage constitutes the transformation of the sociocultural context through the implementation of environmental best practices and environmental transformation of the sociocultural context through the implementation of environmental best practices and environmental transformation of the sociocultural context through the implementation of environmental best practices and environmental best practices are environmental best practices and environmental en

ronmental education programs, along public and private places and organizations in a close relationship with the community and the social groups and individuals that constitute it, as well as with the adaptation of its management and organization models. Finally, the third stage represents oncoming of the environmental sustainability with the establishment of an environmental educating community that is, by themselves, able to develop and maintain environmental culture, which, in turn, will reinforce political and social will that, at the first stage, feed the driving force of the all system, improving its effectiveness. Bellow we detail, frame, and justify this conceptual framework.

5.1. Educating Communities for Environmental Culture

Accordingly to our conceptual framework to drive environmental culture (Figure 1), it is essential to adapt the physical space and its functional organization for environmental education and for the promotion of environmental culture, a process in which the community that experience these contexts must necessarily be involved, not only in the implementation but also in the previous phases of reflection, design and decision (2nd stage of the conceptual framework for sociocultural transformation). In the creation of "educating communities" for environmental culture (achieved at the 3rd stage of the conceptual framework that represents oncoming of the environmental sustainability), organizations, whether public or private, are key elements and need to become real learning environments. Regardless of its nature or area of activity, it will be essential to ensure that the best practices on the management of environmental aspects of organizations are progressively adopted, namely in the reduction and recycling of wastes, saving and efficiency in the use of water and energy, or, among others, prevention of atmospheric emissions. This process of incorporating environmental best practices in organizations should, itself, be an approach of environmental education through the involvement and participation of its employees and internal structures, from the phase of identification of the environmental aspects that need intervention to the adoption of practices that will result in the improvement of its environmental performance. On the other hand, in this phase, besides the community that directly guarantees the operation of the organization, other stakeholders should also be called to participate actively, from clients to suppliers, to the employees' own families and friends, labor unions and environmental organizations, or local public entities. In this way, not only a process of cultural adaptation of the organization is guaranteed, but social transformation in the associated community is also enhanced, in a context of non-formal and informal environmental education. In order to trigger and maintain the evolution of these contexts with which the social interaction of communities is permanent, exercising, therefore, a decisive influence in the process of promoting environmental culture, it is not enough to wait for voluntary adhesions and spontaneous initiatives, it is necessary to force and motivate them in a logic of combating inertia that always delays or inhibits the processes of change (1st stage of the conceptual framework: Driving Forces).

Thus, it will always be very useful if, by the will of public entities in charge of defining and supervising the standards by which societies and their organizations are governed, mechanisms arise to guarantee an adequate level of environmental performance, whether in minimizing pollution or promoting the efficient use of resources. To have a massive movement in the adaptation of the organizations to a better environmental performance, transforming themselves into active contexts of environmental education that promote environmental culture, and with no time to wait for market laws or businessmen sensitivity, it is essential that public entities, making use of the political power they hold, create legal and regulatory conditions to trigger and maintain this process. Despite this could be the most expeditious process, but realizing that it depends on the existence of political will and a certain level of acceptance by society, only possible, in democratic societies, when environmental sensitivity is present, it may only be possible to trigger and maintain this process through incentive and voluntary mechanisms, or a mixed model including also mandatory and penalizing approaches. What is certain is that, given the climatic and environmental urgency, whatever mechanisms are adopted as driving forces, they need to be strong enough for this process to become the rule in all organizations, and not just, as it is today, an exception.

In this strategy of incorporating environmental education into society and making it a context for the active promotion of environmental culture in a process of sociocultural transformation (2nd stage of the conceptual framework), the adequacy of public places and its functioning is also, in addition to organizations, important. Not only for its exposure and for the social sharing that occurs there, but also for the status it holds in the incorporation of norms and values in society, the public places must be reorganized in a functional point of view so that environmental best practices are adopted, both in terms of the management of the public areas itself and also on its use by the community, considering mobility, waste management and, among many others, the use of water and energy resources.

In addition to the adequacy and alignment of organizations and the public places, there is another basic aspect to consider in the process (2nd stage of the conceptual framework) that should lead to the development of an educating community for environmental culture: their management and organization models that constitute the interface on which all the players of the community/society interact, whether in an individual or collective, public or private context. These models, guiding the actions of organizations and social groups, have strong influence in the culture of the community/society, and it is essential that they become consistent with the educational approach to promote environmental culture. In this sense, legislation, regulation, and supervision, as well as public solutions to respond to the needs of the community, should be geared towards mitigating environmental imbalances, constituting a benchmark of environmental best practices to be followed by all. The adaptation of the model of society/community to the challenge of sustainability is essential for the environment

tal culture enhancement reach also more private/reserved contexts, individual and of group, namely in families or at home. Accordingly, those mechanisms mentioned above to trigger and maintain environmental best practices (1st stage of the conceptual framework: Driving Forces) at the organizations should also be in place to more restricted social contexts, namely family and residential, ensuring a coherent evolution between the broader sociocultural contexts and others more intimate that occur at private places.

5.2. Environmental Education in Real Contexts

Together with the implementation of environmental best practices in real sociocultural contexts that embody the functioning and experience of the community, evidenced in organizations and public and private places, the promotion of environmental culture gains momentum and effectiveness through the development of environmental education programs committed with a practical approach and a transversal involvement of the community (2nd stage of the conceptual framework). Environmental education programs could only beneficiate in its effectiveness by integrating itself in the community in a diversified manner and being present at the everyday life. When the communities/societies are organizing themselves to respect the environmental equilibrium, the environmental education needs to be present, being part and following that process, with efforts centered in dynamizing social groups and communities in a problem solving and learning-by-doing approach. In fact, in our model, the approach we propose to transform the contexts in which the community moves in their daily life, namely through the implementation of the environmental best practices, is an integral and indispensable part of the environmental education approach itself. It won't be enough, as it has happening in the past few decades, if environmental education remains confined to the school walls or relegated to a specific corner. Art, economy, sport, leisure, business, solidarity, politics, technology, religion, family life, communication, among many other aspects of our communities, need to be brough together through environmental education to boost environmental culture. Besides the social learning that an "educating community" should naturally assure, particularly in the context of the implementation of environmental best practices, an umbrella constituted by an environmental education program needs to be developed with, and for, the entire community. In this approach, we are not proposing just another battery of environmental awareness and education activities aimed at specific audiences, but rather a program that is transversal to society with implications in all its sectors of activity and with the capacity to penetrate at the individual and social life of each one. This program will only achieve its goals if it is effectively developed in a context in which a sustainable community is being built, in the way it is organized and how it functions, and in which its main actors are committed to this process. In this way, it is important to guarantee a program of environmental education that, with sufficient and properly qualified human resources, is present in the field to facilitate the integration of norms, values, knowledge and new behaviors, always articulated with the democratic involvement of the community in the very definition and implementation of the necessary environmental best practices, committing everyone to the process of promoting environmental culture.

Finally, in the third stage of our conceptual framework we should reach to a new and evolved sociocultural context, reflected in the existence of an environmental educating community that promote environmental culture, which, in turn, should assure and improve environmental sustainability. From the efforts of the second stage of our conceptual framework, an environmental educating community should be built, and its existence should be evident at generalized environmental best practices across the organizations and the territory, together with the activities of a transversal and inclusive environmental education program. This means that public and private organizations should had put in place a consistent and efficient environmental management system, namely to reduce and recycle their wastes, to use efficiently the energy as also reduce their needs and take advantage of renewable sources, to reduce water use, reuse it and avoid its pollution, to reduce the use of raw materials and respect biodiversity, and many other as reducing noise or greenhouse gases emissions. An environmental educating community means an exemplar environmental management system in place, together with environmental education programs supported by a team of trained educators, with the necessary resources, to promote defined strategies and activities to enhance environmental literacy, and make everyone also an educator in the community. At this stage, the community should show good environmental indicators on their performance but also high levels of environmental literacy, and despite environmental education programs and environmental best practices from the second stage of the conceptual framework are presented in parallel, they should be seen, in fact, as interdependent approaches, since one isn't effective without the other. Likewise, new models of community organization and functioning that respect environmental balance, namely circular economy, must be, at least, under development, as well as norms, values and lifestyles aligned with environmental sustainability.

At this third stage of our conceptual framework, as environmental culture is built, a positive feedback to the first stage close the loop and influence driving forces, increasing the political and social will. As so, a reinforcement of the mechanisms to promote education and environmental best practices is expected. creating a cycle of continuous improvement that will boost sequentially the process of driving environmental culture and sustainability.

6. Conclusion

The urgent and necessary action due to the ecological crisis in which we live demands profound changes in the way human societies organize and function, changes that are not compatible with maintaining the culture of consumption and disposal that has brought us here. Restoring environmental balances implies a profound cultural change in the way we relate and interact with the world, both in its human and non-human dimensions. It implies the development of an environmental culture that makes human societies less anthropocentric and more biocentric, with, among others, norms, values, lifestyles and models of organization compatible with the environmental sustainability.

To achieve this high level of social and cultural development we need to be creative in the way environmental education is developed, putting aside the idea that this could be done with an individual approach and without a general commitment of the community. Environmental education should break free from any specific sector and disseminate itself along all the community, in its daily life and activities. The environmental education needs to be part of our communities and, to that, we need to live in "educating communities" compromised with the environmental culture. The development of such "educating communities" implies profound transformations that, besides education, need to gather contributions from all sectors and players in order to achieve consistency with environmental sustainability. Succeed in the education for an environmental culture, particularly in the short time we have to tackle the ecological crisis, is only possible with a comprehensive effort that could merge the implementation of practices that respect the environmental balance with a new vision, norms and values for human life. As so, the new conceptual framework presented in this paper to drive environmental culture contributes to change the paradigm of environmental education but also its effectiveness. Disrupting with an approach focused at school, infantilized, and put aside from community real life, this conceptual framework pushes back environmental education to the center of the community and its sociocultural contexts. Besides that, it proposes a transformation of the contexts in each sociocultural learning could happen, particularly through an approach of environmental best practices implementation with social and political involvement. The final goal is to raise an environmental educating community that could promote environmental culture and sustainability, and, from there, drive a continuous loop of improvement.

Since this is a theoretical approach, despite supported on previous studies and on the environmental education practical experience of the author, it needs now to be validated through its implementation and evaluation in a real scenario. This is what the author intends to do in its future research.

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Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

References

Ares-López, D. (2017). Cultures of Nature in Mid-Twentieth-Century Galicia. In B. Sam-

- pedro Vizcaya, & J. Losada Montero (Eds.), *Rerouting Galician Studies* (pp. 57-71). Cham: Palgrave Macmillan. https://doi.org/10.1007/978-3-319-65729-5_4
- Blair, M. (2008). Community Environmental Education as a Model for Effective Environmental Programmes. *Australian Journal of Environmental Education*, *24*, 45-53. https://doi.org/10.1017/S0814062600000574
- Blumstein, D. T., & Saylan, C. (2007). The Failure of Environmental Education (and How We Can Fix It). *PLoS Biology*, *5*, e120. https://doi.org/10.1371/journal.pbio.0050120
- Brody, M., & Storksdieck, M. (2013). Evaluation and Analysis of Environmental Education Programs, Materials, and Technologies and the Assessment of Learners and Learning. In J. Dillon, M. Brody, & R. B. Stevenson (Eds.), *International Handbook of Research on Environmental Education* (pp. 283-288) New York: Routledge Publishers.
- Cook, S., & Berrenberg, J. L. (1981). Approaches to Encouraging Conservation Behavior: A Review and Conceptual Framework. *Journal of Social Issues, 37*, 73-107. https://doi.org/10.1111/j.1540-4560.1981.tb02627.x
- Disinger, J. F., & Roth, C. E. (1992). Environmental Education Research News. *The Environmentalist*, *12*, 165-168. https://doi.org/10.1007/BF01267599
- DuFour, R., DuFour, R., Eaker, R., Many, T. W., & Mattos, M. (2016). *Learning by Doing:*A Handbook for Professional Learning Communities at Work (3rd ed.). Bloomington,
 IN: Solution Tree
- Guattari, F. (1992). Pour une refondation des pratiques sociales. *Le Monde Diplomatique*, 26-27. https://www.monde-diplomatique.fr/1992/10/GUATTARI/44749
- Hallfreðsdóttir, S. (2011). Eco Schools—Are They Really Better? Comparison of Environmental Knowledge, Attitude and Actions between Students in Environmentally Certified Schools and Traditional Schools in Iceland. A thesis submitted in partial fulfillment of the requirements of Lund University International Master's. Programme in Environmental Studies and Sustainability Science (LUMES). Sweden: Lund University Centre for Sustainability Studies, LUND.
 - https://www.lumes.lu.se/sites/lumes.lu.se/files/hallfredsdottir_thesis_2011.pdf
- Head, L. (2017). Cultures of Nature. In D. Richardson, N. Castree, M. F. Goodchild, A. Kobayashi, W. Liu, & R. A. Marston (Eds.), *International Encyclopedia of Geography: People, the Earth, Environment and Technology.* John Wiley & Sons, Ltd
- Head, L., Trigger, D., & Mulcock, J. (2005). Culture as Concept and Influence in Environmental Research and Management. *Conservation and Society, 3,* 251-264.
- Hollweg, K. S., Taylor, J. R., Bybee, R. W., Marcinkowski, T. J., McBeth, W. C., & Zoido,
 P. (2011). *Developing a Framework for Assessing Environmental Literacy*. Washington
 DC: North American Association for Environmental Education.
- Hublin, J., Ben-Ncer, A., Bailey, S., Freidline, S. E., Neubauer, S., Skinner, M. M., Bergmann, I., Le Cabec, A., Benazzi, S., Harvati, K., & Gunz, P. (2017). New Fossils from Jebel Irhoud, Morocco and the Pan-African Origin of *Homo sapiens*. *Nature*, *546*, 289-292. https://doi.org/10.1038/nature22336
- Hungerford, H. R., & Volk, T. (1990). Changing Learner Behavior through Environmental Education. *The Journal of Environmental Education*, *21*, 8-22. https://doi.org/10.1080/00958964.1990.10753743
- Igbokwe, A. B. (2012). Environmental Literacy Assessment: Exploring the Potential for the Assessment of Environmental Education/Programs in Ontario Schools. *International Journal for Cross-Disciplinary Subjects in Education (IJCDSE)*, *3*, 648-656. https://doi.org/10.20533/ijcdse.2042.6364.2012.0091
- Kamakhina, R. S., Mavludova, L. U., & Galimova, N. R. (2018). Form of the World in the

- Work of the Biology. *Contemporary Problems of Science and Education, No. 5.* http://www.science-education.ru/ru/article/view?id=28005
- Krnel, D., & Naglič, S. (2009). Environmental Literacy Comparison between Eco-Schools and Ordinary Schools in Slovenia. *Science Education International*, *20*, 5-24.
- Kuhlemeier, H., Van Den Bergh, H., & Lagerweij, N. (1999). Environmental Knowledge, Attitudes, and Behavior in Dutch Secondary Education. *The Journal of Environmental Education*, *30*, 4-14. https://doi.org/10.1080/00958969909601864
- Lévi-Strauss, C. (1973). Anthropologie structurale deux. Paris: Plon.
- Lévi-Strauss, C. (1976). Structural Anthropology (Vol. 2). Chicago, IL: University of Chicago Press.
- Lucas, A. M. (1979). *Environment and Environmental Education: Conceptual Issues and Curriculum Implications*. Melbourne: Australian International Press and Publications.
- Mazar, B. (1969). The Historical Background of the Book of Genesis. *Journal of Near Eastern Studies, 28,* 73-83. https://doi.org/10.1086/371994
- McBeth, W., & Volk, T. L. (2010). The National Environmental Literacy Project: A Baseline Study of Middle Grade Students in United States. *The Journal of Environmental Education*, 41, 55-67. https://doi.org/10.1080/00958960903210031
- Melo, G. D. B. (2012). Nature and Culture Intertwined or Redefined? On the Challenges of Cultural Primatology and Sociocultural Anthropology. *Revue de Primatologie, 4.* https://journals.openedition.org/primatologie/1020
- Pe'er, S., Goldman, D., & Yavetz, B. (2007). Environmental Literacy in Teacher Training: Attitudes, Knowledge, and Environmental Behavior of Beginning Students. *The Journal of Environmental Education*, 39, 45-59. https://doi.org/10.3200/JOEE.39.1.45-59
- Plumwood, V. (2002). *Environmental Culture: The Ecological Crisis of Reason*. London: Taylor & Francis Ltd.
- Read, D. (2012). How Culture Makes Us Human: Primate Social Evolution and the Formation of Human Societies (p. 236). Walnut Creek, CA: Left Coast Press, Inc. https://doi.org/10.2139/ssrn.2705980
- Ridei, N., Rybalko, Y., Kycherenko, Y., Palamarchuk, S., & Shofolov, D. (2014). The Role of Ecological Culture as an Indicator of Sustainable Development of Relations between Society and Nature. *European Scientific Journal*, *9*, 14-23.
- Sabrekov, M. S. (2020). Education Situation as the Source of the Green Culture of the School in the Process Ecostino-Ecestic Education. *Contemporary Problems of Science and Education, No. 3.* http://www.science-education.ru/ru/article/view?id=29787
- Shilin, K. I. (2000). Ecosophical Beginnings of the Sociology of the Future. The First Encyclopedia of the Third Millennium (Ekosofskie nachala sociologii buduschego. Pervaia enciklopediia tret'ego tysiacheletiia) (Vol. 1). Moscow: Socium.
- Shishkina, E. A. (2008). Sociocultural Practices as a Factor in the Formation of Environmental Culture. *Sociologicheskie issledovanija [Sociological Studies]*, *No. 9*, 79-84.
- Simmons, D. (1995). Developing a Framework for National Environmental Education Standards. In *Papers on the Development of Environmental Education Standards* (pp. 10-58). Troy, OH: NAAEE.
- Simonova, I. N., & Varnikova, O. V. (2015). Environmental Culture as Phenomenon Modern Higher Technical Education. Contemporary Problems of Science and Education, No. 1. http://www.science-education.ru/ru/article/view?id=17965
- Spínola, H. (2014). Forty Years of Environmental Education in the Portuguese Democra-

- cy. The Online Journal of New Horizons in Education, 4, 48-56.
- Spínola, H. (2015). Environmental Literacy in 9th Grade Students from Madeira Island (Portugal). *The Online Journal of New Horizons in Education, 5,* 28-36.
- Spínola, H. (2020). Literacia do Património Natural. MASF Journal, 3, 75-88.
- Stern, P. (2000). Toward a Coherent Theory of Environmentally Significant Behavior. *The Journal of Social Issues, 56,* 407-424. https://doi.org/10.1111/0022-4537.00175
- Steward, J. H. (1955). *Theory of Culture Change: The Methodology of Multilinear Evolution* (244 p). Urbana, IL: University of Illinois Press.
- Stukalyenko, N. M. (2015). The Development of Environmental Culture as a Factor of Social Progress towards Sustainable Development. *International Journal of Applied and Fundamental Research*, 12, 929-931.
- Terray, E. (2010). La vision du monde de Claude Lévi-Strauss. *L'Homme*, 193, 23-44. https://doi.org/10.4000/lhomme.24346
- Titov, V. N., & Fufagin, A. S. (2016). State Information as One of the Aspects of the Assessment of the Level of the Social System on the City of Saratov. *Successes of Modern Natural Science, No. 4*, 202-206.
 - http://www.natural-sciences.ru/ru/article/view?id=35888
- Tregubov, O. G. (2012). Methodological Approaches, Patterns and Principles of the Green Culture of the Teenage. *Contemporary Problems of Science and Education, No.* 4.
 - http://www.science-education.ru/ru/article/view?id=6700
- Tylor, E. B. (1871). Primitive Culture. London: John Murray.
- Uzzell, D., Rutland, A., & Whistance, D. (1995). Questioning Values in Environmental Education. In Y. Guerrier, N. Alexander, J. Chase, &M. O'Brien (Eds.), Values and Environment: A Social Science Perspective (pp. 171-182). Chichester, UK: John Wiley & Sons
- Vygotsky, L. S. (1978). *Mind in Society: The Development of Higher Psychological Processes.* Cambridge, MA: Harvard University Press.