

# Historical Context of Environmental Education in the Amazon: a bibliographic review

O Contexto Histórico da Educação Ambiental no Amazonas: uma revisão bibliográfica

El Contexto Histórico de la Educación Ambiental en Amazonas: una revisión bibliográfica

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**Abstract:** The concern of scientists, educators, philosophers, poets and observers regarding man's distancing from nature dates back many centuries. In this sense, this work aimed to analyze the historical context of Environmental Education in Amazonas from 2008 to 2021, through a bibliographical review tracing the relevant points in this process, which contributed to the strengthening of EE in recent years. For data collection, the SCIELO, Google Academic, Google Scholar, Capes and Plataforma Sucupira databases were used, language was not limited in an attempt to obtain a relevant amount of theoretical reference, for data collection, information provided and disclosed without consider the period of publication. An average of 43 scientific works were found, including articles, dissertations and theses, of which only 20 were selected according to the inclusion and exclusion criteria. Of these works, all were published in Portuguese. With regard to Environmental Education in Amazonas, there is an urgent need for it to be participatory, transformative and emancipatory, in search of the transition from naive consciousness to critical consciousness. And for praxis to occur (reflection-action), the generating themes, proposed by Freire, can meet the confrontation of the society/culture and nature dichotomy and, in this sense, implement the attributes of EE in a Critical-Transforming perspective.

**Keywords:** Local knowledge, Dialogues, Nature.

**Resumo:** A preocupação de cientistas, educadores, filósofos, poetas e observadores quanto ao afastamento do homem em relação a natureza vem de muitos séculos. Nesse sentido, este trabalho objetivou analisar o contexto histórico da Educação Ambiental no Amazonas no período de 2008 á 2021, através de uma revisão bibliográfica traçando os pontos relevantes nesse processo, que contribuíram no fortalecimento da EA nos últimos anos. Para a coleta de dados foram utilizadas as bases de dados SCIELO, Google acadêmico, Google Scholar, Capes e Plataforma Sucupira, não foi limitado idioma na tentativa de obter quantidade relevante de referencial teórico, para coleta de dados reuniu-se informações fornecidas e divulgadas sem considerar o período de publicação. An average of 43 scientific

works, including articles, dissertations, and theses, were found. Of these, only 20 were selected according to the inclusion and exclusion criteria. All of these works were published in the Portuguese language. No que se refere a uma Educação Ambiental no Amazonas é urgente a necessidade de que ela seja participativa, transformadora e emancipatória, em busca da transição da consciência ingênua à consciência crítica. To achieve praxis (reflection-action), Freire's proposed generative themes can contribute to addressing the dichotomy between society/culture and nature and, in this sense, realize the attributes of EE from a Critical-Transformative perspective.

**Palavras-chave:** Conhecimento local, Diálogos, Natureza.

**Resumen:** La preocupación de científicos, educadores, filósofos, poetas y observadores por el alejamiento del hombre de la naturaleza se remonta a muchos siglos atrás. En ese sentido, este trabajo tuvo como objetivo analizar el contexto histórico de la Educación Ambiental en Amazonas de 2008 a 2021, a través de una revisión bibliográfica rastreando los puntos relevantes de este proceso, que contribuyeron al fortalecimiento de la EA en los últimos años. Para la recolección de datos se utilizaron las bases de datos SCIELO, Google Academic, Google Scholar, Capes y Plataforma Sucupira, no se limitó el idioma en un intento de obtener una cantidad relevante de referencia teórica, para la recolección de datos, la información proporcionada y divulgada sin considerar el período de publicación. Se encontraron un promedio de 43 trabajos científicos, entre artículos, disertaciones y tesis, de los cuales solo 20 fueron seleccionados según los criterios de inclusión y exclusión. De estas obras, todas fueron publicadas en portugués. En cuanto a la Educación Ambiental en Amazonas, urge que sea participativa, transformadora y emancipadora, en busca del tránsito de la conciencia ingenua a la conciencia crítica. Y para que ocurra la praxis (reflexión-acción), los temas generadores, propuestos por Freire, pueden enfrentar la confrontación de la dicotomía sociedad/cultura y naturaleza y, en ese sentido, implementar los atributos de la EA en una perspectiva Crítica-Transformadora.

**Palabras clave:** Saber local, Diálogos, Naturaleza.

## Introduction

The environmental issue took a long time to gain visibility on the global stage because the environment was seen as a less relevant theme compared to social, cultural, and economic problems. In Brazil, a more in-depth analysis is possible because we inherited some preconceptions from colonization, such as the conception that the forest is “wilderness” and should be cleared to make way for civilization (Rufino; Crispim, 2015). Furthermore, there was the perception that indigenous people were uncivilized and uneducated because they lived in the forest (GADOTTI, 2013).

Theoretical contexts regarding Environmental Education (EE) in the state of Amazonas were addressed, understanding them as emerging educational paradigms that can help raise awareness among the population about environmental issues related to sustainable development in the region, and highlighting the historical context in this process.

Emphasizing the changes being made to ensure the sustainability and biodiversity of the natural ecosystem and ensuring the protection of cultures and traditional peoples, river dwellers, and emphasizing concerns about sustainable development, the environment, and environmental education.

The state of Amazonas is one of the privileged terrains of the major environmental discussions, with 97% of its territory consisting of preserved native forest and a population of 2,813,085 inhabitants, distributed across 62 municipalities (BRAZIL, 2010). With the expansion of the agricultural frontier in some municipalities in the southern region of the state, the increasing pressure on the natural environment, and constant concerns about the use of forest natural resources, the sustainability issue in the Amazon has been constantly discussed.

In this context, the state of Amazonas needs to make financial investments in the education of professionals committed to the social development of the country. This initial commitment leads us to question to what extent the intellectual product of research and postgraduate studies in Amazonas is contributing to the reduction of social inequalities, the improvement of the population's quality of life, and the socioeconomic development of the country, in addition to other public sectors of society.

Thus, our objective was to analyze the historical context of Environmental Education in the state of Amazonas through a literature review, tracing the relevant points in this process that have contributed to the strengthening of EE in recent years.

## Discussion Methodology

This study constitutes an analytical literature review regarding the Historical Context of Environmental Education in Amazonas. Data collection was conducted in April 2022, and the following research databases were utilized: Scientific Electronic Library Online (SCIELO), Google Scholar, Google Academic, Capes, and Plataforma Sucupira. The inclusion criteria were defined as articles, dissertations, and theses published on research related to Environmental Education in Amazonas with publications from 2008 to 2021.

This study included articles that featured descriptors in the abstract such as Environmental Education (EE), Historical Context, Amazonas, Northern Region, teaching, schools, and their English variants. For searches on Google Scholar and SCIELO, no language restriction was employed, in an attempt to obtain a relevant quantity of theoretical references. However, it was observed that publications in Portuguese contained the most relevant information for the study, as it concerns the historical development of EE in Amazonas. No specific date was set for the selection of articles since this analysis focuses on the historical context, and as the theme has not advanced significantly in the region, resulting in a scarcity of studies in the area, setting a date limit would restrict the data collection, thus allowing for a broader range of data for analysis. As an exclusion criterion, articles that were not related to the state of Amazonas and did not address Environmental Education were discarded.

After selecting the articles according to the previously defined inclusion and exclusion criteria, the following steps were followed in sequence: exploratory reading, selective reading, and the selection of materials that fit the objectives and theme of this study, analytical reading and analysis of the texts, concluding with interpretive reading and article writing.

The literature review will assist in the preparation of analyses, pointing out the perspectives of the study in question, consolidating information with the collected material, and aiding in the understanding of the current context of Environmental Education in the state of Amazonas.

An average of 43 scientific works, including articles, dissertations, and theses, were found. Of these, only 20 were selected according to the inclusion and exclusion criteria. All of these works were published in the Portuguese language.

## Results and Discussion

As a literature review article, this type of investigation represents the broadest methodological approach to reviews, allowing for the inclusion of both experimental and non-experimental studies to achieve a comprehensive understanding of the analyzed research. The analysis led to the discovery of works that indicate the possibility of

studies on the critical focus of education, an opportunity to contemplate research concerned with equity and justice. Therefore, efforts were made to identify signs that could point to the emergence of new research, an approach characterized by common sense and a unified and coherent conception.

Regarding Environmental Education (EE), it is worth highlighting Law No. 9,795 of April 27, 1999, which established the National Policy of Environmental Education (PNEA). Article 1 states that: “Environmental Education is the processes by which individuals and communities develop social values, knowledge, skills, attitudes, and competencies directed towards the conservation of the environment, resources for the common use of the people, essential to a healthy quality of life and its sustainability” (BRAZIL, 1999).

This concern for the healthy existence of current and future generations is an essential part of the concept of sustainable development. These ideas were conceived in 1972 at the First United Nations Conference on the Human Environment held in Stockholm, Sweden, but their foundations were established in the 1987 Brundtland Report formulated by the World Commission on Environment and Development (WCED), chaired by Gro Harlem Brundtland, the Prime Minister of Norway. The Environmental Education:

Emerged as a response to needs that were not being fully met by formal education. In other words, education should include values, abilities, knowledge, responsibilities, and aspects that promote ethical relationships among people, living beings, and life on the planet (MEDEIROS et al., 2011, p. 3).

Plantamura (2008) conducted a literature review encompassing the period from 1987 to 2006, highlighting the scholarly production in Postgraduate Programs and the possibilities of research with a critical-emancipatory approach, emphasizing concerns about sustainable development, sustainability, the environment, and Environmental Education.

The results presented were part of a larger project aimed at developing a theoretical-methodological proposal for evaluating research in Amazonas based on the concept of sustainability grounded in critical pedagogy. Aiming to emphasize the civilizational process, social justice, quality of life, and a break from the current development model, representing goals to which research should commit.

It is necessary to “environmentalize” education; EE is much more than a cross-cutting theme or a set of interdisciplinary efforts; it involves a fundamental social function, contributing to the construction of a sustainable and humane society (JACOBI, 2004, p. 10). The author's directions for environmental education follow the paths of complexity outlined by Leff (2001), with environmental

knowledge that transcends technical-scientific rationality (JACOBI, 2005).

A chronological order was established based on the publication dates of the works to begin the analysis of the historical context (Frame 01).

## Frame 01

### Works published on Environmental Education in the State of Amazonas

Year of Publication	Title	Journal/Work	Author(s)
2008	Environmental Education in Amazonas: Student Output in Postgraduate Programs and the Possibilities of Critical-Emancipatory Research	Article published at the 31st ANPEd Annual Meeting - Caxambu	Vitangelo Plantamura
2009	Information Technology in Education and the Teaching of Natural Sciences: Contributions to Environmental Education in the Amazonian Context	Dissertation	Rosa Eulália Vital da Silva
2012	Voluntary Environmental Agents: New Actors in Environmental Education within Conservation Units in the State of Amazonas	Article published on the EcoDebate Portal: Index of edition nº 1,645	Kelly Souza; Regina Cerdeira; Márcio Bentes
2014	Environmental Education as a Contributive Public Policy for Sustainable Development in Amazonas	Published at the National Congress of Research and Postgraduate Studies in Law - CONPEDI/ UFPB - Law and Sustainability II	Adriana Oliveira de Azevedo
2014	The Practice of Orienteering Sports: A Methodological Proposal for Environmental Education in High School	Article published in Revista Desarrollo Local Sostenible	Dilson Gomes Nascimento; Reginaldo Luiz Fernandes de Souza; Francisco Alcicley Vasconcelos Andrade
2015	Environmental Education in the Context of an Adult and Youth Education School: Methodological Alternatives for Generating Environmental Knowledge	Article published on IFAM Education, Science and Technology Magazine	Francisco Claudemir de Oliveira; Janari Rui Negreiros da Silva



2015	Cultural Influence on the Practice of Environmental Education in two State Schools in Amazonas	Article published in the Revista Monografias Ambientais	Rafaela Gonçalves de Lemos; Cibele Rosa Gracioli
2015	Brief history of Environmental Education in Brazil and around the world	Article published at the VI Brazilian Congress of Environmental Management – IBEAS	Bianca Rufino; Cristina Crispim
2015	Conceptual, historical and legal aspects of education for sustainable development in the Amazon	Article published in the Electronic Magazine Mutações	Josenildo Santos de Souza; Camilo Torres Sanchez; Germán Palácio Castanheda
2016	Contributions of Freirean theory to praxis in critical Environmental Education in the Amazon	Article published in the Annals of the 1st Paulo Freire Reading Forum of the Northern Region: Popular Education in debate	Leandro dos Santos; Odete Sossai; Rildo Nedson Mota de Sousa
2016	Environmental Education in municipal schools in Manaus/AM	Article published in Revista Amazônida	Valéria Augusta C. de M. Weigel; Ana Rafaela Gonçalves Ferreira
2018	Environmental Themes in Public Schools in Amazonas: Analysis based on projects developed within the scope of the Science at School Program – PCE	Article published in the Brazilian Journal of Environmental Education	Karina de Oliveira Milhomem; Maria Olívia de Albuquerque Ribeiro Simão
2018	Environmental Education in Basic and Technological Education Schools in the Metropolitan Region of Rio Negro/Solimões - Amazonas-Brazil: Analysis and Perspectives	Thesis	André Vilhena de Oliveira



2019	Environmental Education and Democratic Participatory Management as Instruments of Socio-Environmental Governance in Conservation Units (Uc) in the state of Amazonas (AM)	Article published on Revista de Direito Ambiental e Socioambientalismo	Ulisses Arjan Cruz dos Santos; Lídia de Abreu Carvalho Frota
2019	Conception of Environmental Education in public schools in Atalaia do Norte-AM	Article published on Revista Multidisciplinar em Educação	Bárbara Gabriela Lima Pinto; Tales Vinícius Marinho de Araújo; Renato Abreu Lima
2020	Conceptions of Environmental Education in the teaching of Ecology in attention to teaching strategies: a bibliographic review	Article published on Revista Eletrônica do Mestrado em Educação Ambiental	Eloisa Antunes Maciel; Rosangela Inês Matos Uhmman
2020	Environmental Education in the Amazon: An Interdisciplinary Experience	Dissertation	Cilene Maria Melado Alvim Ribeiro
2021	Environmental Education in the Practice of Elementary School Teachers	Dissertation	Annanda Rayane Santos de Azevedo
2021	Nature Box: A proposal for Environmental Education in non-formal spaces	Article published on Rede Amazônica de Educação em Ciências e Matemática	Ercilene do Nascimento Silva de Oliveira; Sammya Danielle Florencio dos Santos; Fabrícia Souza da Silva; Augusto Fachín Terán
2022	Environmental Education in Schools as an instrument for the preservation of the Amazon	Article published on Revista de Educação Ambiental	Wander de Jesus Barboza Duarte

Source: Authors, 2022. Titles translated into English for comprehension purposes.

Considering the consulted databases, it is possible to observe that between the years 2010 and 2022, there have been studies related to Environmental Education (EE) and biodiversity in Amazonas. The

frequency of these publications increases from 2015 and appears to remain consistent until the end of the considered period (BARBOSA; LIMA; LIMA, 2023). These results may be associated with researchers' growing concern about biodiversity issues and the increasing number of postgraduate programs in the state.

During the period from 1987 to 2006, the limited production in this area is evident, with only 31 works. The four chosen themes together account for 10.6% of all 3,231 theses and dissertations from that period. When limiting the analysis to works related to the four chosen themes, Environmental Education represents 9% of the total of 342 works. The concentration at UFAM (Federal University of Amazonas) is explained by the higher number of courses offered. The predominance of INPA (Amazon's National Research Institute) in doctoral programs can be justified by the fact that UFAM and UEA (University of the State of Amazonas) had only recently approved such courses less than four years prior (Table 01).

**Table 01**

Student Output in the Period 1987-2006 by Institution, according to the themes Sustainability, Sustainable Development – SD, Environment – EN, and Environmental Education – EE. T/D – Theses and Dissertations, Abs. — Absolute Frequency, % Relative Frequency

Course	Institution	Total T/D 1987 – 2006 (A)		Sustainability	SD	EN	EE	All 4 themes (B)	
		Abs.	%					Abs.	%
Master's degree	INPA	1566	48.5	12	20	43	01	76	22.2
	UFAM	1060	32.8	42	49	90	25	206	59
	UEA	101	3.2	02	04	24	03	33	9.6
Doctorate degree	INPA	480	14.8	05	05	18	01	29	8.6
	UFAM	24	0.7	-	-	01	01	02	0.6
	UEA	-	-	-	-	-	-	-	-
<b>Total</b>		<b>3231</b>	<b>100</b>	<b>61</b>	<b>78</b>	<b>172</b>	<b>31</b>	<b>342</b>	<b>100</b>

Adapted from Plantamura (2008)

The first dissertation in Environmental Education (EE) emerged in 1999, and from 2000 to 2006, the progress was slow and not very representative, accounting for only 0.9% of the total works during the examined period.

Understanding the human being as a presence in the world defines them more as a transformer than as an adaptable being; they are transformative beings who recognize that adaptation cannot exhaust their existence in the world.

Humans, in their relationship with nature through multiple activities, create themselves as individuals and as a society. The historical process is a process of humanization. The economic-productive activity, through which humans transform and socialize nature, is only possible through political-cultural activity, through

which humans organize themselves individually and as a community (PLANTAMURA, 2008).

In the past 19 years (1987-2006) of these studies, works in EE demonstrated limited incidence. Even though there was no clear intention in this regard, they point to the need for research to incorporate indicators of social and economic consequences into the current indicators of process and scientific quality of the results.

Silva (2009) presents in his dissertation the paradigm of complexity and the basic assumptions of EE, emphasizing that everything is in motion, in constant flows of energy, in a process of change, including thought, in terms of form and content. Thus, the produced knowledge is communicated and transformed; everything is connected, intertwined with the phenomena of the physical world. Given that the era of relationships requires interconnection, interrelatedness, a networked view, integrated systems, a vision of overcoming the fragmentation of knowledge for the whole.

From the recognition of these mutual exchanges in the educational process and recognizing that these are related to the overall social organization, Environmental Education is seen as a facilitator for a creative interaction of a new kind of person, prepared to act in complex contexts, responding to the challenges posed by the dominant development style, committed to building a new harmonious style among society, nature, science, and technology, capable of overcoming mere instrumental and economic rationality, which gave rise to environmental and social crises (SILVA, 2009).

This is corroborated by Medina, and Santos (2008, p. 25) when they understand EE “as the incorporation of socio-environmental, ecological, ethical, and aesthetic criteria into educational objectives”.

The issue of EE dates back to the First Intergovernmental Conference on Environmental Education, organized by UNESCO and held in Tbilisi, the capital of Georgia, in 1977. In this conference, recommendations were formulated that became an indispensable reference for those interested in this topic. Since that event, other meetings have been developed to reflect on the educational task in the face of the complexity of environmental issues, seeking proposals for action in the educational field (PLANTAMURA, 2008).

These international events demonstrate that the environmental issue is at the forefront of discussions in government assemblies and non-governmental organizations (NGOs), showing recognition that it is necessary to achieve the ideal of sustainable societies.

Acknowledging that different pedagogical currents are based on both the social function attributed to education and ideas about how learning occurs (Zabala, 1998), when reflecting on Environmental Education, it is clear that it is of interest to contribute to the construction of a democratic society so that individuals engage actively, both individually and collectively, in solving environmental problems (DIAS, 1995; PENTEADO, 1997; REIGOTA, 1997).

Souza, Cerdeira, and Bentes (2012) present EE and conservation units, describing these two very different and challenging contexts through the Voluntary Environmental Agent Program developed by the State Center for Conservation Units (CEUC) linked to the State Secretariat of the Environment and Sustainable Development of the State of Amazonas – SDS.

This program became a link between communities and the management agency of the conservation units (CEUC). The authors mention the results of the implementation of this program in 2009 and 2010, showing the perception of traditional communities regarding the use of natural resources and environmental education actions.

The main challenge was to demystify the perceptions of public institutions, non-governmental organizations, community associations, and other forms of organization regarding the agents promoting monitoring actions in the communities (SOUZA, CERDEIRA, BENTES, 2012).

One question raised was as follows: What kind of environmental education are we engaging in with voluntary environmental agents?

Environmental education should be oriented towards the community, so that it can define criteria, problems, and alternatives, but without forgetting that this community rarely lives in isolation. It is in the world, receiving diverse influences and also influencing other communities... (REIGOTA, 2009, p. 18).

Sato (2005) identifies pride and gluttony as sins of Environmental Education and warns about the care needed when using environmental education in environmental management and protected areas, seeking to solve all problems. Guimarães (2004) refers to EE as an educational action that should occur with everyone, both in the school environment and involving different actors.

Schools and other groups have developed projects where environmental awareness is their flagship, but this work by teachers “has not been sufficient to reduce environmental degradation caused by modern urban-industrial society” (GUIMARÃES, 2004).

Oliveira and Silva (2015), Lemos and Gracioli (2015), Weigel and Ferreira (2016), Nascimento and Souza (2017), Oliveira (2018), Pinto, Araújo, and Lima (2019), Maciel and Uhmman (2020), Azevedo (2021), Oliveira et al. (2021), Duarte (2022) bring the perspective of EE in public schools, working on the perception and conception of students, as well as formal and non-formal spaces.

These authors assert that educational practices should aim at proposals centered on changing customs, values, attitudes, and social practices, developing competencies and involving learners, taking their reality into account.

The transformation of a planet, increasingly threatened by socio-environmental risks and their damages, where its existence and

preservation are vital for the continuation of human life, necessitates the search for a new transversality of knowledge, a new way of researching, thinking, and elaborating knowledge, enabling the integration of theory and practice might be a possibility of EE.

In this regard, Duarte (2012) emphasizes that, to fulfill these functions, EE should lead to a closer connection between educational processes and reality, structuring activities around concrete problems that the community faces. It should focus on the analysis of these problems through an interdisciplinary and global perspective that allows for an adequate understanding of environmental issues.

For Muller (2008), EE in a societal context can enable the understanding of the complex characteristics of the environment and interpret the interdependence between the various elements that make up living beings. This should aim to use natural resources rationally for the material and spiritual satisfaction of society, both in the present and the future.

It should empower individuals to exercise full citizenship through the formation of a comprehensive conceptual, technical, and culturally capable base to overcome obstacles to the sustainable use of the environment. The challenge of education is to create the foundations for understanding reality.

In this sense, Reigota (2002) makes us reflect on the need to deconstruct social representations to build new knowledge and, thus, the pedagogical process in the path of EE is a perspective to be considered at all educational levels. On this, Moran (2015, p. 17) argues that the best way to learn is by combining and balancing activities, challenges, and contextualized information.

From the author's perspective, we infer the emergence of a teaching where the learner is the conductor of their own knowledge. In this context, active methodologies are fundamental to implementing EE practices, leading individuals to problematize the topic in the social context of their reality.

It is believed that EE is within a critical/emancipatory perspective and is effective within the contexts of use, practices, and knowledge existing and experienced by local cultures. Thus, it is necessary to recognize that cultural aspects directly influence the construction of new ethical stances regarding socio-environmental issues.

Historically, the Amazon has been a scene of strong ideological and political tensions, becoming the subject of various conflicts of interest. These conflicts have generated profound environmental, economic, social, and cultural impacts, especially in identity formation, knowledge construction, and socialization of social representations (ANDRADE, 2017).

The positive signs reflected in research with critical emancipatory potential need to find resonance in the efforts of policymakers in the State of Amazonas, clearly defining directions for an action focused

on democratic sustainability that respects the peculiarities of the peoples in the region.

Therefore, it is considered that it is from the reconfiguration of the human-nature relationship that it is possible to think of new approaches to EE in schools. It is necessary to start from the beginning, as changing behavior begins with how individuals relate to nature so that they can become aware of the environmental crisis and take a critical and transformative stance toward reality.

## Final Remarks

Analyzing the Historical Context of EA in Amazonas was our aim in this article. Through this process, we sought to construct a path that went beyond information, but rather engaged in dialogic EE, discovering the worldviews of the people living in a little-known Amazonas.

In this process, there was not a single guide, but everyone, researchers, technicians, students, and other actors participated in constructing this trajectory. During the preparation of this article, there were moments of dialogue and the construction of local knowledge with the participation of people living in these rivers and forests.

Pointing out the absence of a consolidated local bibliography on the subject is important to stimulate new studies. At the national level, there is already comprehensive publication, with books as well as extensive and diversified research. In view of this, local scientific production can be achieved, fulfilling a broader social objective, extending the concept of the environment, and seeking to demonstrate, through research, the importance of discussing EE and participatory democratic management as instruments of socio-environmental conservation in conservation units in the State of Amazonas.

Regarding critical Environmental Education in Amazonas, there is an urgent need for it to be participatory, transformative, and emancipatory, seeking the transition from naive consciousness to critical consciousness. To achieve praxis (reflection-action), Freire's proposed generative themes can contribute to addressing the dichotomy between society/culture and nature and, in this sense, realize the attributes of EE from a Critical-Transformative perspective.

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