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# Towards an Ecological Philosophy of Education: Eco-Education Against Cartesian Understanding of Nature

**Abstract:** This study examines how the Cartesian thought structure in modern education affects the relationship between humans and nature, emphasizing the need for an ecological educational philosophy. Cartesian thought has fostered a human-centered perspective that perceives nature as a mechanical entity, exacerbating environmental challenges. In contrast, ecological education aims to cultivate individuals' sensitivity to environmental issues and foster ethical responsibility by recognizing the essential relationship between humans and the natural world. By analyzing these effects, this research highlights that ecological education enhances environmental awareness, supports adopting sustainable lifestyles, and encourages harmonious interactions with nature. Restructuring education systems with an ecological paradigm will equip individuals with the knowledge necessary to comprehend environmental challenges and contribute to sustainable practices and conservation efforts.
**Keywords**: Ecological Education, Nature, Sustainability, Environmental Awareness, Cartesian Thought, Philosophy of Education.

# Ekolojik Bir Eğitim Felsefesine Doğru: Kartezyen Doğa Anlayışına Karşı Eko-Eğitim

**Öz**: Bu çalışma, modern eğitim sisteminin Kartezyen düşünce yapısının doğa-insan ilişkisine etkilerini inceleyerek ekolojik eğitim felsefesine geçişin gerekliliğini vurgulamaktadır. Ekolojik eğitim, bireylerin çevre bilincini artırmayı, sürdürülebilir yaşam biçimlerini benimsemeyi ve doğayla

uyumlu bir şekilde yaşamayı teşvik etmektedir. Kartezyen düşünce, doğayı mekanik bir nesne olarak görerek insan merkezli bir bakış açısını pekiştirmiştir. Bu durum, çevresel sorunların derinleşmesine yol açmıştır. Ekolojik eğitim, insanın doğanın ayrılmaz bir parçası olduğunu kabul ederek, bireylerin çevresel sorunlara duyarlılık geliştirmelerini ve etik sorumluluk almalarını hedefler. Eğitim sistemlerinin ekolojik bir paradigma doğrultusunda yeniden yapılandırılması, bireylerin çevresel sorunları anlamalarını ve çözüm üretmelerini sağlayacaktır.
**Anahtar Kelime**: Ekolojik Eğitim, Doğa, Sürdürülebilirlik, Çevre Bilinci, Kartezyen Düşünce, Eğitim Felsefesi.

## Introduction

Humanity currently faces an ecological crisis marked by the depletion of natural resources and the decline of biodiversity. These pressing issues necessitate a rethinking of the ontological and ethical relationships between humans and the natural world, alongside the urgent development of sustainable solutions. In this context, philosophy of ecological education stands out as a guiding principle aimed at understanding the relationship between the natural environment and humans, and restructuring these relationships based on sustainability (Öztürk Mustafa 2017:38).

The modern environmental movement and pivotal events such as the first Earth Day in the 1970s helped the dissemination of ecological awareness at the societal level (Kahn 2010:36). This growing awareness underscores the significance of ecological education as a transformative pedagogical paradigm. It seeks to raise environmental consciousness, ensure sustainable lifestyles, and promote harmonious coexistence between human and non-human entities. In the face of escalating environmental crises, ecological education is increasingly recognized as a foundational necessity for ensuring a sustainable future (Brown, Jeanes, Cutter-Mackenzie 2014:4). This paradigm challenges individuals to critically examine their roles within the broader ecological system and to undertake meaningful actions that advance environmental stewardship.

However, addressing ecological crises requires more than superficial awareness; it requires a profound ecological understanding that facilitates transformative actions. Ecological education is a learning process that helps individuals recognize their connection to nature and encourages them to live in

harmony with it. (Gadotti 2008:12). Such an understanding enables individuals to develop a sense of empathy and responsibility toward the environment, thereby motivating them to engage in practices that support sustainability and ecological preservation. Yet, this transformative potential is often obstructed by entrenched anthropocentric paradigms, which have historically rendered human-nature relationships exploitative and disconnected (Abram 2012:27). This disconnection manifests in practices such as concentrated animal feeding operations (CAFOs) and educational activities like dissection, which perpetuate insensitivity toward non-human life under the guise of scientific inquiry (Martusewicz, Edmundson, Lupinacci 2020:39).

The frameworks such as Eco-feminist pedagogy and eco-justice education have emerged within the broader concept of ecological educational philosophy, questioning the cultural and systemic roots of both social and ecological degradation. These frameworks advocate for justice that transcends human-centred concerns, extending ethical consideration to the non-human world (Martusewicz Edmundson, Lupinacci 2020:67). They aim to dismantle hierarchical dualisms that separate humans from nature, fostering systemic change that aligns with ecological realities. Complementing these, an eco-social educational philosophy promotes the development of ecological selfhood and the extension of social compassion and care to the non-human world (Naess 1973:40). Drawing on Arne Naess's deep ecology framework and ecofeminist thought, the concept of the ecological self encourages individuals to view themselves as integral members of a broader biotic community (Diehm 2002:24). This perspective, rooted in Arne Naess's deep ecology and ecofeminist thought, promotes an ethic of care and interconnectedness that challenges the anthropocentric foundations of modern education.

From a philosophical standpoint, Deleuze's critique of the Cartesian dictum "Cogito ergo sum" provides a framework for challenging dominant epistemological paradigms in education. Deleuze argues for a reorientation of thought that prioritizes contextual understanding and relational problem-solving over the

pursuit of abstract, individualized truths (Deleuze  Patton, 1994:45). In this vein, an ecological philosophy of education advocates for epistemological humility and the cultivation of ecological selfhood as central to its pedagogical aims (Bonnett, 2017:132). This philosophical shift encourages learners to critically engage with the ecological implications of their actions and decisions, fostering a deeper sense of responsibility toward the natural world.

This study examines how the Cartesian thought structure in modern education affects the relationship between humans and nature, emphasizing the need for an ecological educational philosophy. The Cartesian dualism, which views nature as separate and subordinate to humans, is identified as a foundational contributor to ecological crises. By fostering anthropocentric worldviews, this paradigm perpetuates exploitive practices and the neglect of environmental responsibility.

An ecological educational philosophy seeks to transcend this dualism by cultivating an ecological self—a perspective that situates individuals as interconnected members of the biotic community. Such an approach promotes ethical awareness and empathy for the non-human world and equips learners with the tools to engage meaningfully in the pursuit of sustainability and ecological justice. Through this lens, education can become a transformative force for reimagining human-environment relationships and addressing the ecological challenges of our time.

## 1. Supportive Arguments and Research Framework

The guiding question of our research is: "What is the impact of the dominant Cartesian thought structure within the modern education system on the relationship between humans and nature, and how can a shift toward an ecologically grounded educational philosophy transform this dynamic?"

To explore this question, the present study is grounded in five key arguments, the first of which examines *Human-Centred Tendencies and Ecological Disconnection*. Traditional educational philosophies, shaped by anthropocentric perspectives, weaken moral responsibility toward non-human entities and contribute to a disconnection from ecological realities. Rooted in the Cartesian worldview, nature is often perceived as an object to be controlled and exploited by humans, further exacerbating environmental degradation. This highlights the urgent need for a critical reassessment of human-centred tendencies in education.

*Ecological Self and Development of Empathy:* Redefining the concept of self from an ego-centric perspective to an ecological one emphasizes the role of education in fostering a more profound sense of belonging within the broader community of life. This shift enables students to develop stronger connections with the natural world, allowing them to approach ecological challenges with greater empathy, sensitivity, and moral awareness. Drawing on Arne Naess's framework of deep ecology, this perspective reorients the individual's understanding of self, situating it as part of a larger biotic community and reinforcing an awareness of interconnectedness and shared responsibility.

*Epistemological Humility and Adaptability:* Epistemological humility encourages individuals to acknowledge the inherent limitations of their knowledge, prompting a readiness to revise views and beliefs in response to ecological realities. This perspective enables a deeper understanding of the complexity of environmental issues, fostering a more adaptable and responsive mindset for addressing such challenges. Such humility is essential in confronting the multifaceted nature of contemporary environmental crises.

*Real-Life Problems and Critical Thinking:* Emphasizing real-world ecological challenges over the pursuit of fixed answers in education highlights the importance of fostering critical thinking and problem-solving skills. This approach encourages students to grapple with the complexity of ecological crises, urging them to

contextualize environmental issues within their broader social, cultural, and natural contexts. By doing so, learners can develop innovative and adaptive solutions to address the evolving nature of these challenges.

*Ecosocial Action and Sustainable Society*: An understanding of education grounded in ecosocial principles urges individuals to extend care and ethical consideration beyond human communities to include the non-human world. This perspective fosters a way of living that aligns with the natural environment while supporting the creation of a more equitable and sustainable society. By advancing an ecosocial philosophy, education seeks to cultivate a more balanced and ethically responsible relationship between human and non-human realms.

### 1.1. Research Framework:

Building on these arguments, the research is structured around four interconnected axes: the influence of Cartesian thought on the education system, its implications for the relationship between humanity and nature, the foundational principles of ecological education philosophy, and the anticipated outcomes of adopting an eco-educational approach. This framework enables a systematic exploration of how the hypothesis challenges the entrenched Cartesian dualism that has historically shaped educational thought. Furthermore, it examines the transformative potential of ecological education philosophy in reframing the concept of self and our ethical responsibilities toward the broader ecological community.

### 1.2. Reflections of Cartesian thought in the education system:

Cartesian thought views nature as an object to be controlled by humans, reinforcing a dualistic perspective that weakens the relationship between people and the natural world (Orr 1994:87). Influenced by René Descartes, this way of thinking sees humans as separate from and superior to nature, treating the natural world as a machine that can be managed and controlled (Kahn 2010:145).

Descartes argues in *Meditations on First Philosophy* that "the mind is distinct from the body, and is not subject to the same laws" (Descartes 1641:42). Additionally, in *Discourse on Method*, he states, “the universe is like a great machine” (Descartes 1637:56), further emphasizing the mechanistic view of nature that supports this dualistic separation. This mindset has encouraged humanity’s desire to dominate nature and has played a major role in deepening environmental problems.

The critique of the Cartesian view of nature emerges as a worldview that profoundly affects the relationship between humans and nature. This thought system, developed by René Descartes, positions humans as separate and superior beings while perceiving nature as a controllable object (Deetz 1996:78). This approach has reinforced the idea that nature exists solely to meet human needs and has weakened the connection between humans and nature. The divisive effect of Cartesian thought has also shaped traditional education systems. These systems have treated knowledge as separate categories, considering nature and humanity as independent domains (Neal,Palmer 2003:112). For example, while functional areas such as finance, marketing, and human resources are taught separately in management training, it has been overlooked that real-world business decisions are not addressed in such fragmented ways (Ungaretti 2015:64).

The traditional educational models shaped by Cartesian thought have further weakened individuals' relationship with nature and led to a disconnection from it. This situation has resulted in nature being viewed merely as a resource that can be exploited for economic benefit (Westwood, Jack 2007:93). However, this approach overlooks broader goals such as environmental sustainability and social welfare. Cartesian thinking aims solely to maximize shareholder wealth, relegating societal objectives like job creation and environmental sustainability to a secondary position (Neal, Palmer 2003:106).

However, the critique of Cartesian dualism questions not only these divisive effects but also the epistemological and ontological assumptions of this thought system. The Cartesian paradigm is based on the assumption that knowledge is only objective and measurable, while ignoring the emotional and cultural dimensions of human beings (Cobern 2005:72). This situation highlights the necessity of a more holistic approach to understanding individuals' relationship with nature. Post-colonial critiques are also significant in this context; they argue that Cartesian thought imposes a power-centric perspective of developed countries, disregarding the cultural and environmental values of developing nations (Westwood, Jack 2007:118).

The philosophy of ecological education challenges the Cartesian paradigm by viewing humans not as separate from nature, but as an integral part of it (Kahn 2010:87). This perspective seeks to reshape the human-nature relationship, encouraging individuals to understand environmental challenges and think creatively about solving them. Ecological education goes beyond promoting environmental awareness; it calls for transforming educational systems to align with these principles, inspiring individuals and society to work toward a sustainable future.

Building on this perspective, the ecological paradigm asserts that humans are an integral part of nature and must strive to live harmoniously (Freire 1994:45). This view highlights that nature is not merely a resource to be exploited but a whole that deserves preservation and respect. The philosophy of ecological education encourages individuals to think critically, question the harm caused by the current system to the environment, and develop sustainable solutions (Kahn 2010:92). Richard Kahn explains that eco-pedagogy urges individuals and societies to actively address ecological crises by moving beyond Cartesian dualism (Kahn 2010:103). Similarly, Paulo Freire underscores the transformative power of education,

emphasizing that ecological awareness is essential for fostering social change (Freire 1994:78).

As a result, the impact of Cartesian dualism on the relationship between nature and humanity has led not only to the deepening of environmental issues but also to the inadequacy of educational systems in understanding nature. Therefore, the critique of Cartesian thought is regarded as a starting point for the development of a more holistic and sustainable educational paradigm. Transitioning to such a paradigm through eco-education holds immense promise, not only for fostering a deeper connection between humanity and the environment but also for addressing critical global challenges in more sustainable and transformative ways.

### 1.3. Potential Outcomes and Benefits of Transitioning to Eco-Education

The anthropocentric worldview places humans at the centre of nature, viewing it as an entity to be controlled and exploited. This perspective stems from the Cartesian thought system, which establishes a dualistic division between humans and the natural world (Orr 1994:63). René Descartes' philosophy amplifies this notion by portraying humans as superior to nature and framing it as a mechanical system to be managed and used (Kahn 2010:48). This paradigm has played a central role in environmental degradation, resource depletion, and the growing disconnection between humans and the natural world.

The ecocentric (nature-centred) perspective views humans as an integral part of nature and calls for redefining the relationship between humans and the natural world. This view supports a more holistic approach to addressing environmental problems and aligns with Aldo Leopold's statement "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it does otherwise" (Nash 2007:129). This perspective urges

individuals to rethink their connection with nature and embrace a way of life that works in harmony with it.

The transition to an ecocentric approach in education seeks not only to raise individual awareness but also to drive societal transformation. Barnett, for instance, highlights that higher education institutions should engage with eight key ecosystems—social institutions, individuals, culture, learning, knowledge, economy, natural environment, and politics—through the concept of the ecological university (Barnett 2017:84). This approach bridges the gap between education, knowledge, and nature, helping individuals develop sustainable lifestyles. Therefore, transitioning from an anthropocentric worldview to an ecocentric perspective should be a core component of environmental education. This shift replaces the belief that humans are separate from nature with the understanding that they are an integral part of it, encouraging lifestyles that harmonize with nature on both personal and societal levels.

### 1.4. Philosophers and Educators Advocating for Ecological Education

Many influential thinkers in the philosophy of ecological education have been instrumental in establishing its theoretical foundations and practical applications. David W. Orr, for example, emphasizes that environmental education should go beyond the simple transmission of knowledge; it must also cultivate a sense of ethical responsibility toward the environment (Orr 1994:32). According to Orr, environmental education should encourage individuals to approach environmental issues with sensitivity and to develop solutions for these problems. Fritjof Capra emphasizes that the foundation of ecological education must be systems thinking. According to Capra, all entities in nature are interconnected, and understanding these connections plays a critical role in solving environmental issues (Capra 1982:125 ). Capra's systems thinking approach helps individuals understand the complexity of ecosystems and the sustainability of these systems. Felix Guattari has added a different dimension to ecological education by introducing the concept of

"ecological subjectivity." Guattari emphasizes that individuals are connected not only to nature but also to social and psychological ecologies. According to him, becoming aware of these connections is an important step in solving environmental issues (Guattari 2000:53). Guattari's approach of "three ecologies" (mental, social, and environmental) reveals the multidimensional nature of ecological education and argues that it should aim to enhance individuals' environmental awareness while also targeting social transformation.

Aldo Leopold is another prominent figure who highlights the ethical dimension of ecological education. In his work "*Thinking Like a Mountain*," Leopold underscores the importance of viewing ecosystems as interconnected wholes, with humans as integral components of this unity (Leopold, Schwartz, Finch 1992:129) He asserts that fostering an ethical responsibility toward nature is essential for addressing environmental challenges effectively.

Edgar Morin, on the other hand, states that ecological education should aim not only at individual awareness but also at social transformation. Morin emphasizes that environmental education should foster a sense of "one world" and "global citizenship" in individuals (Morin 1999:82). According to him, the solution to environmental problems requires individuals to take responsibility at a global level and adopt a sustainable lifestyle.

In contrast, Arne Naess has significantly influenced ecological education through his concepts of the "deep ecology movement" and "self-realization," which serve as key pillars of ecological awareness (Naess 1973:95). Naess emphasizes the need for individuals to develop a consciousness that encompasses not just their personal interests but also the integrity of the natural world. Furthermore, the systems thinking approaches of Gregory Bateson and Fritjof Capra have enhanced the understanding of ecological education by contributing to the development of ecological intelligence. These approaches encourage individuals to perceive environmental issues within a broader, interconnected context (Bowers 1994:138).

Finally, Michel Foucault's exploration of subjectivity has offered a crucial theoretical foundation for the development of ecological subjectivity (Stratford 2024:57). His work underpins an approach to ecological education that seeks to heighten environmental awareness while driving transformation on both individual and societal levels. A shared perspective among these thinkers is that ecological education should not only deepen individuals' environmental sensitivity but also foster meaningful, sustainable change within society. Its ultimate goal is to nurture individuals who are attuned to environmental issues, guided by ethical principles, and committed to adopting sustainable lifestyles.

### 1.5 Global and Türkiye's Ecological Education Projects and Programs

Ecological education is being implemented through various programs and projects to support sustainability goals on a global scale. The Sustainable Development Goals, adopted by the United Nations in 2015, have brought the issue of sustainability in education to the forefront and represent a significant turning point in this field (UNESCO: 2015). In line with these goals, different educational models and practices have been developed worldwide. The "Eco-Schools Program," as one of the most successful global initiatives in this field, aims to raise students' environmental awareness and equip them with sustainable living skills. In Türkiye, the program is implemented by the Turkish Environmental Education Foundation (TÜRÇEV) in partnership with the Ministry of National Education.

Building on such initiatives, sustainability-focused educational activities employ various methods to enhance individuals' environmental awareness and develop a sense of environmental responsibility. Teaching processes centred on "space, problem, application, value, and solidarity" are essential for the effective implementation of environmental education (Özdemir 2016:93). The ‘ecological school’ model, which has become widespread in Europe, offers an alternative to

traditional environmental education practices, and an approach has been adopted for students to interact directly with the natural environment (Hopkins 2013:147). In Türkiye, it is emphasized that environmental education curricula should be reorganized with a sustainability perspective, and it is suggested that compulsory environmental courses should be restructured in accordance with the requirements of the age (Özdemir 2016:112).

There are also important initiatives at the local level. Municipalities and non-governmental organisations support ecological education programmes and conduct projects to raise the environmental awareness of local people. TÜRÇEV's education programmes aimed at raising environmental awareness and municipalities' recycling projects are important examples in this field. Projects such as 'Learning through Landscapes,' implemented in Europe, encourage the use of school gardens as educational spaces, and try to ensure that students establish a connection with nature (Miller 2021:63).

The common goal of these initiatives is to raise environmental awareness in individuals, develop sustainable living skills and spread ecological sensitivity to all segments of society. These activities, conducted in cooperation with educational institutions, local administrations, and non-governmental organisations, play a key role in achieving global sustainability goals. Their success relies on the active participation and support of all segments of society.

## 2. Basic Principles of Ecological Education and Grounding of Educational Philosophy

Cartesian thinking, which views nature as an object to be controlled by humans, has diminished moral responsibility towards non-human beings and contributed to ecological degradation (Bowers 1994:52). This perspective underpins the anthropocentric tendencies of modern education systems and exacerbates environmental challenges by positioning humans as the reference point

for knowledge (Bowers 1994:67). To address these issues, an ecological paradigm shift in education is essential.

The philosophy of ecological education challenges these anthropocentric tendencies. Re-evaluating human-nature relationships, ecological education aims to enhance environmental awareness, promote sustainable living, and develop a holistic understanding of ecological systems. As Palmer and Neal describe, it involves "the totality of knowledge, skills, and attitudes acquired in the process of understanding individuals' interactions with the environment and making these interactions sustainable" (Neal, Palmer: 2003). Beyond simply transferring knowledge, ecological education fosters ethical responsibility and equips individuals to live in harmony with the natural world.

The philosophical foundations of ecological education are grounded in the interconnectedness of humans and nature. Capra emphasizes that understanding the complex structure of ecosystems and our role within them forms the cornerstone of this educational approach. This perspective underscores a holistic ontology that values the interdependence of all living beings and challenges the fragmented worldview perpetuated by Cartesian thought. Similarly, Morin's concept of "one world" and "global citizenship" highlights the ethical dimension of ecological education, advocating for sustainability and fostering a shared sense of responsibility for the planet.

Building on its philosophical roots, ecological education is guided by key principles such as sustainability, holism, experiential learning, and critical thinking. The principle of sustainability underscores the importance of conserving natural resources and passing them on to future generations. As demonstrated by Sterling and Waters, holism highlights the interconnected nature of systems and promotes environmental awareness through integrated learning approaches (Sterling 2001:78). Experiential learning, which Gruenewald advocates, enhances the understanding of theoretical knowledge by grounding it in direct interaction with

the environment. Critical thinking, as emphasized in Barnett's concept of the "Ecological University," equips learners to analyse environmental problems and develop viable solutions (Barnett 2015:124).

At its core, ecological education strives to achieve ecological sustainability while addressing broader goals such as economic sustainability and social justice. It recognizes that ecosystems have limited carrying capacities and emphasizes protecting resources such as soil, water, and biodiversity (Özdemir 2016:89). By integrating environmental ethics and principles of sustainability into educational practices, ecological education offers a comprehensive framework to confront ecological and societal challenges. Ultimately, this approach not only transforms the way humans interact with nature but also fosters the skills and values needed to build a more sustainable and equitable future.

Ecological literacy stands out as a fundamental competency that enables individuals to understand the functioning of ecosystems and to develop solutions to environmental issues (Kollmuss, Agyeman 2002:240). This approach aims to equip individuals with the necessary knowledge, skills, and values to develop environmentally conscious behaviours. However, research shows that the knowledge gained through environmental education does not always translate into behaviour. Therefore, environmental education should encompass not only cognitive but also affective and behavioural dimensions. Sustainability and systems thinking are at the core of environmental education and require a holistic consideration of ecological, economic, and social dimensions . Morin emphasizes that environmental education should develop awareness of "one world, living together, and global citizenship." Systems thinking enables individuals to understand environmental issues at the local level and in a global context, allowing them to grasp the connections between complex systems (Hargreaves 2003:125).

The practical applications of ecological education, grounded in its educational philosophy, are reflected in curriculum development, teaching methods,

and assessment. As Klautke and Kohler point out, the ecological education curriculum includes objectives such as acquiring environmental rights and responsibilities, understanding the causes of environmental pressures, and recognizing ecological, economic, and social impacts. In line with Orr's concept of ecological literacy, active learning, project-based learning, and field studies are emphasized as key instructional methods. Additionally, assessment in ecological education necessitates a holistic approach that evaluates not only knowledge but also skills and attitudes (Orr 1994:86).

The fundamental principles and philosophy of ecological education are essential for building a sustainable future. This approach aims to nurture environmentally conscious individuals capable of critical thinking and ethical, solution-oriented action. By integrating teaching methods and assessment strategies rooted in ecological principles, learners are empowered to drive societal changes toward sustainability. To achieve this, school curricula must align with ecological education philosophy, equipping students with the knowledge, skills, and values necessary to contribute meaningfully to environmental and societal well-being.

The successful implementation of ecological education philosophy relies on five fundamental principles. First, the principle of Overcoming Human-Centred Thinking and Establishing an Integrated Educational Philosophy with Nature emphasizes understanding humanity’s place within nature and moving beyond human-centred perspectives. Second, developing Ecological Self and Empathy fosters sensitivity to environmental issues and a sense of responsibility toward nature. Third, Epistemological Humility and Adaptability highlight the importance of approaching knowledge with humility, embracing lifelong learning, and adapting to complex ecological challenges. Fourth, focusing on Real-Life Problems and Critical Thinking enables individuals to analyse environmental issues and develop practical solutions. Finally, Ecosocial Action and Sustainable Society call for active

participation in addressing societal and environmental challenges to build a sustainable future. Together, these principles ensure that individuals not only gain knowledge but also apply it meaningfully in their daily lives.

The five fundamental principles of ecological education philosophy provide a framework that supports individuals in enhancing their environmental awareness, developing ethical responsibility, and adopting a sustainable lifestyle. Each principle forms the holistic structure of ecological education with both theoretical foundations and practical applications, guiding the implementation of this philosophy.

*1- Overcoming Human-Centred Thinking and Establishing an Integrated Education with Nature:* The philosophy of ecological education aims to transcend the human-centred thinking that dominates modern education and to develop an understanding of education that is integrated with nature. Modern educational systems are often based on Cartesian thought, which perceives humans as superior to nature, severing the relationship between humans and the environment and deepening environmental degradation. Bateson criticized this situation, emphasizing the importance of the interdependence between humans and nature, and argued that this relationship needs to be redefined .

The philosophy of education should question this approach and redefine the interaction between humans and nature, ensuring that individuals develop an ethical responsibility towards nature. This approach corresponds to the ecological paradigm and ecological education movements in the philosophy of education. Capra defines the ecological paradigm as a way of thinking that allows for the understanding of nature as an interconnected and interdependent system (Ahouse Merus: 1998). This paradigm encourages individuals to redefine their relationships with the environment and adopt a sustainable lifestyle in education as well. Ecological education embraces an understanding of education focused on environmental awareness and sustainability, based on the interdependence

between humans and nature. This idea should be grounded in the principles of social responsibility and environmental sustainability in educational philosophy. The principle of social responsibility emphasizes that individuals have responsibilities not only to themselves but also to their environment and society. The principle of environmental sustainability aims for individuals to develop an ethical responsibility towards nature through education and to adopt a sustainable way of life. In this context, curricula and teaching materials should be structured with content that transcends a human-centred perspective and addresses nature as a whole. The following studies can be utilized to provide a theoretical framework that can serve as a foundation for ecological education.

Naess provides the philosophical foundation for overcoming anthropocentric thinking by redefining the human-nature relationship. His call to adopt an integrated approach to education lays the groundwork for ecological education as an ethical and transformative process (Naess 1973:95). Building on Naess's philosophy, Bowers critiques the human-centred orientation in modern educational systems. He argues that this perspective treats humans as the sole reference point of knowledge, which weakens their ties with nature and exacerbates environmental degradation. He highlights the urgency of restructuring education to align it more closely with nature (Bowers 1994:142).

Orr takes these ideas further by emphasizing the need for an ecological transformation within education. Supporting Bowers' critique, Orr advocates for curricula that actively engage students with nature. He argues that fostering these interactions is key to addressing the environmental problems deepened by traditional educational systems (Orr 1994:173).

While Orr focuses on the structural changes needed, Palmer and Neal extend this discussion by emphasizing the holistic aspects of ecological education. They propose that ecological education should encompass knowledge, skills, and attitudes, fostering not only environmental awareness but also ethical

responsibility. Their focus bridges the gap between awareness and action, ensuring that students are prepared to face environmental challenges meaningfully (Neal, Palmer 2003:67).

These studies form the basis for ecological education, promoting a shift away from anthropocentric thinking. Education should enhance the human–nature connection, build ethical responsibility, increase environmental awareness, and encourage sustainable and practical solutions to environmental issues.

*2- Ensuring the Development of Ecological Self and Empathy*: Arne Naess's deep ecology understanding aims for individuals to see themselves as part of a broader biotic community and to strengthen their connections with nature (Glasser 2011:134) The development of ecological self and empathy is most strongly associated with the educational philosophy of Progressivism. Progressivism is an educational approach that centres on the active participation of individuals and experiential learning. This approach directly overlaps with ecological education, which aims to enhance individuals' environmental awareness and strengthen their connections with nature. Progressivism seeks not only for individuals to acquire knowledge but also to apply that knowledge to generate solutions to environmental issues and develop a lifestyle in harmony with nature. In this context, experiential learning is one of the fundamental elements of Progressivism.

Developing ecological self and empathy requires individuals to engage directly with nature. Activities such as nature walks, ecosystem observations, and environmental conservation projects allow individuals to enhance their environmental sensitivity while strengthening their bonds with nature and developing empathy. Furthermore, Progressivism aims to cultivate individuals as sensitive beings towards social and environmental issues. The development of ecological self and empathy targets individuals' sensitivity to environmental problems and encourages them to adopt a lifestyle in harmony with nature. Progressivism is based on the applications of pragmatism in education and

advocates for individuals to focus on the consequences of their thoughts and actions. The development of ecological self and empathy also aims for individuals to evaluate the outcomes of their relationships with nature and to develop solution-oriented approaches to environmental issues. The flexibility of educational programs is another important feature of Progressivism; this allows for adjustments based on individuals' needs and interests.

As a result, the development of ecological self and empathy aims to strengthen individuals' relationships with nature and foster sensitivity to environmental issues. These goals are directly related to Progressivism's individual-centred, experiential, and socially aware educational philosophy. Therefore, the philosophy of ecological education can be most strongly associated with Progressivism and can be grounded through this movement.

*3. Epistemological humility:* Epistemological humility allows individuals to recognize the limitations of their knowledge and understand the complexity of environmental issues (Glasser 2011:152). This approach is most closely associated with the educational philosophy of Reconstructionism. It is an educational understanding that prioritizes change and innovation in education to provide solutions to social and environmental issues. This movement advocates for individuals to develop critical and creative solutions to their problems (Orr 1994:218). Reconstructivism emphasizes the need to critique existing educational systems and to make these systems more just, sustainable, and effective. This educational philosophy encourages individuals to act with a sense of social responsibility and to develop sensitivity to environmental issues (Neal, Palmer 2003:94).

Epistemological humility helps individuals recognize their knowledge limits and adopt collaborative and innovative approaches to environmental challenges. Reconstructionism promotes integrating diverse fields like science, ethics, and economics to address crises holistically (Orr 1994:203). For example, combining

scientific data with ethical and economic insights enhances solution effectiveness. By fostering interdisciplinary collaboration and systems thinking, Reconstructionism nurtures a holistic understanding of environmental issues and equips individuals to apply adaptable, practical, and inclusive solutions.

In conclusion, epistemological humility enables individuals to acknowledge the limits of their knowledge while embracing the complexity of environmental issues, thus fostering critical and adaptable solutions to these challenges. This perspective aligns closely with Constructivism, an educational philosophy that places change, innovation, and learner-centred approaches at the heart of education. By emphasizing flexibility and creativity, a constructivist educational framework equips individuals with essential skills such as critical thinking, interdisciplinary analysis, and innovative problem-solving, which are crucial for addressing environmental crises. Furthermore, integrating epistemological humility as a foundational educational value encourages learners to adopt a reflective, collaborative, and open-minded approach. This enhances their capacity to navigate uncertainty inspires the development of sustainable and impactful solutions to complex global challenges (Neal, Palmer 2003:118).

*4. Real-Life Problems and Critical Thinking:* Naess suggests that students should focus on real-life ecological problems to develop critical thinking and problem-solving skills instead of relying on fixed answers. This approach helps individuals understand the complexity of environmental issues and create innovative solutions, turning them into active analytical people. It aligns with Progressivism, which emphasizes learning through real-world problem-solving rather than rote memorization. Rooted in pragmatism, Progressivism sees education as a way to prepare individuals to address everyday challenges (Dewey 2008:76).

In this regard, educational programs should include innovative approaches such as biomimicry, ecological design, and sustainable production models, allowing

students to develop creative projects in these areas. The progressive educational approach promotes active participation of individuals in the learning process and experiential learning. In this context, it is suggested that educational programs include projects that enable the development of innovative approaches to environmental issues by working on designs and solutions inspired by nature. Additionally, by providing students with information on the efficient use of resources and sustainable production processes, projects can be offered that allow them to transform this knowledge into practice. Group work and workshops that address real-life problems enable students to enhance their critical thinking skills, while projects that integrate knowledge from various disciplines such as environmental science, economics, technology, and ethics allow students to approach environmental issues with a holistic perspective.

*5. Integrating eco-social principles with lifestyles harmonious with nature:* This principle is most closely associated with the philosophy of Social Reconstructionism among educational philosophies. It is a movement that promotes an educational understanding aimed at achieving social change and social justice, encouraging individuals to live in harmony not only with human communities but also with nature. While focusing on social justice, equality, and sensitivity to social issues in education, social reconstructionism aims to help individuals develop sensitivity to environmental issues and strengthen their relationship with nature. Education based on eco-social principles encourages individuals to show social kindness and care not only towards human communities but also towards the non-human world (Glasser 2011:187). This approach supports individuals in adopting values such as social justice, ecological sustainability, and cultural diversity.

Social reconstructionism advocates for the reshaping of educational systems to ensure social justice; in this context, eco-social principles help individuals understand the connection between environmental sustainability and social justice. Naess's understanding of nature as a partner and source of inspiration enables

individuals to address ecological issues within the framework of social justice. Furthermore, social reconstructionism encourages individuals to actively engage with social issues and develop solutions to these problems. Educational programs should include practices such as community gardens, environmental protection projects, and ecological work based on social justice. These types of projects allow individuals to interact with nature and develop sensitivity to social issues while also raising awareness of social responsibility. Eco-social principles require the integration of different disciplines such as environmental science, sociology, economics, and ethics. Social reconstructionism advocates for including this interdisciplinary approach in education, aiming for individuals to analyze environmental issues by combining knowledge from various fields and to produce innovative solutions to these problems. Additionally, social reconstructionism prioritizes community-based approaches in education. Activities such as community gardens and environmental protection projects enable individuals to engage with their local communities and develop solutions tailored to the needs of these communities. Such activities strengthen individuals' relationships with nature and enhance awareness of social justice.

In conclusion, integrating lifestyles compatible with nature through eco-social principles strongly relates to Social Reconstructionism. This movement demonstrates how values such as social justice, ecological sustainability, and cultural diversity can be adopted by showing how activities like community gardens, environmental protection projects, and ecological work based on social justice can be applied in education.

## Conclusion

Environmental crises such as climate change, biodiversity loss, water pollution, and habitat destruction stem from a diminished recognition of the interconnectedness between humans and nature, compounded by the influence of Cartesian thought. By treating nature as a mechanical entity and positioning humans

as separate, Cartesian thinking has deepened environmental issues and eroded individuals' connection to the natural world. Ecological education offers a necessary counterpoint by fostering environmental awareness and driving societal transformation toward sustainability. This philosophy, grounded in Aldo Leopold's "Land Ethic," which views humans as part of a holistic ecosystem, and Edgar Morin's concepts of "one world" and "world citizen," emphasizes ethical responsibility and global sensitivity. Together, these ideas form the foundation of ecological education, equipping individuals to address environmental, social, and economic challenges.

Building on the principles of ecological education, the transformation of educational systems requires adopting an eco-centric (nature-centered) approach to replace the prevailing anthropocentric (human-centered) perspective. In this way, individuals can develop a more sensitive attitude toward environmental issues and cultivate an ethical responsibility to address these problems. Restructuring of educational systems in alignment with an ecological paradigm requires an interdisciplinary approach and local-global collaborations. Ecological education d combines different fields such, as science, technology, philosophy, and ethics to help individuals understand environmental issues, generate solutions, and make ethical decisions. Teaching methods should incorporate innovative and creative approaches to enrich ecological education. Activities such as nature experiences and environmental projects encourage individuals to establish emotional connections with their surroundings while enhancing their skills in addressing environmental challenges. These activities align with the foundations of ecological education philosophy, which rest on the following five points: (1) Overcoming human-centred thinking and creating an integrated understanding of education with nature, (2) Facilitating the development of ecological self and empathy, (3) Integrating epistemological humility into educational processes, (4) Focusing on real-life problems to cultivate critical thinking skills, and (5) Incorporating eco-social principles into lifestyles that are harmonious with nature into education. Together, these points represent the essential components of ecological education, equipping

individuals with environmental awareness and ethical responsibility, thus laying the groundwork for a sustainable society.

As a result, ecological education aims to raise environmentally conscious individuals, act with ethical values, and adopt a sustainable lifestyle. This transformation will not only contribute to solving environmental issues but will also enable the construction of a more just, equitable, and sustainable society. The restructuring of educational systems in this direction is critical for ensuring justice in both human and non-human worlds and for a sustainable future. Future generations will be able to live in harmony with nature and be raised as environmentally aware individuals through ecological education.

**Recommendations**

*Reconstructing the Curriculum with an Ecological Perspective:* Educational curricula should be reorganized in line with an ecological paradigm, free from the influences of Cartesian thinking. In this process, an interdisciplinary approach should be adopted, and environment-centred ethical values should be emphasized.

Nature *Experience and Practical Education:* Activities that allow students to interact directly with nature and practical education methods should be widely promoted. Such activities can strengthen individuals' emotional connections to the environment and enhance their environmental awareness.

*Local and Global Collaborations:* Local governments, non-governmental organizations, and international organizations should take an active role in ecological education projects and share best practice examples. These collaborations will support the widespread and effective implementation of ecological education.

*Increasing Educators' Ecological Awareness:* Special training programs should be organized to enhance the ecological awareness of teachers and educators.

Educators should guide students in developing their environmental consciousness by adopting ecological pedagogy.

*Supporting Policies and Investments:* Policies that support ecological education should be developed, and investments in this area should be increased. Cooperation among governments, the private sector, and civil society organizations is essential to achieve ecological transformation in educational systems. In conclusion, ecological education ensures that individuals are raised as environmentally conscious individuals who adopt a sustainable lifestyle and act with ethical values. This transformation not only contributes to solving environmental issues but also facilitates the construction of a more just and sustainable society. The restructuring of educational systems in this direction is critical for ensuring justice in both human and non-human worlds.

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