

Transculturality in Teaching and Learning about and with Nature Towards a Transdisciplinary Pedagogical Paradigm

AUTHOR

Samuel Lopes PINHEIRO

PhD in Environmental Education from
the Federal University of Rio Grande
(FURG), Brazil

Member of CIRET, France
samuelshankara@gmail.com

ORCID ID: <https://orcid.org/0000-0002-2450-7813>

Please cite this article as:

Pinheiro, Samuel Lopes, „Transculturality in Teaching and Learning about and with Nature Towards a Transdisciplinary Pedagogical Paradigm”, in Popa Tache, Cristina Elena, Hubert Landier, Leonardo da S.G. Martins da Costa & Mariana Thieriot Loisel (eds.), *For an International Transdisciplinary Chair. About the Dialogue Between Culture and Technoscience*, ADJURIS – International Academic Publisher, Bucharest, Paris, Calgary, 2024, p. 67-81, <https://doi.org/10.62768/ADJURIS/2024/2/04>

Abstract: *This article investigates the integration of transcultural and transdisciplinary approaches in environmental education, aiming to overcome the limitations of conventional teaching and learning methods. The central research question is: How is the concept of nature interpreted and integrated by transdisciplinary thinkers, and what are the pedagogical implications of this integration? The methodology employed includes an extensive bibliographic review of transdisciplinary scholars and reflection on personal educational experiences in philosophies such as Yoga and Vedanta. The review and reflections sought to challenge reductionist views of nature and promote a multidimensional perspective that embraces philosophical, linguistic, and historical dimensions to address contemporary environmental crises. The conclusions of the article emphasize the transformative potential of adopting transdisciplinary and transcultural frameworks in environmental education. These frameworks not only enrich the educational process but also enhance the ability to address contemporary environmental issues. The importance of a dialogue between scientific knowledge and traditional wisdom is highlighted, demonstrating how this synthesis can enrich our understanding of current environmental dilemmas and stimulate new human-nature relationships. The study proposes a pedagogical paradigm that values cultural diversity in the educational process about and with the natural environment, encouraging the exploration and application of these methodologies in various educational settings. This suggests a paradigmatic shift in environmental education towards a more inclusive practice that integrates theoretical knowledge bodies and values practical and experiential engagement with the environment, crucial for cultivating deep environmental awareness and forming engaged individuals.*

importance of a dialogue between scientific knowledge and traditional wisdom is highlighted, demonstrating how this synthesis can enrich our understanding of current environmental dilemmas and stimulate new human-nature relationships. The study proposes a pedagogical paradigm that values cultural diversity in the educational process about and with the natural environment, encouraging the exploration and application of these methodologies in various educational settings. This suggests a paradigmatic shift in environmental education towards a more inclusive practice that integrates theoretical knowledge bodies and values practical and experiential engagement with the environment, crucial for cultivating deep environmental awareness and forming engaged individuals.

Keywords: *environmental education; nature; philosophy of nature; teaching and learning; transcultural dialogue; transdisciplinarity.*

DOI: <https://doi.org/10.62768/ADJURIS/2024/2/04>

1. Introduction

This work aspires to contribute to the ongoing discussions regarding the establishment of a transdisciplinary chair. By integrating the philosophical underpinnings of Nicolescu and Merleau-Ponty with the conceptual insights of transculturality and the Complexity, we aim to delineate pathways for a transdisciplinary pedagogical paradigm. This paradigm seeks to bridge disciplinary boundaries, fostering a comprehensive and interconnected understanding of nature that aligns with the evolving needs of education in a globalized world. In doing so, we envision laying the foundation for a transformative and integrative approach to teaching and learning about and with nature.

For that, the present text goes into the profound implications of transculturality in the realm of teaching and learning about and with nature. Drawing inspiration from Basarab Nicolescu's work 'Science, Meaning, and Evolution' from 1995¹. Nicolescu's call for a paradigm shifts towards a novel philosophy of nature, facilitated by Transdisciplinarity, which serves as a catalyst for our theoretical movement here.

Merleau-Ponty's² nuanced examination of the concept of nature, with a focus on etymology and historical evolution, establishes a foundational framework. This exploration provides crucial insights into the intricate layers inherent in the discourse surrounding nature, offering philosophical lens through which to approach the subject. As well as the reflections on the nature of nature in Edgar Morin's work on method³, evidenced in his epistemology of complexity, these are important points of reference for our debate.

Central to our discussion is the conceptualization of transculturality, as elucidated by some authors of Transdisciplinary studies. Transculturality, in this context, is understood as a dynamic interplay of cultural influences that transcend conventional boundaries, building perspectives on the human-nature relationship. This conceptualization serves as a theoretical cornerstone for redefining pedagogical approaches to nature, emphasizing inclusivity and cultural sensitivity.

Embedded within the fundamental tenets of Environmental Education,

¹ Nicolescu, Basarab. (1995). *Ciência, sentido e evolução: a cosmologia de Jacob Boheme*. São Paulo: Attar.

² Merleau-Ponty, Maurice. (2022). *A natureza: curso do Collège de France*. São Paulo: editora WMF.

³ Morin, Edgar. (2016). *O método 1: a natureza da natureza*. Porto Alegre: Sulina.

our discourse underscores the paramount importance of fostering dialogue between diverse cultures. This dialogue not only enriches our understanding of nature but also paves the way for the coexistence of varying cultural perspectives. The dialogues of Eastern and Western knowledges, as well as the dialogue of tradition and scientific inquiry, emerges as pivotal facets of this transcultural purpose.

2. Methodological Aspects

During the presentation ‘Transculturality in Teaching and Learning About Nature’ at the Symposium⁴ for an International Transdisciplinary Chair in March 2024 promoted by Ciret (Centre International de Recherches et Études Transdisciplinaires), I explored the fundamental question: What is the concept of nature, and how is it addressed by transdisciplinary authors? This inquiry set the stage for discussing the integration of transdisciplinary and transcultural approaches in environmental education. The methodology combined with an extensive bibliographic review focused on scholars associated with Transdisciplinary fields and insights from my personal educational experiences in Yoga and Vedanta Philosophy. The objective was to challenge reductionist views and advocate for a multidimensional perspective that incorporates philosophical, linguistic, and historical dimensions to effectively address the environmental crises of our time.

It is argued that transdisciplinarity could expand our understanding of nature, offering new ways to engage with environmental challenges. By weaving together scholarly research and practical teaching experiences, the presentation demonstrated how transcultural dialogues could act as powerful mediators in education. This discussion emphasized the significance of transculturality as a key concept for realizing and enhancing a transdisciplinary pedagogy, enriching both the teaching process and learning outcomes. Throughout these reflections, we realized the essential need to articulate that teaching and learning about nature involves not only theoretical discourse about nature but also direct engagement with nature itself. That is why the preposition ‘with’ is added in the title.

In conclusion, the session highlighted the transformative potential of adopting transdisciplinary and transcultural frameworks in environmental education. It called upon educators and researchers to embrace these approaches, thereby enriching our educational practices and enhancing our ability to address contemporary environmental issues. This approach encourages further exploration and application of these methodologies across various educational settings,

⁴ The International Symposium was idealized by Dr^a Mariana Theriot Loisel and Eng. Leonardo da Silva Guimarães Martins da Costa and organized by Dr^a Mariana Theriot Loisel and Eng. Leonardo da Silva Guimarães Martins da Costa, Prof. Dr^a. Cristina Popa Tache and Prof. Dr. Hubert Landier. The presentations are available at: <https://vimeo.com/user163621619> (first part) <https://vimeo.com/user163621619> (second part) and <https://vimeo.com/user163621619> (third part).

stressing the importance of transculturality in developing effective transdisciplinary pedagogies and underscoring that true environmental education transcends the classroom to involve interactive experiences with the natural world.

3. Nature as a Foundational Pedagogical Force in Environmental Education

The ‘Atlas of the Wonders of Nature,’⁵ a Portuguese translation of the Spanish edition titled ‘Worlds of Nature,’ exemplifies a common portrayal in literature and atlases concerning the natural world. This material, adorned with photos, maps, and descriptions, presents an array of stunning landscapes from diverse locations such as Mont Blanc, the sands of the Sahara, the Nile River, the Dead Sea, Lake Baikal, the Kashmir Valley and many others. The predominant visual narrative in this atlas is one where the natural landscapes are depicted devoid of human presence, focusing solely on the scenic aspects of nature without any indication of human interaction. On the rare occasions where human figures are included, they are typically portrayed as adventurers or pioneers, underscoring their roles in exploring or studying these regions. This representation perpetuates an idealized view of nature, which, while visually appealing, subtly reinforces the notion that these landscapes exist in isolation from human societies, thereby legitimizing a conceptual separation between nature and humanity.

As an Environmental Educator and researcher in this area, I often find myself returning to this seemingly simple question about what nature is and whether we can confine it to a single definition. Conceptualizing a term can often be a reductive process in the sense of limiting the horizons of understanding of the concept being studied. However, concurrently, conceptualization can serve us to understand that the fields of knowledge are not isolated in their islands of operation and require healthy cooperation among them for their own advancement. This is the case with the concept of nature that we investigate here, sometimes in the field of language, sometimes in philosophy and history. But this also happens with the understanding of what Environmental Education is or what its field of study proposes, as it is a field in motion and that trans-disciplinary engages with many other fields of knowledge in order to investigate and confront the policrises.

We can say that we take Environmental Education as part of a broader educational process, imbued with the qualification of the environment in its educational process. In work with collaborators Amorim and Calloni, we previously wrote:

Environmental Education is nothing more than education itself but imbued with the difficult task of thinking beyond the strict sense of education in-

⁵ Martínez, Juan María; Lucía, Ángel. (1995). Atlas do extraordinário. *Prodígios da natureza*. Volume 1. Madrid: Ediciones del Prado.

tended for schooling. It involves a concern with human formation in a more comprehensive understanding horizon. This includes emerging themes, such as the maintenance of the entire complex network of life and interspecies relationships on Earth; this under the form of the revision of the current world and through the critical exercise of reinventing it from an ethical perspective⁶.

The task of the environmental educator is, therefore, of great complexity because it requires numerous articulations between different fields of knowledge, in addition to the pressing need to reflect critically with and within the temporal dynamics of contemporaneity. Among these is the emergence of new statutes in the relationship between human beings and nature, distinct from those that made man an insatiable exploiter of its resources and its own vitality. Therefore, our need here, to go beyond a divided view between human beings and nature.

Understanding the intricacies of the concept of nature is like the exercise proposed by the epistemology of complexity, ‘the nature of nature’ as Edgar Morin deepens in his method. In his approach, Morin⁷ explains to us a circular relationship between physics, biology, and anthroposociology. This relationship means that a science of the human being presupposes a science of nature, which in turn, presupposes a science of the human being. With this aim, Morin recovers the idea of *physis* from the ancient Greeks, which is closely related to the idea of nature, as etymologically there is a correspondence between the two words, of that which sprouts and that which is born.

In this sense, we find in the book ‘Nature’ by Merleau-Ponty⁸, a vigorous work that can serve as guidance for our searches about the concept of nature. He addresses the complex relationship between human beings and the natural world through a phenomenological perspective. There appears the idea that nature is not just an external object to be examined and controlled, but an experience intrinsically connected to our existence and perception. He challenges the traditional Cartesian separation between subject and object, suggesting that our understanding of the natural world is mediated by our bodily and sensory experience. The philosopher proposes a vision in which nature is a dynamic field of forces, and our interaction with it is fundamental to the formation of our consciousness and identity.

At the beginning of his work, Merleau-Ponty (2022) refers to the etymological origin of the word ‘nature’, which derives from a verb in Greek that alludes to the plant and that in the Latin form comes from *nascor*, to be born, to live. ‘Nature is what has a meaning, without that meaning having been placed by thought. It is the self-production of a meaning.’ He continues further by saying that ‘Nature is an enigmatic object, an object that is not entirely an object; it is

⁶ Amorim, Filipi; Pinheiro, Samuel; Calloni, Humberto. (2019). Uma ressonância do tempo: os desafios contemporâneos da Educação Ambiental. In: *Revista Pesquisa em Educação Ambiental*. vol. 14 n.1, p. 49, <https://doi.org/10.18675/2177-580X.vol14.n1.p48-57>.

⁷ Morin, Edgar, *op. cit.* (2016), p. 31.

⁸ Merleau-Ponty, Maurice, *op. cit.* (2022), p. 3.

not entirely in front of us. It is our soil, not what is in front, but what sustains us⁹.

The passage that says ‘Nature has a meaning, but without that meaning having been placed by thought,’ left me somewhat uncomfortable. It’s as if though in the end, is not part of nature, or that the elaboration originating from thought contaminates what is nature. In terms of the origin of the term and in its philosophical readings, perhaps this idea applies. But, in my view, it is necessary to introduce other elements into this philosophical effort, such as language, history, and cultures in the understandings of how we are made by nature and how by it we are also made.

Merleau-Ponty himself will throughout his work dissect the different readings of nature throughout history and across different projects of thought, such as conceptions from the ancient Greeks, humanist, romantic, modern proposals, and others. It is as if we had seen nature distribute itself in different orders, such as the physical, the vital, and the human. And despite this distinction, the philosopher realizes that these orders appear on the same perceptual horizon and set himself the task of integrating these orders.

In the pursuit of understanding the different natures, other authors throughout a history of philosophy, will deal with at least two visions. In the transdisciplinary approach, opened and deepened by the contributions of Basarab Nicolescu, he rehabilitates the contributions of Jakob Boheme, a German Renaissance thinker. With this dialogue, Nicolescu performs an important movement for the opening of modern science, by making an approximation between contemporary scientific thought and traditional symbolic thought, between contributions from Tradition and Science.

In ‘Science, Meaning, and Evolution,’ a 1995 work by Basarab Nicolescu, we find a reference to the writings of a cosmology explained by Boehme and at a certain moment the conception of the dual nature of Nature. A Nature, which could be demarcated with a capital N that some authors of tradition currents would put as a divine Nature and another, with a lowercase n, a creaturely nature. This dialogue between Tradition and Science will lead Nicolescu to the understanding of the levels of reality, a fundamental axiom of the constitution of Transdisciplinarity. It is as if a Nature with a capital N referred to the interaction between all levels of reality.

This is one of the fundamental ontological axioms of Transdisciplinarity: ‘There are, in Nature and society and in our knowledge of Nature and society, different levels of Reality of the Object and, correspondingly, different levels of Reality of the Subject’¹⁰. This opening of knowledge, evidenced by Transdisciplinarity, provokes a new vision of nature and reality. This movement also leads to a new Philosophy of Nature, still to be constructed and which is emerging in

⁹ Ibid, p. 4.

¹⁰ Nicolescu, Basarab. (2010). Methodology of Transdisciplinarity – Levels of Reality, Logic of the Included Middle and Complexity. *Transdisciplinary Journal of Engineering & Science*, 1. <https://doi.org/10.22545/2010/0009>.

our times as a possible ‘re-enchantment of the world through the study of the human being and the study of the Universe’¹¹.

Given this, a new vision of nature and a philosophy of nature, we find in the author Susannah Hays the 2016 work titled ‘Nature as Discourse: A Co-Evolutionary Systems Approach to Art and Environmental Design’, in which she, starting from the openness provoked by transdisciplinarity, addresses nature as discourse within the context of a co-evolutionary system that interlinks art and environmental design. This concept suggests that nature is not just a set of physical entities and biological processes, but also a discursive entity that can be understood, represented, and influenced through cultural, artistic, and design practices.

The ‘discourse’ about nature involves the way we talk about it, the values we assign to it, and how these perceptions shape our interactions and interventions in the natural world. The idea is that by recognizing nature as part of cultural discourse and by applying principles of co-evolutionary design, we can create environments that support both biodiversity and human culture in an integrated and sustainable manner. Hays (2016) argues that our relationship with nature is mediated by our understanding and representation of it, and that art and design play crucial roles in shaping these representations and, by extension, in how we design and interact with the natural world.

It is also Susannah Hays (2016) who recalls Basarab Nicolescu’s views on a transdisciplinary nature. According to her, drawing from Nicolescu’s concepts, when he explains reality and the levels of reality, he brings into the discussion about nature. With this, we have at least three distinctions of nature:

1. Objective Nature, which is connected with the natural properties of the transdisciplinary Object; objective Nature is subject to subjective objectivity. This objectivity is subject to the extent that the levels of Reality are linked to levels of perception.

2. Subjective Nature, which is connected with the natural properties of the transdisciplinary Subject; subjective Nature is subject to objective subjectivity. This subjectivity is objective to the extent that the levels of perception are connected with levels of Reality. Nevertheless, the emphasis here is on subjectivity, to the extent that the methodology employed is that of the ancient science of being, which is present in the traditions and religions of the world.

3. Trans-Nature, which is connected with a similarity in nature – a veritable communion – that exists between the transdisciplinary Object and the transdisciplinary Subject. Trans-Nature concerns the domain of the sacred and corresponds to the ‘veil’, which is the zone of non-resistance. It cannot be approached without considering the other two aspects of Nature¹².

¹¹ Nicolescu, Basarab. *op. cit.* (1995).

¹² Hays, Susannah. (2016). *Nature as Discourse: A Co-Evolutionary Systems Approach to Art and Environmental Design. Dissertation in interdisciplinary studies at University of California, Berkeley*: Springer, p. 19.

As we go further into understanding the concept of nature, from its etymological roots through various philosophical approaches to the recent formulations in Transdisciplinarity, we observe an opening to a triadic view of nature. Trans-nature is connected to both objective and subjective nature, aiming to move beyond a dichotomized view of nature. Together, these categories reflect a sophisticated framework that sees nature not just as a physical entity to be studied or managed, but as an integral part of human experience and consciousness, interwoven with our perceptual, cognitive, and spiritual lives. This framework could significantly enrich our approaches to environmental issues, education, and policy by promoting a more comprehensive, integrated understanding of nature that respects both its physical and metaphysical dimensions.

4. Transcultural movements for understanding nature

Taking this perspective of the need to open up the concept of nature through language, cultures, history, and philosophy, as discussed in the previous section, it seems that transculturality is an important key that needs to be preserved for the realization of teaching and learning about and with nature that takes into account the diversity of worldviews, as well as for its re-enchantment.

The transcultural designate the opening of all cultures to that which cuts through them and transcends them¹³. In this sense, a transdisciplinary chair like the one we are striving to deepen in these discussions should open up to transcultural dialogue about how various cultures, traditions, arts, and symbolic thoughts have interpreted nature and how they relate to it. As Michel Cazenave¹⁴ (2011) says, it is precisely beyond the multicultural that the notion of the transcultural presents itself, in the way that men through all epiphanies in search of the question of why we are on this earth.

This assertion will correspond significantly with the contemporary debate on a search for the decoloniality of knowledge, in the sense that it is not just the knowledge of European hegemony of a certain understanding of nature that should be studied in reference and research centers. Furthermore, this knowledge, founded on a divided vision of human and nature, has corroborated a perspective of exploitation of natural resources. The fragmentary vision to some extent has strengthened and still strengthens the discourse that man is given the right to deplete the vitality of ecosystems.

The first of the cultural dialogues about a human-nature relationship that transdisciplinarity incites us to reflect on is the non-hegemony of the West in this respect. Indeed, beyond the illusions of geographical separations pertaining to the

¹³ Nicolescu, Basarab. (2014). *From Modernity to Cosmodernity: Science, Culture, and Spirituality*. State University of New York Press. Kindle editions.

¹⁴ Cazenave, Michel. (2011). La place et la fonction du transculturel dans le monde contemporaine. In: Nicolescu, Basarab; Stavinschi, Magda. *Transdisciplinary studies: Science, Spirituality, Society*. Bucharest: Curtea Veche.

nomenclature of West and East, these separations also operate political, cultural, and paradigmatic divisions between these parts, such as the separation of body and mind, inner and outer, individualism and collectivism, and many others.

The dialogue between East and West, as studied in the dissertation on Vedanta philosophy and its implications for environmental education¹⁵, unveils profound questions about the relationship of human beings with nature. This cultural and philosophical exchange allows for a reevaluation of traditional Western perspectives, often centered on dualism and the exploitation of nature, contrasting them with Eastern views that emphasize intrinsic harmony and interdependence between humans and the environment. This meeting of ideas proposes a critical reflection on the need for a new paradigm in environmental education, one that incorporates silences of self-observation as elements in the search for a deeper and more respectful connection with the natural world.

By adopting a transdisciplinary approach that intertwines concepts of being and silence from Vedanta philosophy and Yoga, that work of Pinheiro (2017) suggested that understanding nature is not limited to external interaction but involves an introspective dive that recognizes nature as an integral part of one's own being. This challenges the predominant Western view of a separation between subject and object, proposing instead a non-dualistic view that dissolves the barriers between the self and the other. This expanded understanding, mediated by environmental education, has the potential to foster an ethic of solidarity and planetary reintegration, recognizing all forms of life as extensions of our own existence, thus redefining our responsibilities and interactions with the surrounding environment.

We risk repeating romanticized conceptions of nature when seeking an idealization of a mystical and distant cultural East, which would extend to the East as an epistemological stance of what is not based on a fragmented orientation of nature. The goal is not to repeat epistemological and paradigmatic cloisters of the past but to propose new interactions, understandings, and discourses on nature and the non-duality relationship with nature from the transcultural dialogue between East and West.

This dialogue of what is transcultural does not need to travel far territorially but can begin from our primal places, from the primeval local knowledge, from the indigenous communities whose knowledge has been underestimated by conventional history. These are the knowledges of enslaved peoples, of indigenous peoples, of diverse peasant communities that have resisted and safeguarded ancestral knowledge about their ways of life with relations to and with nature that transcend the utilitarianism of profit at any cost.

In this context, we recall the contributions of Ailton Krenak (2020), a Brazilian environmentalist and indigenous leader who speaks from a perspective

¹⁵ Pinheiro, Samuel Lopes. (2017). *O Silêncio e o Ser na Filosofia Vedanta: um diálogo Oriente-Occidente para pensar a relação humano-natureza em Educação Ambiental*. Rio Grande -RS: dissertação de mestrado PPGEA/ FURG.

that life is not for the utility of the market and capital, but that life is for enjoyment. The wonder of existence should be the experience of enjoying life. For him, everything is nature, the entire cosmos is nature, and his worldview does not conceive of anything that is not nature.

What they call nature should be our body's interaction with its surroundings, where we know where what we eat comes from and where the air we breathe out goes. Beyond the idea of 'I am nature', the awareness of being alive should run through us so that we are able to feel that the river, the forest, the wind, the clouds are our mirror in life¹⁶.

Another contribution in this regard comes from Célia Xacriabá, an indigenous female leader in Brazil who believes that 'to be human, one must learn to be nature' (2022). For her, it is through diversity that the country's culture is expressed.

When we take care of the territory and the land, we are also taking care of the sky. Living on the earth is interconnected with what happens in this other place: the sky. I say that the sky, for us indigenous people, is like a huge headdress covering the head of humanity. And how do we also take care of this giant headdress that guides our thoughts, that directs our thinking?¹⁷

A metaphor of the connection between earth and sky, between the internal and external. It also prompts a mental ecology, of caring for the thoughts that ultimately also manifest a relationship with the entire earth. All these visions or cosmovisions elucidated by Krenak earlier and Xacriabá above are an act of reverence for transcultural dialogue that which crosses and transcends cultures.

This does not mean that from now on we should adopt the worldviews of native peoples or diverse traditions as our own. Michel Cazenave has an interesting position in this regard that interests us in this discussion, which I would call a position of epistemological humility, in the sense of recognizing other relationships with nature. Michel Cazenave (2011) says that he can intellectually conceive of certain inner realities, a certain notion of the sacred that appears in various cultures, but yet they have not formed part of his lived experience. The order of intellectual explanation and experience are not the same, which is why there is a need to respect the many experiences and to be open to transcultural dialog. This is because experience can corroborate the enrichment of the intellectual elaboration of concepts, and the exercise of dialogic reflection can, in turn, also enrich us with the experience of transcultural dialogue.

The advocacy for cultural diversity is less about insisting on an idealized version of what people and communities should be, and more about appreciating and deepening our understanding of their true essence and character. Through Agustí Nicolau Coll¹⁸ collaborations on this theme in his book of 2002, it was

¹⁶ Krenak, Ailton. (2020). *A vida não é útil*. São Paulo: Companhia das Letras.

¹⁷ Xacriabá, Célia. (2022). Só sabe ser humano quem sabe ser natureza. In: De Lima, Martha Batista (organizer). *Oboré: quando a terra fala*. São Paulo: Tumiak Produções, Instituto Arapoty, p. 18.

¹⁸ Coll, Agustí Nicolau. (2002). *Propostas para uma diversidade cultural intercultural na era da*

acknowledged that this form of diversity highlights the reality that no single paradigm is capable of fully explaining the entirety of human experience; each culture is a unique expression of humanity's vast and varied journey through space and time. This same idea is also mentioned with other words in the chart of Transdisciplinarity in article 10: 'No single culture is privileged over any other culture. The transdisciplinary approach is inherently transcultural.'

5. Towards a Pedagogical Transdisciplinary Paradigm

In the first part of the text, we have delved into the concept of nature across various fields of knowledge, opening up this term to transdisciplinary understandings. We then explored transculturality as a key to mediating between diverse views of nature. Continuing with the examples we have discussed, we now open this section on the need for a transdisciplinary pedagogy. That is because education is a privileged space for strengthening the transdisciplinary approach that we have been working so far.

The endeavor to implement educational practices with complex orientations can be understood as an effort towards developing a humanizing and anti-hegemonic education. In this context, hegemony is not defined by the majority but by the prevalence of a logic that emphasizes efficiency at all costs. Thus, as mentioned in Pinheiro¹⁹ (2022), a complex educational approach challenges the extreme speed imposed by the market, prioritizing the integral development of individuals, which requires a significant investment in quality time, maturation, constancy, and rhythm.

In consonance with what is said by Pinheiro (2022), the educational practice in a complex and transdisciplinary context often includes valuing both rationality and affectivity, and considers both quantitative and qualitative dimensions. This requires an ongoing effort to explore the multidimensionality of the human being. Such a challenge proposes a critical revision of the prevailing educational conventions, which are typically generic and instrumental in formal learning environments, focused on technical training aimed at meeting market demands, neglecting the extensive potential for realization and autonomy of individuals.

When considering the transdisciplinary understanding of the concept of nature, seen as a trans-nature that spans across various levels of reality for both the subject and the object, there arises a need to reinforce a transdisciplinary pedagogy able in doing so. This pedagogy would promote a transcultural dialogue about and with nature to foster such integration. It is not accurate to claim that a single pedagogical approach can achieve this aim. However, there exist pedagogies characterized by their complexity that embrace transdisciplinary propositions. These methodologies facilitate the process of learning and teaching as a form of

globalização. São Paulo: Instituto Pólis.

¹⁹ Pinheiro, Samuel Lopes. (2022). *Caminhos transdisciplinares para um autoconhecimento emergente em Educação Ambiental*. Rio Grande-RS: tese de doutorado PPGEA/FURG.

collective discovery, promoting horizontal and reciprocal interactions between teachers and students in their engagements with and about nature.

The approaches of ecoformation²⁰, stands out as an example of transdisciplinary pedagogical practices and as a heuristic potential for the development of these aspects of interconnection among the individuals with oneself, with others, and with their environments. The work of ecoformation is taken as an example that extends into the practice of environmental education, characterized by a deeply ingrained transcultural dialogue. This is evident in accounts of such practices where narratives from Native People from North America contribute to the efforts of educating oneself with nature. One of the prominent objectives in the ateliers of ecoformation is the opportunity to ‘explore the transition from a culturally ethnocentric view to a transcultural openness, in anticipation of the emergence of a terrestrial identity’²¹.

The ecoformative approach also extends as a transdisciplinary pedagogical example to many other practices that aim to learn from ancestral knowledge, various spiritualities, indigenous peoples, and worldviews that are detached from a utilitarian view of nature or a human-nature division. In previous studies on Yoga and Vedanta Philosophy, ecoformation also served as a formative influence on pedagogical practices about concepts as self-knowledge and self-formation. In which extends the discussion of the knowledge of oneself²², that simultaneously encompasses knowledge with others and with the environment.

The authors Pinheiro, Pasquier and Regnier²³ address nature as an essential but frequently forgotten ‘third part’ in human formation. Traditionally, education and personal development have focused primarily on two domains: the psychological/individual and the social/societal. Nature, as the third domain, offers a crucial dimension for the comprehensive development of the other two, yet it is often neglected in traditional educational approaches.

To effectively incorporate nature into human formation, the authors propose pedagogical paths that include transdisciplinary teaching methods and direct experiences with the environment. They emphasize the importance of educational programs that take students out of traditional classrooms and into direct contact with natural environments. This contact is not just for the scientific study of ecology but also for developing an emotional and ethical relationship with the natural world.

²⁰ Galvani, Pascal. (2020). *Autoformation et connaissance de soi: un méthode de recherche-formation expérientielle*. Lyon : Chronique sociale.

²¹ Galvani, Pascal. (2023) Trois pistes d’exploration de l’écoformation : retour sur un trajet de recherche. *Éducation relative à l’environnement* [Online], Volume 18-1.

²² Pinheiro, Samuel Lopes, *op. cit.* (2022), p. 15.

²³ Pinheiro, Samuel Lopes ; Pasquier, Florent ; Régnier, Jean-Claude. (2023). La Nature, « troisième part » trop souvent oubliée dans la construction d’un être humain. *Biennale Internationale de l’Éducation, de la Formation et des Pratiques Professionnelles* « Se construire avec et dans le monde : part d’autrui, part de soi », Association Biennale Internationale de l’Éducation, de la Formation et des Pratiques Professionnelles ; Institut Catholique de Paris — ICP; UNESCO.

These pedagogical approaches not only expand academic and scientific understanding of nature but also promote awareness of sustainability, interdependence, and the need to act responsibly and ethically towards the environment. This is seen as essential not only for the health and well-being of individuals but also for the future of the planet.

6. Conclusion

This article engaged in investigating the interface between environmental education and transdisciplinary and transcultural approaches, based on the research question that asks how the concept of nature is interpreted and integrated by transdisciplinary thinkers. The analysis delved into a comprehensive bibliographic review, complemented by reflections derived from educational practices anchored in the philosophies of Yoga and Vedanta, to challenge reductionist perspectives of nature and promote a pedagogical paradigm that values cultural diversity in the educational process about and with the natural environment.

The discourse proceeded with a critique of the limitations of conventional disciplinary approaches, proposing a holistic and integrative view that transcends disciplinary and cultural boundaries for a more robust understanding of nature. The article emphasized the need for a dialogue between scientific knowledge and traditional wisdoms, demonstrating how this synthesis can enrich our understanding of contemporary environmental dilemmas and stimulate new human-nature relationships.

The expected outcomes of this study include the instigation of a paradigmatic change in environmental education towards a more inclusive practice, which not only integrates various bodies of theoretical knowledge but also values practical and experiential engagement with the environment. This change is seen as crucial for cultivating deep environmental awareness and the formation of individuals open to addressing socio-ecological crises.

However, the research faces significant barriers, including the complexity of implementing such educational strategies in the daily practices of education that genuinely amalgamate transdisciplinary and transcultural knowledge. Obstacles such as resistance to the openness of knowledge and even the training of educators to facilitate these complex dialogues represent persistent challenges. Additionally, the practical applicability of these pedagogical paradigms faces limitations inherent in the dynamics of educational systems that often prioritize quantitative approaches and immediate results at the expense of more reflective and integrative educational processes.

Despite these limitations, the study provides valuable directions for future research and pedagogical implementations. It encourages the advancement of research in transdisciplinary and transcultural environmental education, aiming to overcome the identified challenges and promote an education that respects and integrates various perspectives on nature. Such an approach will not only

enrich the educational experience but also strengthen ethical interaction in human-nature relationships.

Acknowledgment and conflicts of interest

The author declare that he have no financial support or conflicts of interest with respect to the research, authorship, and/or publication of this article. Any errors or omissions are his own.

References

1. Amorim, Filipi; Pinheiro, Samuel; Calloni, Humberto. (2019). Uma ressonância do tempo: os desafios contemporâneos da Educação Ambiental. In: *Revista Pesquisa em Educação Ambiental*. V. 14 n.1, <https://doi.org/10.18675/2177-580X.vol14.n1.p48-57>.
2. Cazenave, Michel. (2011). La place et la fonction du transculturel dans le monde contemporaine. In: Nicolescu, Basarab ; Stavinschi, Magda. *Transdisciplinary studies: Science, Spirituality, Society*. Bucharest: Curtea Veche.
3. Coll, Agustí Nicolau. (2002). *Propostas para uma diversidade cultural intercultural na era da globalização*. São Paulo: Instituto Pólis.
4. Galvani, Pascal. (2020). *Autoformation et connaissance de soi : un méthode de recherche-formation expérientielle*. Lyon: Chronique sociale.
5. Galvani, Pascal. (2023) Trois pistes d'exploration de l'écoformation : retour sur un trajet de recherche. *Éducation relative à l'environnement* [Online], Volume 18-1.
6. Hays, Susannah. (2016). Nature as Discourse: A Co-Evolutionary Systems Approach to Art and Environmental Design. *Dissertation in interdisciplinary studies at University of California*, Berkeley: Springer.
7. Krenak, Ailton. (2020). A vida não é útil. São Paulo: Companhia das Letras.
8. Martinez, Juan María; Lucía, Ángel. (1995). Atlas do extraordinário. *Prodígios da natureza*. Volume 1. Madrid: Ediciones del Prado.
9. Merleau-Ponty, Maurice. (2022). *A natureza: curso do Collège de France*. São Paulo: editora WMF.
10. Morin, Edgar. (2016). *O método 1: a natureza da natureza*. Porto Alegre: Sulina.
11. Nicolescu, Basarab. (1995). *Ciência, sentido e evolução: a cosmologia de Jacob Boheme*. São Paulo: Attar.
12. Nicolescu, Basarab. (2010). Methodology of Transdisciplinarity – Levels of Reality, Logic of the Included Middle and Complexity. *Transdisciplinary Journal of Engineering & Science*, 1. <https://doi.org/10.22545/2010/0009>
13. Nicolescu, Basarab. (2014). *From Modernity to Cosmodernity: Science, Culture, and Spirituality*. State University of New York Press. Kindle editions.
14. Pinheiro, Samuel Lopes ; Pasquier, Florent ; Régnier, Jean-Claude. (2023). La Nature, « troisième part » trop souvent oubliée dans la construction d'un être humain. *Biennale Internationale de l'Éducation, de la Formation et des Pratiques Professionnelles «Se construire avec et dans le monde: part d'autrui, part de soi»*, Association Biennale Internationale de l'Éducation, de la Formation et des Pratiques Professionnelles; Institut Catholique de Paris — ICP; UNESCO.
15. Pinheiro, Samuel Lopes. (2017). *O Silêncio e o Ser na Filosofia Vedanta: um*

- diálogo Oriente-Occidente para pensar a relação humano-natureza em Educação Ambiental*. Rio Grande-RS: dissertação de mestrado PPGEA/ FURG.
16. Pinheiro, Samuel Lopes. (2022). *Caminhos transdisciplinares para um autocohecimento emergente em Educação Ambiental*. Rio Grande-RS: tese de doutorado PPGEA/FURG.
 17. Xacriabá, Célia. (2022). Só sabe ser humano quem sabe ser natureza. In: De Lima, Martha Batista (organizer). *Oboré: quando a terra fala*. São Paulo: Tumiak Produções, Instituto Arapoty.