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Reinventing Environmental Education: Beyond Anthropocentrism and the Sensory Connection with Nature[1]

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Abstract: This study proposes a critical reflection on conventional research and knowledge production methodologies, highlighting their connection to corporate interests that prioritize productivity over environmental sustainability. By questioning the predominant anthropocentric model, it advocates for a systemic approach that acknowledges the interdependence between humans and other components of the biosphere. The research underscores the importance of sensory and affective dimensions in environmental education, promoting experiences that cultivate lasting bonds with nature and foster conservation-oriented attitudes. Additionally, it emphasizes the valorization of traditional and local knowledge, alongside the reinforcement of environmental justice through interdisciplinary initiatives. The integration of holistic approaches in environmental education not only enhances emotional well-being but also stimulates engagement and fosters a transformative relationship between society and nature. In the face of institutional and structural challenges, this study argues that investing in less anthropocentric environmental education is crucial for cultivating more conscientious citizens committed to planetary sustainability.
Keywords: Environmental education. Sustainability. Anthropocentrism. Environmental justice. Traditional knowledge.

Reinventando a Educação Ambiental: Além do Antropocentrismo e a Conexão Sensorial com a Natureza

Resumo: Este estudo propõe uma reflexão crítica sobre as metodologias convencionais de pesquisa e produção de conhecimento, destacando sua vinculação com interesses corporativos que priorizam a produtividade em detrimento da sustentabilidade ambiental. Ao questionar o modelo antropocêntrico predominante, sugere-se a adoção de uma abordagem sistêmica que reconheça a interdependência entre os seres humanos e os demais componentes da biosfera. A pesquisa enfatiza a importância das dimensões sensoriais e afetivas na educação ambiental, promovendo experiências que favorecem vínculos duradouros com a natureza e atitudes voltadas à conservação. Além disso, ressalta-se a valorização dos saberes tradicionais e locais, bem como o fortalecimento da justiça ambiental por meio de projetos

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interdisciplinares. A integração de abordagens holísticas na educação ambiental não apenas favorece o bem-estar emocional, mas também estimula o engajamento e a transformação da relação sociedade-natureza. Diante dos desafios institucionais e estruturais, argumenta-se que investir em uma educação ambiental menos antropocêntrica é essencial para fomentar cidadãos mais conscientes e comprometidos com a sustentabilidade planetária.
Palavras-chave: Educação ambiental. Sustentabilidade. Antropocentrismo. Justiça ambiental. Saberes tradicionais.

Reinventar la educación ambiental: más allá del antropocentrismo y la conexión sensorial con la naturaleza

Resumen: Este estudio propone una reflexión crítica sobre las metodologías convencionales de investigación y producción de conocimiento, destacando sus vínculos con los intereses corporativos que priorizan la productividad sobre la sostenibilidad ambiental. Al cuestionar el modelo antropocéntrico predominante, sugiere la adopción de un enfoque sistémico que reconozca la interdependencia entre los seres humanos y los demás componentes de la biosfera. La investigación subraya la importancia de las dimensiones sensorial y afectiva en la educación ambiental, promoviendo experiencias que fomenten vínculos duraderos con la naturaleza y actitudes hacia la conservación. También hace hincapié en la valoración de los conocimientos tradicionales y locales y en el fortalecimiento de la justicia ambiental mediante proyectos interdisciplinarios. Integrar enfoques holísticos en la educación ambiental no sólo favorece el bienestar emocional, sino que fomenta el compromiso y la transformación de la relación sociedad-naturaleza. Frente a los retos institucionales y estructurales, se argumenta que invertir en una educación ambiental menos antropocéntrica es esencial para fomentar ciudadanos más conscientes y comprometidos con la sostenibilidad planetaria.
Palabras clave: Educación ambiental. Sostenibilidad. Antropocentrismo. Justicia ambiental. Conocimiento tradicional.

INTRODUCTION

The urgent need to rethink environmental education in the light of a less anthropocentric perspective is becoming more and more pressing, especially given the global context of environmental degradation and the imminent threats affecting ecosystems that are vital for maintaining life on the planet. The United Nations Climate Change Conference (COP30) in Belém in 2025 marks a significant moment for the discussion of environmental issues, especially with regard to the preservation of the Amazon and other ecophysiognomies threatened by anthropogenic advancement and management (Fachin; Luiz; Sato, 2024; Souza Pinto; Barbosa, 2022). This global event highlights the need for in-depth reflection on human development practices and their consequences for ecosystems and the populations that depend on these environments for their survival.

The Amazon, considered the lungs of the planet, is facing unprecedented challenges as a result of extractive activities, illegal deforestation and the intensification of large-scale agriculture and livestock farming (Souza Pinto; Barbosa, 2022). Other

ecophysiognomies, such as savannahs, wetlands and coastal zones, are also at risk from the same logic of unbridled exploitation. In this scenario, environmental education can no longer be restricted to the simple transmission of rational knowledge or the promotion of an environmental awareness that is dissociated from everyday practices (Gutiérrez; Prado, 1999; Milanés; Dutra, 2024; Queiroz; Sousa Bento; Batista, 2024). A more holistic and inclusive approach is essential, one that takes into account the sensory and affective dimensions of learning, capable of establishing a deeper connection between individuals and the environment.

This essay proposes a critical reflection on conventional research and knowledge production methodologies, often funded by multinationals and large corporations that prioritize increased productivity over environmental preservation. Although the quest for greater productivity is undoubtedly relevant (Fachin; Luiz; Sato, 2024; Gomes *et al*., 2024), it is essential to recognize that sustainability and ecological balance must be the priority in any development strategy. The anthropocentric model, which places human beings at the center of decisions and at the top of the hierarchy of values, has demonstrated its limitations in promoting a more balanced coexistence between humanity and nature (Souza Pinto; Barbosa, 2021).

This study proposes overcoming the predominant anthropocentric perspective, adopting a systemic approach that recognizes the interdependence between human beings and the other components of the biosphere. In addition to an environmental education based exclusively on rationality and intellectual logic, the aim is to emphasize the importance of the sensory and affective dimensions in the formation of a deeper and more transformative environmental awareness. Sensory and emotional experiences, mediated by direct interaction with the environment, encourage the construction of meaningful and lasting bonds with nature, which are essential for the development of attitudes based on respect, conservation and sustainability. Thus, this research not only questions reductionist approaches to environmental education, but proposes alternatives that integrate ecological, social and cultural aspects, contributing to the formation of individuals committed to environmental preservation. By exploring the sensory and affective dimension in the educational process, the aim is to consolidate a model in which sustainability is incorporated as an essential value for maintaining life on the planet.

Background to Environmental Education

Environmental education has its roots in the growing concern about the negative impacts of human action on the environment, especially since the 1970s (Gutiérrez; Prado, 1999; Milanés; Dutra, 2024). During this period, environmental education came to be seen as a crucial tool for raising public awareness and changing behavior in relation to the use of natural resources (Iared *et al*., 2021). Initially, it was strongly influenced by an anthropocentric perspective, in which human beings and their needs were at the center of discussions, promoting the idea that environmental protection should be sought primarily to guarantee the quality of human life.

This anthropocentric view is criticized by several authors, such as Payne (2018, 2019), who points out the dangers of an approach that sees nature only as a resource to be exploited to meet human demands, neglecting ecological interconnections and the needs of other living beings. Payne (2018) proposes an ecosomaesthetic education that prioritizes the sensitive, affective, and perceptive dimensions of human experience in continuity with the more-than-human world, advocating for a less anthropocentric or more ecocentric disposition in inquiry. They emphasize overcoming strictly rational teaching by investing in lived experiences as a way to establish bonds and knowledge.

Furthermore, the concept of sustainability, initially proposed as a way of guaranteeing long-term environmental preservation, has been progressively emptied of its real meaning (Ferreira; Pires; Nápolis, 2021). In many cases, the term has become a marketing mechanism, used by companies to attract consumers, without any real concern for practices that effectively promote social and environmental justice. This superficial and commercial use of sustainability diminishes the depth of reflection needed on ecological and social systems, transforming an urgent issue into a tool for promoting products and services that often continue to contribute to environmental degradation (Gomes *et al*., 2024; Sauvé, 2005). It is therefore imperative to rethink environmental education in the light of a more inclusive and less anthropocentric approach, recognizing the interdependence of all living beings and the urgency of truly sustainable practices.

The traditional research model, widely consolidated in academia, privileges the primacy of technical and theoretical knowledge to the detriment of the sensory, emotional and practical experiences of the subjects involved. This paradigm, strongly influenced by positivism and Cartesian thinking, is structured on the separation between subject and

object, giving almost exclusive legitimacy to formal scientific knowledge and relegating other forms of knowledge to the background, such as those transmitted orally or built from daily interaction with the environment. This reductionist approach compromises a more holistic understanding of environmental and social issues, as it ignores the complexity of ecological systems and the socio-cultural relationships that structure territories (Morin, 2007).

In the context of environmental and educational research, this disconnect between theory and practice becomes particularly problematic, since ecological challenges are dynamic, contextual and deeply interconnected with the communities that live in these territories (Sauvé, 2005). Falcón, Erdmann; Meirelles (2006) and Payne (2019) point out that the prioritization of quantitative methods, the search for controllable and replicable data and the exclusion of subjective dimensions of knowledge generate fragmented approaches, incapable of capturing the complexity of interactions between humans and the environment. In addition, this model often serves the interests of multinationals and large corporations that fund research aimed at increasing economic productivity and the exploitation of natural resources, which compromises the construction of solutions aimed at ecological and social sustainability.

Another critical aspect of this hegemony of technical-scientific knowledge is the direct risk to historically marginalized groups, such as indigenous, *quilombola*, riverine and peasant communities. These populations develop their ways of life and environmental management practices based on continuous observation, practical experimentation and the intergenerational transmission of knowledge, creating sustainable strategies for interacting with ecosystems. However, Western science often devalues and delegitimizes this knowledge, imposing development models that disregard or even threaten traditional forms of land occupation and use. This process not only makes the epistemological diversity present in these communities invisible, but also perpetuates structural inequalities that date back to colonialism. As Sousa Santos (2007) points out, modern science often operates as an instrument of coloniality, imposing a dominant knowledge and marginalizing those who do not fit into its standardized methodologies. This has direct consequences for the formulation of environmental policies and research projects which, by disregarding local knowledge, fail to meet the real needs of the communities involved, perpetuating a cycle of exclusion and exploitation.

To overcome these limitations, it is essential to adopt transdisciplinary and participatory approaches that value the direct involvement of communities in the construction of knowledge. Methodologies such as Action Research and Participatory Research (Felcher; Ferreira; Folmer, 2017; Peruzzo, 2017), as well as university extension projects, demonstrate that integrating academic knowledge and local practices can generate more effective and socially just solutions. These research models, by recognizing the importance of territorial experiences, sensory and affective dimensions and intercultural dialogue, enable the subjects involved to be co-authors of scientific production, transforming research into an instrument of emancipation and socio-environmental justice, rather than a mechanism of domination and exclusion.

Thus, overcoming the traditional approach to research requires an epistemological repositioning that recognizes the plurality of knowledge and the relevance of more inclusive methodologies, capable of integrating the subjective, emotional and territorial dimensions of environmental learning (Kolb, 1984). This movement does not mean the rejection of science, but rather the construction of a more equitable dialog between different forms of knowledge, ensuring that scientific production effectively contributes to a more sustainable future and the promotion of socio-environmental equity.

BEYOND ANTHROPOCENTRISM

Environmental education has historically been based on an anthropocentric perspective, centered on human needs and interests in relation to the environment (Fachin; Luiz; Sato, 2024; Sauvé, 2005). This approach, although it has promoted awareness of ecological issues, often neglects the intrinsic interconnection between all living beings and ecosystems. Payne (2019) criticizes this overly human-centric view, arguing that it limits understanding of complex ecological relationships and perpetuates practices that can be detrimental to environmental balance.

In addition, the term “sustainability” has suffered a significant loss of meaning, often being co-opted as a marketing tool to attract consumers (Oliveira; Claro; Amâncio, 2008; Ferreira; Pires; Nápolis, 2021). This trivialization compromises the essence of the concept, diverting it from its original purpose of promoting a genuine balance between human development and environmental preservation, and turning it into a mere commercial slogan devoid of concrete actions.

Faced with this scenario, it is imperative to rethink environmental education in order to transcend anthropocentrism. This implies a critical analysis of current teaching practices and the incorporation of sensory, emotional and practical dimensions into environmental learning. By involving the senses and emotions, learners can develop a deeper and more empathetic connection with nature, recognizing themselves as an integral part of ecosystems and not as separate or dominant entities.

Concrete examples of this approach can be seen in extension projects developed by Brazilian universities. At the Federal University of Lavras (UFLA), the "Environmental Education and Prevention of Infectious and Parasitic Diseases" project stands out, which promotes interactive activities in public schools in Lavras, emphasizing the relationship between environmental preservation and disease prevention (UFLA, 2023). This project not only imparts technical knowledge, but also engages students in practical experiences that strengthen their connection with the natural environment.

At the Federal University of the Recôncavo Baiano (UFRB), university extension is conceived as an educational, artistic, cultural and scientific process that establishes a direct relationship with society (Diorio, 2024; Pereira *et al*., 2024). Extension activities aim to promote the overcoming of social inequalities and sustainable regional development by integrating academic knowledge with traditional knowledge and community practices.

By integrating these sensory and affective dimensions into pedagogical practices, environmental education can foster a more holistic and inclusive understanding of the environment. This approach not only enriches the educational process, but also empowers individuals to adopt more responsible and sustainable behaviors, promoting harmonious coexistence with all forms of life on the planet.

Integrating popular, indigenous and local knowledge into the educational process is essential for building a truly inclusive and plural environmental education. Traditional knowledge, accumulated by communities over generations, contains valuable lessons about sustainable land management, respect for natural cycles and strategies for adapting to environmental changes. However, the hegemony of Western scientific knowledge often marginalizes this knowledge, treating it as secondary or unscientific. This reductionism limits the understanding of the interactions between

human beings and the environment and impoverishes the repertoire of solutions to contemporary ecological challenges.

Environmental education must commit itself to valuing the voices and experiences of diverse cultures and communities, recognizing that Western science is not the only valid form of knowledge (Sauvé, 2005). Authors such as Leff (2001) defend the importance of an ecology of knowledge, in which different forms of knowledge dialog and complement each other, broadening socio-environmental understanding. In this sense, environmental education cannot just be a space for transmitting technical information, but must incorporate narratives, oral histories and local practices that reflect ancestral relationships with nature.

The inclusion of traditional knowledge should not be restricted to curriculum content, but should also be a fundamental criterion in the selection of teachers and researchers (Queiroz; Sousa Bento; Batista, 2024). Teachers and extension workers who have experience outside the classroom, especially in traditional communities and community-based projects, bring with them a repertoire that enriches teaching practice. In Brazil, university extension is recognized as one of the pillars of higher education, but this type of experience is still undervalued in selection processes for teachers, which often prioritize only formal academic production.

Prioritizing extension practice in the selection criteria for professors and researchers would reinforce institutions' commitment to training that is more connected to socio-environmental reality. It would also strengthen the interaction between university and society, promoting the exchange of knowledge in a dialogical and non-hierarchical way. The inclusion of teachers with experience in local communities would allow this knowledge to become more accessible and legitimized within the academic environment, reducing the barrier between technical-scientific knowledge and popular practices (Queiroz; Sousa Bento; Batista, 2024).

In this way, rethinking environmental education means not only reformulating content and methodologies, but also transforming the institutional structures that determine who can teach and what is considered valid knowledge. Incorporating indigenous, *quilombola*, agroecological and other traditional knowledge not only diversifies and strengthens environmental education, but also promotes epistemological justice, recognizing the historical contribution of different peoples in building a sustainable future (Leff, 2001; Milanés; Dutra, 2024).

The need for a deep reconnection with nature has been increasingly debated in the field of environmental education, especially in the face of the growing alienation of human beings from the ecosystems that sustain life. Modernity and the advance of urbanized societies have led to a distancing from direct experiences with the natural environment, replacing concrete experiences with the consumption of abstract information about the environment. This distancing has a significant impact on the way individuals perceive and interact with nature, often reducing it to a resource to be exploited or a setting to be contemplated, without genuine sensory or emotional involvement. In order to reverse this situation, it is essential that pedagogical practices adopt approaches that restore people's sensory and emotional relationship with natural environments (Leff, 2001).

Traditional environmental education tends to emphasize cognitive and rational aspects, presenting theoretical concepts about ecology, biodiversity and sustainability. Although technical knowledge is fundamental, its effectiveness is limited when it is not associated with a lived experience. Sensory and emotional approaches can play a crucial role in this process, allowing individuals to experience nature directly, awakening empathy, belonging and ecological responsibility. According to Payne (2019), environmental education needs to transcend academic discourse and incorporate methodologies that involve the senses, such as observation, touch, smell, listening and interaction with natural elements.

In Minas Gerais, various initiatives have demonstrated the potential of sensory and emotional practices in environmental education. Projects developed in rural and traditional communities use immersion in nature as a teaching tool. A relevant example is the “Agroecological Fair” project, promoted by the Federal University of Lavras (UFLA), which seeks to connect students, family farmers and local communities through agroecological practices in community gardens (Pereira, Guevara, Vasconcelos, 2023). Participants not only learn about soil, water and biodiversity in a theoretical way, but also work directly with the land, feeling its texture, observing its transformations and understanding ecological processes through direct experience.

Another significant example is the work carried out by the Zona da Mata Alternative Technologies Centre (CTA-ZM), an organization that works together with the Federal University of Viçosa (UFV) and peasant communities to promote agroecology (Charão-Marques; Schmitt; Oliveira, 2017; CTA, 2025). The

methodologies employed include experiential workshops, where farmers and students learn sustainable cultivation techniques through direct contact with the land, the exchange of knowledge between generations and practical experimentation. This type of approach reinforces participants' emotional involvement, strengthening their bond with nature and promoting a more respectful and integrated relationship with ecosystems.

Reconnecting with nature can also be stimulated through playful and artistic activities, as is the case with the "Environmental Education and Art" project, carried out in public schools in the Belo Horizonte Metropolitan Region. This project involves activities such as nature walks, painting with natural pigments, making musical instruments from recyclable materials and telling stories about the local fauna and flora. These practices allow students to develop a more sensitive and affective perception of the environment, making learning more meaningful and memorable (Hermann, 2018; Iared *et al.*, 2021; Iared *et al.*, 2022).

Therefore, a deep reconnection with nature is an essential aspect of contemporary environmental education and must be worked on in a sensory and emotional way in order to generate more lasting impacts (Louv, 2015). Projects developed in communities in Minas Gerais show how direct experience with the environment strengthens ecological awareness and promotes sustainable practices. Integrating these approaches into formal and non-formal education can contribute to a more holistic education that is sensitive to the needs of the planet, reviving the ancestral relationship between human beings and nature.

Sensory connection with nature

Children tend to learn by observation, taking adults as a reference and naturally assimilating the examples present in their environment, whether positive or negative. Studies in developmental psychology show that socialization occurs largely through imitation and the internalization of behaviours observed in everyday life. In this sense, children who grow up in environments marked by violence or environmental degradation often reproduce interaction patterns based on these experiences. However, by integrating sensory approaches into environmental teaching, it is possible to reframe this relationship with space, stimulating a more empathetic and conscious perception of nature and non-human beings (Iared *et al*., 2021). Exposure to multi-sensory experiences and models of respectful interaction with the environment can promote

changes in the way individuals perceive and relate to their surroundings, contributing to a more inclusive and transformative environmental education (Leff, 2001).

Integrating the senses into environmental education represents an innovative and essential approach to making learning more immersive, meaningful and engaging. The senses play a fundamental role in the construction of knowledge and perception of the world around us. When used intentionally in the educational process, they can broaden understanding of the environment, fostering a deeper connection with nature and a more sensitive view of non-human beings.

Sight is one of the senses most exploited in traditional education, but its use can go beyond simply reading texts or looking at images. Activities such as nature walks, landscape analysis, recognizing plant and animal species and observing natural cycles can stimulate a broader and more critical perception of the environment. Children growing up in urban environments often have little exposure to natural spaces, which reduces their ability to understand ecological interactions. By offering visual experiences that highlight the complexity and beauty of nature (Morin, 2007), environmental education can arouse curiosity and appreciation of ecosystems.

Hearing can also be a powerful resource for bringing people closer to nature. Sounds of the forest, wind, rain and animals carry information about the environment and can be used in educational activities to stimulate attentive listening and perception of biodiversity. In addition, songs, stories and accounts from traditional communities about their relationship with the land contribute to a more sensitive and culturally-rooted environmental education. This type of experience can help to deconstruct the mechanistic view of nature, reinforcing its living and interconnected dimension.

Touch is an essential sense for experiential learning, as it allows direct contact with natural elements. The simple act of touching the earth, feeling the texture of leaves, water or tree bark can generate a stronger emotional connection with the environment (Leff, 2001). School garden projects, agroecological management and bioconstruction practices are examples of activities that integrate touch with environmental learning. In addition, tactile experimentation can be especially important for young children, who explore the world with their hands, and for people with visual impairments, ensuring more accessible and inclusive teaching.

Smell has a profound impact on memory and emotion. The smell of wet earth, flowers, medicinal plants and wood can evoke memories and feelings of belonging to the environment. Incorporating activities such as growing and identifying aromatic plants, making compost and studying natural forest scents can help students develop a more sensitive bond with the ecosystem. The olfactory experience reinforces the perception of the diversity of environments and the importance of conserving natural resources.

Taste can also be a powerful tool in environmental education, especially when it relates to healthy and sustainable food. Trying native fruits, agro-ecological foods and traditional dishes prepared with local ingredients promotes a practical understanding of biodiversity and food culture. The relationship between taste and territory can be explored in projects involving food production, the valorization of agroecology and the recovery of traditional knowledge about nutrition and unconventional food plants (PANCs).

By integrating the senses into environmental education, it is possible to transform the way individuals perceive the world. Learning ceases to be just an intellectual abstraction and becomes a lived experience, broadening sensitivity to natural elements and non-human beings. This process has profound implications, especially in communities where children grow up in violent or degraded environments, as it enables them to re-signify space and relationships.

When exposed to positive examples and a respectful connection with the environment, individuals tend to internalize more empathetic and responsible values and attitudes. In this way, sensory environmental education not only favors learning, but also contributes to the formation of subjects who are more attentive, critical and integrated with nature. The creation of multi-sensory experiences should be encouraged in schools, universities and community spaces, making environmental education more inclusive, affective and transformative.

Emotions and affections play a central role in environmental learning, profoundly influencing how individuals perceive, value, and relate to nature. Various strands of psychology and environmental education have highlighted that merely transmitting technical and scientific knowledge about environmental degradation and its consequences, while necessary, is insufficient to generate a genuine commitment to conservation. Emotional connection with the environment is an essential element for

transforming people's perceptions and attitudes, making them more engaged and sensitive to ecological issues (Leff, 2001).

Experiential learning theory, proposed by David Kolb (1984), emphasizes that learning is strengthened when individuals directly experience the concepts being studied. In this context, affective and sensory experiences in nature — such as touching the soil, smelling the forest, listening to animal sounds, and observing seasonal landscape changes — create lasting emotional memories, reinforcing a sense of belonging and care. This approach aligns with the pedagogy of enchantment proposed by Gutiérrez and Prado (1999), which advocates for fostering fascination and sensitivity in environmental education, allowing learners to feel like an integral part of the natural environment.

Additionally, the concept of "biophilia," introduced by Edward O. Wilson (1984), reinforces the idea that humans have an innate tendency to seek connections with other forms of life. When this affinity is nurtured from childhood through direct experiences with nature, individuals are more likely to develop a genuine commitment to environmental conservation. This affective bond can be observed, for example, in Indigenous and traditional communities, whose ways of life are intrinsically linked to respect and reciprocity with the ecosystems they inhabit.

However, modernity and rapid urbanization have progressively distanced individuals from direct contact with the natural environment, creating a phenomenon that Richard Louv (2005, 2015) describes as “nature-deficit disorder.” This disconnection not only harms physical and mental health but also reduces environmental sensitivity and empathy toward non-human beings. Therefore, educational strategies that restore emotional and sensory engagement with the environment are essential to overcoming this alienation and rebuilding a more harmonious relationship with nature.

Integrating affective and emotional dimensions into environmental education can thus strengthen ecological awareness, stimulate pro-environmental behaviors, and foster an ethic of care and socio-environmental responsibility. Educational projects that embrace this approach may include immersive nature activities, ecological storytelling, artistic practices inspired by the landscape, and methodologies that encourage dialogue between scientific and traditional knowledge. By recognizing the importance of emotions in learning, environmental education expands its transformative potential,

promoting a deeper and more meaningful connection between individuals and the natural world.

The Power of Narratives in Environmental Education

Stories and narratives are powerful tools for fostering an emotional connection with the environment, as they enable individuals to understand and engage with ecological issues in a sensitive and intuitive manner. The pedagogy of storytelling, rooted in oral traditions and narrative practices, creates a space for transmitting knowledge, values, and experiences that encourage a deeper and more affective relationship with nature.

Jerome Bruner (1991) argues that learning occurs through both logical-scientific thinking and narrative thinking, with the latter being essential for making sense of experiences and constructing identities. In the context of environmental education, stories can transform abstract concepts into tangible experiences, bringing learners closer to environmental realities and fostering greater empathy toward non-human beings. Indigenous tales about the origins of forests, farmers' accounts of soil resilience, or even fictional stories exploring human-ecosystem relationships can cultivate ecological awareness that extends beyond technical knowledge.

David Sobel (1996), in his studies on the relationship between children and nature, emphasized the importance of "bonding activities" before introducing environmental problems. According to him, a pedagogy that first establishes an emotional connection between learners and the environment—through stories, outdoor play, and sensory experiences—fosters a more genuine commitment to conservation. When narratives are employed as a pedagogical tool, they create affective memories that strengthen this bond, making environmental education more engaging and transformative.

Examples of Activities and Projects Incorporating Sensory and Affective Dimensions

1. **Observation of Local Fauna and Flora**

   Taking students to observe and document the biodiversity of a natural environment, such as an ecological reserve or urban park, fosters a more attentive and sensitive perception of life around them. Methods like the "nature

journal" encourage the recording of seasonal changes, animal behavior, and ecological interactions.

2. **Sensory Gardens**

   Designed to stimulate the five senses—sight, hearing, touch, smell, and taste—through a diversity of textures, aromas, colors, and natural sounds. In addition to being inclusive for individuals with disabilities, sensory gardens promote an immersive and meditative experience with the environment.

3. **Field Classes and Interpretative Trails**

   Outdoor activities where participants walk guided trails while learning about local ecosystems. Incorporating narratives along the way, such as Indigenous legends or stories of resilience from traditional communities, strengthens the emotional connection with the territory.

4. **Environmental Rituals and Celebrations**

   Practices such as solstice and equinox celebrations, gratitude rituals to the land, or reforestation events with cultural symbolism reinforce the sense of belonging to nature and encourage an ethical commitment to its preservation.

5. **Art and Creative Expression in Nature**

   Workshops in painting, music, and sculpture held outdoors, using natural elements such as soil pigments, clay, and leaves, encourage artistic expression inspired by the environment. These activities strengthen the affective bond with the landscape and awaken a sense of beauty and environmental stewardship.

These approaches demonstrate that environmental education can go beyond technical and rationalist discourse, valuing feeling, experiencing, and storytelling as legitimate forms of learning (Kolb, 1984) and ecological engagement.

Challenges in Transitioning to a Less Anthropocentric Environmental Education

The shift towards a less anthropocentric environmental education faces various structural, epistemological, and practical challenges. One of the main obstacles is institutional resistance, as many educational policies and academic curricula are still shaped by a Cartesian and productivity-driven view of knowledge. This perspective prioritizes technical and scientific content, often relegating the sensory, emotional, and relational dimensions of learning to a secondary role.

Another significant challenge is the lack of resources, both material and human, to develop educational practices that integrate sensory and affective approaches. Many educational institutions lack the necessary infrastructure for outdoor activities, ecological art workshops, or projects involving interaction with traditional communities. Furthermore, the dominance of formal academic knowledge over other knowledge systems—such as indigenous, *quilombola*, and agroecological knowledge—remains a barrier to adopting more holistic and participatory methodologies.

The difficulty of integrating sensory and emotional practices into the traditional curriculum must also be considered. Conventional teaching, often based on memorization and quantitative assessment, does not easily align with proposals emphasizing direct experience, environmental perception, and emotional connection with nature. Reforming these practices requires efforts in teacher training and awareness, as well as changes in educational guidelines that allow for greater methodological flexibility.

OPPORTUNITIES FOR TRANSFORMATION

Despite these challenges, adopting a less anthropocentric approach in environmental education presents numerous opportunities to transform people's relationship with the environment and strengthen their commitment to sustainability. One of the main advantages is the potential to develop more engaging and meaningful education, where students become active participants in the construction of knowledge. The incorporation of sensory experiences, narratives, and extension activities allows environmental learning to go beyond abstract discourse and become deeply rooted in individuals' concrete experiences.

Another significant opportunity lies in valuing local and traditional knowledge, fostering a more equitable dialogue between scientific knowledge and other ways of perceiving and understanding nature. Interdisciplinary projects involving Indigenous, Quilombola, and rural communities not only enrich learning but also strengthen environmental justice by recognizing the crucial role these populations play in ecosystem conservation.

Furthermore, integrating more sensitive and holistic approaches into environmental education can contribute to the emotional well-being of both students and educators. Studies have shown that contact with nature reduces stress, improves

concentration, and stimulates creativity (Louv, 2005). By encouraging this deep connection with the environment, education can help cultivate more conscious, empathetic citizens who are committed to preserving life on the planet.

Therefore, despite institutional and structural challenges, investing in a less anthropocentric environmental education is an essential strategy for reshaping our relationship with the natural world. By integrating sensory, emotional, and interdisciplinary practices, it is possible to transform environmental education into a dynamic and transformative experience capable of fostering profound changes in how we perceive and care for the planet.

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