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Sustainability Education for the Future? Challenges and Implications for Education and Pedagogy in the 21st Century

Christina Marouli

Deree—The American College of Greece, 6 Gravias Street, GR-153 42 Aghia Paraskevi, Greece; cmarouli@acg.edu

Abstract: The crises societies face today contribute to a rather challenging life setting that demands in-depth reflection, daring new thinking, and change urgently. Transformative education for a sustainable future is needed today more than ever before; the aim of this paper is an exploration of its goal and pedagogy. By drawing on diverse bodies of knowledge, including the structure-agency debate and the theory of critical pedagogy, this paper critically discusses Education for Sustainable Development (ESD) and its goal of sustainable development. It identifies areas where ESD needs enhancement given the present socio-economic and cultural context and ultimately proposes the transformation of ESD to Education for Eco-communities—which highlights the need for community-centered approaches, knowledge, and observation of natural laws, sociological imagination, and political acumen—to render it better suited for the challenges of the 21st century.

Keywords: environmental education; education for sustainable development; sustainable development; critical pedagogy; eco-communities; education for eco-communities

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1. Introduction

Contemporary societies face many crises, amongst them an ecological, economic, cultural, and, most recently, a health crisis. These crises challenge the organization of our societies and our social practices, which we take for granted. A sense of risk and urgency predominates present times [1]. They are signaling that immediate changes in our societies are needed in order to avoid the worse consequences of these crises. However, social inequalities and environmental problems intertwine in an intricate web [2,3], leading to immensely complicated challenges, as well as disagreements about what needs to be done. As the implications of each one of these crises differ for different groups of people, the recent COVID-19 pandemic has very clearly highlighted how very interconnected humans (amongst ourselves) and the environment are, something also evident from the accumulated knowledge on natural ecosystems. The globalization of the economy and trade, tourism, mass media, cultural dreams (desired lifestyles), etc., has built on and deepened this global interconnectedness. Barry Commoner, in 1974 already, wrote:

> *Because the global ecosystem is a connected whole, in which nothing can be gained or lost and which is not subject to over-all improvement, anything extracted from it by human effort must be replaced. Payment of this price cannot be avoided; it can only be delayed. The present environmental crisis is a warning that we have delayed nearly too long. (p. 42) [4]*

Commoner highlights the need for humanity to change our relationship with nature. The present ecological and health crises—35 years after this statement—call humanity to reconsider fundamental ethical questions, our philosophy of life, and humans' position in the natural web, as well as to redesign societies in a way that is in harmony with and respectful of natural laws, order, and the inherent value of life, and although this is not new, the urgency is. Environmental Education (EE) and Education for Sustainable Development/Education for Sustainability (ESD) were introduced for this purpose. In the contemporary context and with the continuing environmental and social challenges,

there is a need to critically revisit and re-envision EE/ESD [5]. What should the goal and pedagogy of education for a future "good" society for all and in harmony with nature be? This article aims to contribute to such a revision of EE/ESD. It starts with a brief discussion of EE and ESD goals and pedagogy. Then, it critically discusses the goal of ESD, i.e., sustainable development, highlighting areas where amendments or more radical interpretations may be needed. It subsequently explores the implications of these insights for EE/ESD and concludes by proposing a new framework for environmental education for future societies, with the name Education for Eco-communities.

2. Methodological Reflections

This article adopts a multidisciplinary approach, learning from a variety of cultural worldviews, and the wedding of old and new—all of which are fundamental premises for the task contemporary societies are called to face: the daring envisioning of a "good" society for all and in harmony with nature. Thus, this article builds on scientific sources from diverse bodies of knowledge and disciplines (e.g., education, sociology, psychology, economic sciences, philosophy, environmental science, environmental justice), spanning time (from the classics to modern scientific references) and space (from the industrialized and the "developing" world). The aim is not to deeply analyze each one of them—this would be a feasible goal only for a book. Instead, it aims to first attempt a multidisciplinary discussion on how contemporary times point to the need for ESD to be adjusted to lead the way to environmentally friendly and socially caring communities and practices.

3. Education for Sustainable Development: Brief History and Basic Characteristics

This section starts by first discussing EE/ESD, its historic goal and pedagogy, and then reflects on its critique as prescription or indoctrination. This section concludes by highlighting the need to critically reflect on the purpose of ESD—sustainable development.

3.1. The Goal of EE/ESD

After the social recognition that industrialization has caused significant environmental problems, Environmental Education (EE) was proposed in the 1970s [6,7] as a main way to help humanity address environmental problems and change environmentally destructive behaviors and practices [8]. This was a recognition that scientific knowledge regarding ecosystems was important, but that cultural and social change was indispensable too [7]. The ultimate goal is environmental protection, but the way there requires "learning about ourselves and nature within the central learning objective of how to understand and ultimately transform our species' foundational and ineliminable relationship with the nonhuman world [5].

Its descendant, Education for Sustainable Development (ESD or EfS), building on the lessons from EE initiatives (i.e., that there are intricate and indissoluble connections between environmental problems and social practices), modified—enhanced?—the goal of this education. ESD aims to incite the transition to sustainable societies—in balance with nature, with social justice, and economic viability [9,10]. The United Nations Belgrade Charter [11] states: "Environmental education should emphasize active participation in preventing and solving environmental problems". Some advocate that ESD is more action-oriented than EE [12]. Others see ESD as more prescriptive, or as reflecting the needs and realities of Western mainstream societies while overlooking power inequalities, or being oblivious to other less influential–peripheral–societies or groups [13–16]. In any case, a main goal of EE and ESD is a social and individual change that can lead to environmental protection and a harmonious and long-lasting relationship of human societies with nature. There is an urgency for more radical changes in societies and the economy, as the Fourth International Environmental Education Conference, in Ahmedabad, India, recognized:

> *"We no longer need recommendations for incremental change; we need recommendations that help alter our economic and production systems, and ways of living radically". (p. 4) [17]*

3.2. The Pedagogy of EE/ESD

EE and ESD proposed an alternative pedagogy too, in line with the constructivist tradition in education, where students participate in the creation of knowledge, in interactive learning environments, and addressing real environmental problems [18–20]. EE/ESD advocates interdisciplinary approaches, problem-solving, the instructor as the organizer of the learning context and facilitator of learning, constructivist learning spaces, learning in collaboration with the community, and action research [21]. EE/ESD learning contexts aim to facilitate knowledge creation, involve emotion, and motivate learners to act for the environment. The heuristic of education *on* (knowledge), *in* (emotive learning) or *for* the environment, just societies, and viable economies (action) are useful in this respect [20,22]. It highlights the significance of holistic approaches to learning, involving knowledge, but also emotion and a purpose. EE/ESD aims to promote transformative learning—learning for individual and social change, through problem-solving and reflective environments, and to develop the pedagogical methods and tools for critical thinking and action.

3.3. ESD and the Danger of Indoctrination

Both EE and ESD are forms of education that are openly committed to a cause and to transformative action [6,7,17,23]. For this, they have been criticized by some. Wolff (2011) [24] states:

> *It is not self-evident that it is necessarily right to try to purposefully change another person's behavior, no matter how urgent the purpose might appear. Both teachers and researchers have to be aware of that they might have to make a choice between self-determination and indoctrination. (p. 99)*

This is an important caveat that needs consideration. However, the educational system has traditionally been "an arm of society" aiming to prepare individuals for a specific society and to maintain the existing social order. As Donzelot [25] indicated, widespread schooling started with the intention to remove poor children from the streets, where they were educated in social disorder and illegality, and to render them useful citizens. In contemporary (at least western) societies, education is increasingly conceived as preparation for the job market and the equipping of students with skills that are fundamental and useful for their success in the global market economy [26,27]. Thus, molding (i.e., akin to changing) minds and behaviors has been an important underlying—even if indirect—aim of the educational system. This market-oriented form of education, which tends to take over from the tradition of the Liberal Arts in our societies, if questioned, is generally not criticized as indoctrination but rather as limited and instrumentalist.

However, as Liberal Arts education advocates indicate, breadth of knowledge and education in ethics and social sciences are needed for critical thinking and deeper understanding [28,29]. Furthermore, creative minds need philosophical and social acumen aside from specialized or technical expertise [30], as well as educational institutions that exemplify this virtue [31]. So, in the same line of thought, EE/ESD per se, which is dedicated to a cause but also requires interdisciplinary approaches, poses ethical questions regarding contemporary socio-economic practices, aims to develop skills for learners to be able to envision and act for a different sustainable social order, cannot be equated to indoctrination. What can make it indoctrination is the uncritical acceptance of its goal—the concept of sustainable development—and the way of teaching (the pedagogy) if it does not cultivate critical thinking.

After this brief introduction of the history and basic characteristics of EE/ESD, the next section will start by critically discussing sustainable development, the goal of ESD, before conclusions are drawn regarding what kind of education is needed for the 21st century where complicated problems, crises, and urgency prevail.

4. Revisiting Sustainable Development, the Goal of ESD

Sustainable development was introduced in the Brundtland report in 1987 as an effort to unite all nations around a common vision for future societies, societies that are in

harmony with nature. It was introduced in response to two realizations. Firstly, that modern economic activity (i.e., industrialization, the acceleration of production, private property) and lifestyles and social practices, especially those of Western societies which have now been spread throughout planet Earth via globalization, have led to many and significant environmental problems; and, secondly, that you cannot effectively address environmental problems alone; you need to look at the nexus of environment–economy–society and culture. Thus, analyses for sustainable development and ESD require integrated approaches connecting ecological, social, and economic aspects. This emphasis on integration and interdisciplinarity has led to varied interpretations of sustainable development, varying for example from soft to hard sustainability. In the process, it has provided leverage for varied interpretations, e.g., sustainable development versus sustainability; weak to strong sustainability [32–34], some allowing the maintenance of the socio-economic status quo with the simultaneous ignorance of natural laws or the assumption that they can be overcome by science and technology. We thus need to revisit the concept of sustainable development or sustainability—the goal of ESD—in light of the natural laws.

4.1. The Context of Human Societies: The Natural Laws

Natural laws cannot be overlooked. They are briefly discussed below (please see Miller, 2016, for a more extensive discussion [35]) with the intention to clarify the natural context in which human societies exist and to which they need to adapt.

Firstly, the sustainable development vision has been interpreted by many as a way to maintain continuous economic growth (i.e., development as growth) and increasing consumption patterns on the one hand and healthy ecosystems on the other, at the same time. This is at least a very tenuous—if at all possible—relation. *Natural resources are limited*; they simply flow through ecosystems via different ecological processes. Technology can help humans use resources more efficiently and thus extend their use in terms of time, but it cannot extend the natural limits themselves.

Secondly, some technology lovers advocate that we may go to another planet or we can send waste to space, etc., thus surpassing the limits of the Earth. However, they ignore a second natural law: *everything in the universe is interconnected*. Biodiversity—the existence of diverse species—contributes to the control of populations, keeping them within the carrying capacity of an ecosystem as well as to the resilience of ecosystems. The biotic and abiotic elements of ecosystems are in continuous dynamic interaction, forming an intricate web of life. Dumping wastes into the ocean or transporting them to space may render them invisible to us but they do not disappear. Their immediate impacts may be felt somewhere else or by other species first, but ultimately, they return to us too (e.g., microplastics are now found in the whole food chain, in the air and water resources; and we intake all of those). As our knowledge of ecosystems, despite the great advances in the relevant sciences, still remains incomplete, the precautionary principle in policymaking is a good guide in this respect.

Thirdly, *all life needs energy, and this comes from the Sun.* Without it, there would be no life as we know it on Earth. This energy is transformed into different forms (e.g., chemical energy in food through photosynthesis; kinetic energy from chemical energy in foodstuffs), each time releasing some waste heat as well. Using chemical energy stored in the matter (like fossil fuels or foodstuffs) inevitably releases chemicals too as emissions (e.g., carbon dioxide) since matter cycles. The laws of thermodynamics and of conservation of matter should guide our choices regarding energy use.

Finally, *humans constitute one of the many members of the web of life*, the intricately interconnected and complex ecosystems of the Earth. Different species offer different services, performing important processes for the ecosystem, and all need each other to survive and live well; none is more significant than others or can control nature. Human technologies have seriously impacted natural ecosystems. Hubert Reeves [36], talking about the story of human intelligence (i.e., development of science and technology), argued that this intelligence will also lead to the demise of the human race if we do not use it

wisely. The human race may be at the top of the food chain and may have noteworthy intelligence, but this should be used to make us fitter—i.e., more capable of adapting—to a changing environment.

Since natural ecosystems do not adapt to human habits and desires, societies, economies, individual actions, and social practices need to be adjusted to observe natural laws.

4.2. Reflections on Sustainable Development, the Goal of ESD

Sustainable development was introduced with the purpose to propose a widely agreed vision for future societies in harmonious coexistence with nature and other species; a great political deed to achieve such a wide consensus on such a challenging topic. The proposed vision for sustainable development has been analyzed into pieces for action with the United Nations Sustainable Development Goals (UN SDGs) [37]. UN SDGs imply that sustainable development aims to continued economic growth and fewer socio-political inequalities and conflicts, in balance with nature; calls for alternative individual actions; and capitalizes on science and expertise for assistance in this transition. However, now in these times of crises and urgency, we need to reflect on sustainable development critically and daringly, in our case with the aim to make ESD more effective.

Although sustainable development talks about the eradication of poverty and hunger as well as good quality of life for all, it avoids questioning the viability of the capitalist economy within natural limits, rhythms, and laws; it rather assumes that continuous economic growth is a desirable goal [38–40]. Marcuse with his treatise on the "one-dimensional man" [41]—individuals with an economistic logic and a technological rationality—analyzed and criticized modern societies. Contemporary societies need a more humane and compassionate worldview; humans need to move away from the "one-dimensional men" to the practical philosophers or philosophizing active agents of the future. Considering the existence of limits in natural ecosystems, a more daring questioning of our economic system and our devotion to economic growth is required.

We also need to reconsider the overwhelming emphasis on scientific and technological innovation as the vehicle for the transition to sustainable societies while maintaining the standard of living the Western societies have achieved for an increasing human population. Is it possible that science and technology (i.e., fragmented in-depth knowledge of a specific part of nature, specific questions with assumed "ceteris paribus" for the other parameters) will push the limits without harming the ecosystem that supports us, given its intricately interlinked web of life? Garrett De Bell, as quoted in VandenBroeck (1978) [42] proposed in 1970 to "replace the outmoded industrial imperative—the 'standard of living' concept—by the more human 'quality of life' concept" (p. 158). Thus, he highlighted the need for a shift in the predominant value system from an economistic and technological to a more humane worldview.

A reconnection of economic efficiency with emotions and spirituality and a new meaning of life and a new philosophy for the relation of humans with nature are called for. Marinof [43] points out how the meaning of life is fundamental for an individual's happiness and fulfillment and proposes this philosophical search as a solution to people's everyday problems. He quotes Pierre Hadot's observation for philosophy in contemporary societies as follows:

> *"Ancient philosophy proposed to humanity an art of living. In contrast, modern philosophy appears above all as a construct of technical terminology intended only for experts". (p. 91) [43]*

As Hadot indicates, contemporary societies' emphasis on expertise and technical approaches to knowledge and life are not sufficient for the art of living; philosophical approaches to living are needed. Frankl [44] indicated that what motivates people is the "will to meaning". A new meaning of life, a new vision of the "good" society, is now needed.

Sustainable development and ESD have often targeted individuals as the main way towards sustainable societies. However, this approach also deflects from the need for

collective and political action. As Hume and Barry [5] argue, this individualized view "also lends itself to a serious dilution of a necessary politicized approach to learning and acting about current unsustainability and the transition to resilience and sustainability". In this highly interconnected web of life, a more collective and community-centered questioning of the taken-for-granted social practices is a prerequisite for the transition to sustainable societies. This correlates with the need for renewed valuation and respect for all forms of knowledge.

In our knowledge societies of today, science, technology, and economic expertise (i.e., fragmented, disciplinary knowledge; certified knowledge) is prioritized and influences decision-making processes more than any other form of knowledge. Lay and uncertified knowledge acquired in contact with nature and life, which is generally more integrated (involving mind-emotion-body) is considered irrelevant or at best, a source of information for scientists who will then make it "valuable" scientific knowledge (e.g., indigenous knowledge of their land and nature [45]). As Commoner [4] states, however, *"public knowledge* [sic] is essential to the solution of every environmental problem. For these depend not only on scientific data but ultimately on a public judgment which balances the benefits to be gained from a particular technology against the associated environmental hazards". (pp. 191–192). Public knowledge allows the incorporation of ethical judgments with scientific knowledge, while comparisons of different types of knowledge (of different peoples too) may facilitate more holistic understandings of reality and more creative approaches.

Although sustainable development talks about the good quality of life for all, referring to inclusive societies, it shuns away from critically reflecting on the distribution of power in contemporary societies, the uneven influence of rich countries and of multinational corporations on international decision making, the silencing of alternative visions for future societies that originate from poorer and less powerful nations/social groups (e.g., happy societies, collective decision, and education in the Brazilian indigenous communities) [2,3,13–15]. In contemporary societies where globalization of the economy, the media, tourism, and culture has expanded in all the world, sustainable development is presented as a vision appropriate for all societies on Earth, without reflection about who conceived the vision and whose reality it reflects. Grigorov and Fleuri [46] criticize sustainable development as a "commercial" concept

> *"that brings with itself the universalization of western cultural paradigm and its colonial legacy . . . . Doesn't sustainable development seem more like commercial social brainwashing than critical problematization, conscientization, and taking conscious environmental and social justice actions?". (p. 447)*

Even though one may find this phrasing problematic, it highlights the need for reflection on the cultural underpinnings of this concept, as well as the value of diverse viewpoints, worldviews, and practices that can provide "new" ideas for more sustainable, environmentally friendly, and good-for-all societies.

4.3. Implications for Education for Sustainable Development

As discussed in the previous section, present times and crises call for a reconsideration of the goal of ESD—i.e., the concept of sustainable development—including a reconsideration of economic growth as a goal in light of the recognition of natural limits; an analysis and change of power dynamics; a new emphasis on quality of life (involving also emotions and spirituality, aside of efficient use of resources); and a direction towards communities rather than individuals. Thus, changes in the predominant worldview and social practices are needed. The role of education in this process is fundamental, not only in terms of the type of knowledge that needs to be discovered and created (e.g., learning about the way ecosystems work and about humans' position in them constitutes fundamental knowledge for all) but also in terms of the critical and creative thinkers and caring and active citizens it needs to promote. Education has an important role to play: to inform humanity's philosophical and ethical choices that guide the organization of human societies and their relationship with nature. However, in order to build on the creativity of human minds and

to avoid indoctrination, education ought to provide fora for the discovery of knowledge, real community problem solving and the consideration of new ethical choices in dialogic learning contexts and in contact with nature.

As environmental issues are the consequence of the relation of human societies with nature, systemic thinking and sociological imagination [47] are fundamental: such analytical thinking that allows us to clearly see the connections between individual problems and social issues; between agency, social structures, and environmental-spatial dimensions; and between the logic of the global capitalist economy, social and power inequalities and environmental degradation (see [48] as an example). Sociological imagination (i.e., the ability to connect individual problems with public issues) is essential for critical thinking, which is a prerequisite for social change but also for the design of effective policies, strategies, and actions towards sharing/caring/just societies in harmony with nature.

In a similar fashion, some have criticized ESD for a "tendency to view the student as an individual actor" [49]. This emphasis on individuals undermines a sense of community responsibility and collective action, while it deflects from socio-economic and political approaches to environmental problems [5]. Thus, collaborative learning and teaching practices and community responsibility are needed directions in the education for future sustainable societies in order to challenge individualism and promote community-centered approaches.

Furthermore, ESD, as it aims to contribute to the transition towards "good" future societies, is called to make power a central theme. Bookchin [50] advocates that hierarchies and power inequalities in human societies are the foundations for the domination of nature; thus, both need to change. Education should help learners understand contemporary political regimes (asking who, how, why questions) which have become rather intricate and opaque with globalization. Active citizens require political acumen so that they can become constructive philosopher-agents of change that can effectively contribute to the envisioning, design, and building of the "good" societies of tomorrow: in harmony with nature, just for all, with vibrant communities and economic activity for the common good.

Technology and science can help in this respect, as well as in the more efficient use of resources. However, they are only tools and methods towards selected goals [50]: to address selected questions of interest. Yet, the choice of certain goals and questions over others is a normative activity reflecting the value-system of those making decisions and the prevailing culture. As Theodore Roszak said, "There are no technical answers to ethical questions". (quoted in VandenBroeck, p. 87) [42] Should we change the genes (of mice and later humans) to elongate human life or to control a disease? Should we live longer? Such questions are not scientific, technical, or measurable; they are philosophical and ethical questions, focusing on the meaning of good life, the meaning of human nature, the meaning of science and technology. Consequently, given the powerful scientific and technological developments and the incorporation of technology in practically every aspect of life—in Western societies and increasingly worldwide—, education's role is to help learners develop a critical understanding and familiarity with these technologies. This implies that learners can use technologies for the common good and reject their use where necessary, in line with their meaning of life and wellbeing; not complacently accepting the premises and logic that the market economy promotes as the standard for all and every aspect of life. 'Appropriate technologies'—technologies at human scale—is a term used by many to refer to simple and sustainable technological means that can achieve a given aim with social justice and human dignity as the ultimate goals [51].

So, ultimately ESD is called to become more philosophical and less technical; incorporating scientific knowledge about nature/ecosystems and technology but also asking critical questions about society, economy, and politics; for an informed quest of meaning and "good" actions for the community; and starting from contact with nature and the social reality for the mobilization of emotive and kinesthetic learning. Kahn [52] introduces the term ecopedagogy and argues:

> *Ecopedagogues hope to utilize education for sustainable development to make strategic interventions on behalf of the oppressed, but ecopedagogy also attempts to generate conscientization upon the concept of sustainable development proper and thereby uncloak it of the sort of ambiguity that presently allows neoliberal economic planners in either their aggressively imperialist or Third Way economic/political variants to autocratically modernize the world despite the well-known consequential socio-cultural and ecological costs.*
>
> *. . . . [E]copedagogy seeks to develop at least three varieties of ecoliteracy throughout society in the name of a more just, democratic and sustainable planetary civilization: the technical/functional, the cultural, and the critical. (p. 9)*

The technical/functional ecoliteracy he is referring to is the practically called "environmental literacy". This includes place-based ecoliteracy, which connects with the next form of ecoliteracy: the cultural one. Cultural ecoliteracy produces multicultural knowledge regarding the way diverse cultures relate to nature and understand natural order. Finally, critical ecoliteracy reveals relations of power and politics. Thus, we can infer that Kahn envisions environmental knowledge, multicultural sensibilities, and critical understanding of power dynamics as the main elements of an ESD for the future, which he calls ecopedagogy.

Ibáñez, Cid, Muñoz, and Claros [53] state: "The time to give environmental education importance is now. An education with an adequate planning and the social purpose of finding a better connection with nature and the rest of human beings" (p. 18). EE/ESD has been useful as a vehicle for more environmentally-friendly action so far; however, now in these times of crises and urgency, we need to critically and daringly reflect on its goal, sustainable development. According to Ibáñez, et al. [53], "In the end, students demand an education . . . focused on the environment to encourage responsibility among its members, in a context where social relations and solidarity among human beings prevail" (p. 19). Thus, ESD is called to assist in its own renewal and come up with a new vision for future societies and the education for the future—a very challenging (if not impossible) task.

5. Education and Change

How can education change when the educational system is also a major "tool" of society for its reproduction? Is this hopeless? This section will explore this challenge, as well as discuss insights from critical pedagogy regarding how educational change can take place starting from the "classroom".

5.1. Structure and Agency

Education is both a system and an educational praxis—the teaching and learning context. As Giddens has indicated, structures significantly influence individuals and their activities, but individuals through their choices and actions change the meaning of social structures and practices. Maybe the laws constitute a good example: their formulation is one thing, their implementation is yet another that frequently does not resemble the laws themselves [54]. Morphogenesis is another theory also advocating the interplay of structures and agency (individual and collective) in the making of social reality; structures are constructed and reconstructed by people every day [55]. These two theories, as they acknowledge the conservative strength of structures, also indicate how structures themselves change—even in minute ways—every day due to individuals' choices and actions.

The social practice theory—starting from the agency perspective—indicates that our aim should not be the individual behaviors per se, but rather social practices. "SPT (Social Practice Theory) posits that the world is populated by social practices and their interconnected elements. Human behavior is not the result of rational choice but of the many half-conscious and highly routinized actions people take in their everyday life" (p. 4) [56]. The concept of social practices highlights the socio-cultural influences on individual behaviors, while it also acknowledges the influence of individuals on societies. Social practices are compounds of meanings, skills, and technologies. I would add the

physical space as yet another important element of social practices. Thus, altering one of these elements will lead to changes in the practices themselves. For example, changing the meaning and goal of education, or the skills targeted in a class, or the technologies used can change the educational praxis. However, some social practices interrelate with others, forming compounds or systems of practice, that often have socially shared knowledge, meaning, skills and technology; thus, making them more difficult to change. Taking this into account this theory proposes that change can occur if you alter one or more of the elements of social practices, if you disconnect a practice from the system of practice in which it is found, or if you replace an old practice with a new one. This approach gives us some ideas as to how changes in education—praxis and system—can occur from below.

These theories and insights provide a handle as to how social practices, behaviors, and education can change. Education, like any structure, is resistant to change and it surely influences the praxis of teaching and learning. However, education is also constructed on a daily basis by its practitioners—instructors and learners—and their practices. Educational practices can change when educators reflect on and alter their meaning of education, or when learners demand another approach to learning; or when educators are given the skills to reconceive and redesign their educational praxis (e.g., changes in the training of educators); or when changes are introduced in the actual learning environment (e.g., teaching outside the classroom, inside nature or the community) or even in the technologies used. We can get a glimpse of that with the COVID-19 health crisis which has changed the means—technologies—that are used in instruction; the complete dependence on virtual lessons has impacted the educational system and its operation, teaching and learning practices, the instructors, and the learners themselves.

Thus, change in education is possible. ESD has contributed insights in this direction. Change will probably not start from the structural level unless a charismatic leader appears. Crises are potential moments of awakenings. So, this period with all its concomitant global crises—i.e., ecological, climate, economic, COVID health crisis—may lead to a revision in the educational system. Aside from the adoption of more technological approaches to education, it may also create a more fertile ground for the incorporation of education for the environment and health in the mainstream educational curricula. Surely, it has pushed policymakers deciding on COVID lockdowns and other stakeholders in education and society at large (e.g., teachers, students, and parents) to acknowledge and reveal the multiple meanings and values of education—i.e., schools as taking care of children while parents work/perform economic activities; schools as places where children and youth get together and have social interaction and its relationship with the society and economy (e.g., working parents cannot attend to their children staying at home; schools as a facilitator for economic activity). However, education also changes from below through the daily practices of critical educators, democratic classrooms, or alternative teaching and learning methods that aim to develop critical learners, and critical or empowered citizens. Marouli et al. [57–59] offer an analysis of this distinction and a heuristic for the planning of the aims of an educational praxis, their implications for the pedagogical methods, and the means/tools to be used for the related goals. "Communities of practice" [60] of critical educators help in enhancing alternative teaching/learning ideas and methods, multiplying the effect, and supporting individual instructors from burnout. A change in the training of educators to include lessons from critical pedagogy would surely help too as it would increase their skills for social change through education.

5.2. Critical Pedagogy—Insights Regarding Education for Social Change

Critical pedagogy has many insights to contribute in an effort to render education more effective in its goal to help contemporary societies transition towards sustainable ones. This section will highlight some of the main and most useful ones for this discussion.

Critical pedagogy [61] started in Latin America with the intention to empower socially marginalized people to alter their socio-political reality, and as such, it has contributed significant insights about a pedagogy for social change—the desired outcome of ESD or

eco-critical pedagogy. Vygotsky's [62] conception of learning as a dialectic interaction of the learners with others and their social context, mediated by cultural objects and tools reiterates our previous statement and highlights the relational character of learning. The teaching-learning praxis involves educators/learners, relations, the educational context (material and intangible), pedagogical methods, and media/tools—all in critical interaction. Freire and critical pedagogues highlight the political dimension of education—i.e., its significance in maintaining the present social order and keeping oppressed people in their social place, at the same time revealing its capacity to promote a different social order if it changes its practices.

Freire [61], with his concept of "organic intellectuals", and Giroux [63], with his "public intellectuals", highlighted the significance of enlightened educators as agents of social change, since they help learners develop a critical consciousness and organize the pedagogical praxis for social transformation. They are responsible for creating stimulating, thought-provoking, dialogic, and participatory learning environments that entice learners to learn and prepare them for socially transformative action. Educators should not aim to transmit knowledge but to create learning spaces where the instructor(s) and learners co-create knowledge.

When the educational content—the knowledge to be shared and created—is connected with the learners' own knowledge and reality, learning becomes relevant and useful [64]. This way, there is a better chance that the new learning will also inform new forms of action, new behaviors, and social practices. Holistic approaches to a topic, challenging disciplinary boundaries, fragmented knowledge, and expertise, lead to enhanced knowledge as they also trigger critical thinking.

Learning takes place in a context and in relation to other people and other tools—nowadays, increasingly internet and digital media. Relations involve emotions and politics. Loving and respectful learning environments, welcoming diversity, are essential for critical learning to occur and creative thinkers to develop—learners that are willing to explore, make mistakes, and subsequently act to generate societies respectful of diversity [65]. Respect also implies more egalitarian politics. For more just and democratic societies, learning contexts should change to more dialogic spaces, with the instructor facilitating critical reflection with proper questions (who, why, how) and mobilizing compassion. Collaborative teaching and learning practices [66], including group activities, are beneficial as they cultivate collective responsibility, promote the logic of collective learning—learning from each other and with each other while mobilizing emotions—and challenge each other to balance power in the group for the achievement of a common goal (learning practical political skills). In Western educational systems, which target individual learners and individual learning generally in a competitive manner, group learning activities are challenging, and collective learning is undermined by the grading and assessment system. Brazilian indigenous people (Guarani) organize their education as a collective affair and knowledge are constituted through community dialogue, rather than individual processes and formal research [46]. They conceive education as a collective reflective activity, performed in a public space where the participants partake in a dialogic process for knowledge creation. The western system is appropriate for standardization and certification of knowledge, which is useful to the market, efficiency, and expertise. The Brazilian indigenous approach cultivates a collective awareness which is fundamental for sustainable societies.

Education should aim to empower learners to act for the common good and not harm anyone. Although the "good" may be difficult to determine, not harming anyone—suggested by Confucius too—is a pragmatic guide for the desired action [43]. For the empowerment of learners for action, learning associated with real-life contexts and real problem solving, outside the boundaries of the classroom and often in collaboration with the community is helpful [67]. Action research and participatory learning have been used in this respect. Such learning environments teach relevant knowledge, involve emotions and continuous reflection, familiarize politics, and mobilize the body for active citizenry. Mobilizing the body in learning is particularly important in our "societies of

the spectacle" [68], where we are socialized from a very young age to passively watch life events but not participate to influence their course.

However, problem-solving alone can be disempowering if learning does not cultivate hope. Marcuse indicated that hope is a prerequisite for action [69,70]. These times of crisis and fear, hope is much needed. Thus, the educators' role in inspiring hope in learners and enthusiasm about the subject matter and life is pivotal. Additionally, intellectual problem solving—disembodied learning—may hinder social action. Mobilizing the body in learning—or somatic pedagogies [71]—seems even more important in the contemporary digital age where space and time are challenged, rendering the body without reference points, both sedentary and uninvolved. Experiential learning provides a context for the involvement of the body (e.g., fieldwork, laboratory experiments, community problem solving).

In contemporary urbanized societies, with the increased distance from the natural environment and other species, contact with nature is fundamental and instructive [72]. It mobilizes wonder and thus interest in new knowledge. Experiential learning in the community and ecosystems, like fieldwork and action research, is a pedagogy that can simultaneously stimulate the whole learner—mind, body, emotion, and spirit—as does real life. If—as is usually the case—experiential learning activities are done in groups, learning becomes a collective enterprise, collective responsibility, and collective joy (or disappointment), teaching the learners the significance of the community as well as the challenges of community building.

Digital technologies have become an important part of education, and they indeed have many benefits. They provide access to a huge set of information and a variety of bodies of knowledge, while they facilitate contact across space and time. However, they are tools that should be used with a very clear vision, purpose, and plan for the desired outcomes. Technologies should be used and designed for a world where people come first [73] and without harm to nature or others.

In the next section, following the aforementioned discussion, a new framework is proposed, entitled Education for Eco-communities, as an enhancement of ESD.

6. Education for Eco-Communities

Building on the arguments developed in the previous sections, I argue that the present context of crises, urgency, differently understood sustainable development, knowledge society, and individualism calls for a greater emphasis on the philosophical role of education [31], which should be made practical through its "marriage" with socio-political analysis [52,61,63,74]. Philosophical reflection ought to be at the core of education in the 21st century, making classes democratic and active for a discussion of the meaning and purpose of life, technology, science, nature, power, economy, and human nature. I propose a change in the name of ESD to free it from the Western vision of sustainable development—an anthropocentric and instrumental viewpoint [13,15]—as well as from its connection with development which is interpreted as economic growth in the predominant worldview, or with the more generic term sustainability which has been used for many partial approaches that serve ultimately unsustainable goals. Education for Eco-communities may be used in order to underline the significance for an enhanced vision for the future, based on a community-centered (rather than individual-centered) approach; to highlight the significance of the knowledge of the environment and its centrality for the design of human societies; the significance of a critical understanding of culture, power and economy and the relation of human societies with nature; and the respect and openness to alternative worldviews and cultures (also very useful as sources for a new vision)—together, implying a critical, systemic and multidisciplinary/holistic approach.

The basic characteristics of Education for Eco-communities, the proposed framework for the future enhancement of EE/ESD, are schematically represented in Figure 1 below.

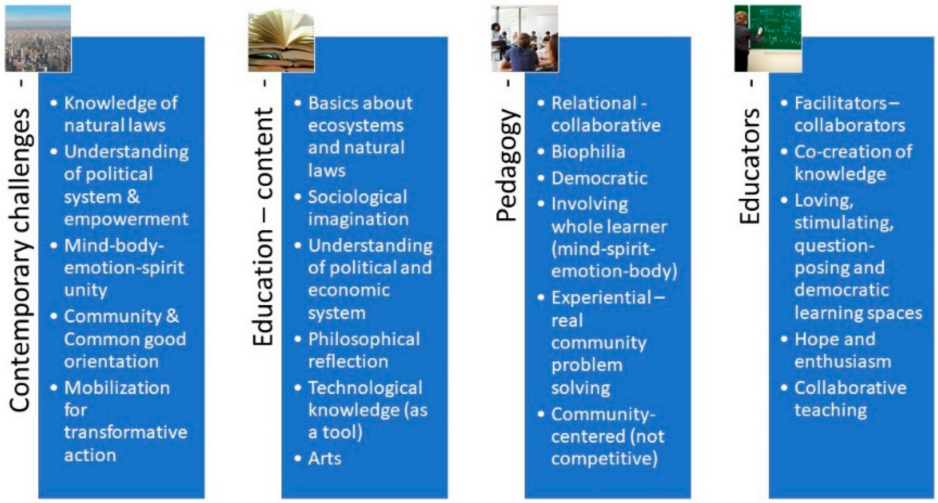

Figure 1. Education for Eco-communities.

The main highlights of the figure above are:

- Learning is relational and creative thinking flourishes in loving and respectful learning environments for all [65].
- Learning should take place in dialogical and democratic learning environments that can promote critical thinking and empowerment as learners and citizens [61]. Digital technologies should be used only in ways and to the degree that they serve this purpose [72].
- The content of the curriculum should include knowledge of the environment and a systemic understanding of politics—organization of power in society—while re-igniting sociological imagination [73].
- Learning should address the whole learner—mind, body, emotion, and spirit [64,69–71]—in order to enhance the possibilities for learners to become active, caring, and empowered citizens. Contact with nature stimulates interest and wonder [64]. Mobilizing the body in learning is also fundamental in contemporary societies of the spectacle and the digital age.
- Experiential learning and action research, especially outside the classroom, are good pedagogical approaches as they connect the educational context with the community and nature [64,74], learn close to nature and the environment, providing them with a full learning experience involving the whole learner, and exposing them to knowledge of politics through real-life experiences.
- Educational environments need to be redesigned to promote collective—rather than individual and competitive—learning through community-based learning approaches and group assessments.
- The educators' role in learning is pivotal [61,63] and involves amongst others, establishing loving, stimulating, question-posing learning spaces, and providing the learners with hope. Hope is particularly important in this age of crises and globalization.

In addition, it is noted that ideally the Education for Eco-communities should not be included as an additional topic in a curriculum that otherwise continues to teach individualism, competitiveness with others, distinctions, and disciplinary boundaries, lack of awareness of the natural laws, lack of knowledge and interest in the socio-political inequalities, or passivity. It should rather incite educational institutions to revisit their goals and hopefully trigger them to become more virtuous and environmentally sustainable institutions [31,74]. Its spirit and logic should inform all education so that all forces come together for a constructive dialog on the vision of a desirable future; for better and quicker results in these times of crises and urgency.

7. Concluding Remarks

Concluding, I propose that at these times of crises, globalization, and urgency, when humanity needs a clearer and more daring vision for the future, pedagogy today should involve the community of learners in the creation of a new philosophy of life; should promote holistic learning, involving the mind, emotions, the spirit, and the body; and should respect and build on cultural diversity. It should aim to prepare learners for a community-centered and interconnected world; learners with political acumen and sociological imagination (identifying not obvious connections between different parts of societies, between the individuals and the community, between human societies and natural ecosystems); learners who are armed with hope and enthusiasm and who are philosopher-activists, active citizens with a vision for the common good. It is useful to reconsider the name of this pedagogy in order to free it from the history and shortcomings of sustainable development. I propose "Education for Eco-communities" as more appropriate for the challenges of present societies.

As a last remark, it is acknowledged that structural changes are challenging. However, difficult as it may be for education to change as a structure, there is hope that education as a social practice can change from below, and this can incite other changes that cannot be planned or predicted. The present crises and sense of urgency are destabilizing factors that may facilitate educational changes from above as well. In any case, we—individuals—are called to become philosopher-activists working for a good life for all.

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