



Consciousness and Environmental Education: Transdisciplinary Urgencies from the Post-Pandemic Context

Samuel Lopes Pinheiro¹ and Florent Pasquier²

¹Phd in Environmental Education PPGEA FURG. Brazil. Member of CIRET (Centre International de Recherches et Etudes Transdisciplinaires) France and CETRANS (Centro de Educação Transdisciplinar) in Brazil.

²Sorbonne University, Paris, France. President of CIRET (Centre International de Recherches et Etudes Transdisciplinaires). Laboratory COSTECH UTC.

Correspondance: samuelshankara@gmail.com

Received 31 October, 2022; **Revised** 2 January, 2023; **Accepted** 13 January, 2023

Available online 14 January, 2023 at www.atlas-tjes.org, doi: 10.22545/2023/00223

Abstract: *This paper presents reflections on the fundamentals of Environmental Education when dealing with the urgency of learning the lessons from the pandemic crisis period of the Coronavirus. For this, from a transdisciplinary approach, crossing and seeking to go beyond different disciplines, some of the challenges that were intensified with the pandemic are contextualized, with the support of authors from sociology (Boaventura de Sousa Santos) and philosophy (Edgar Morin), in dialogue with authors who discuss in the field of education (Balduino Andreola; Paulo Freire), as well as the inspiration of literature (Ernesto Sabato). As a convergence point of the reflections, there is the investigative treatment about the concept of consciousness in different perspectives and how we can articulate criticality and transdisciplinarity the urgencies in learning process on Environmental Education. Among these socio-environmental urgencies that appear is the need to pedagogically approach the complexity of the concept of life and the inequalities that mark the pandemic period.*

Keywords: Conscience, fundamentals of environmental Education, pandemic, urgency, transdisciplinarity.

1 Urgencies from Pandemic Period and its Connections with Environmental Education

”There are certain days when I wake up with a demented hope, moments when I feel that the possibilities of a more human life are within reach. Today is one of those days. And so I set to writing, almost groping in the early hours of the morning, with urgency, like someone going out into the street to ask for help when there is a threat of fire, or like a ship that, on the verge of sinking, is sending a last, fervent signal to a port that it knows is close by but is deafened by the noise of the city and the multitude of signs that confuse the eye. I urge you to stop and think about the greatness we can still claim if we dare to evaluate life differently” [1].

Ernesto Sabato

The reader will notice that we have started this text based on the literature of the Argentinean artist Ernesto Sabato (1911-2011). With this, we signalize in some way about the method of this reflection, which openly dialogues with authors of sociology, philosophy, education, and literature, in the common process of seeking references on the issue of consciousness and urgency and how we will deal with this in Environmental Education and its foundations.

The urgency described by Sabato gained other layers of interpretation from the pandemic context triggered by the Coronavirus, Sars-COV-2. That feeling of “going out into the street to ask for help when there is a threat of fire” with hopeful strength moved by the urgency of the situation, has not been possible at various moments on the planet since then. On the contrary, we had the measures of movement restrictions, the confinement scenario, and the so-called lockdowns, with their intensities in greater or lesser degrees according to the actions of the different national states to face the pandemic crisis.

With those restrictions, we no longer went to the streets willing to solve several urgencies. Not because the various fires miraculously stopped overnight - on the contrary, some of them, such as in Brazil, the forest fires, for deforestation and the advance of extractivism and for monoculture plantations, increased a lot, even in the period of a certain deceleration of some economic activities because of the pandemic context. According to data from the report “The scars left by fire in Brazilian territory” of 2021, published in the Instituto Socioambiental, from 1985 to 2020 19.6% of the Brazilian territory has burned at least once, with the Pantanal being the biome that has burned the most in the last 36 years, corresponding to 57.5% of the biome’s territory. About 65% of the total fire in this period occurred in native vegetation and about 60% of this total was in private areas and about 15% in vacant land [2].

In addition to the deforestation fires, there were many other fires that symbolized gigantic cultural losses of a Brazil that has entered through political setbacks since the legal-parliamentary coup of 2016 [3]. One example was the fire at the National Museum in Rio de Janeiro in 2018 [4], and the consequent destruction of a collection that contained materials resulting from scientific research in natural history and anthropology in Brazil and Latin America. In 2020, the fire at the Cinemateca building in São Paulo [5], with the burning of tons of films, records, and memories of Brazilian art and cinema. The neglect of the maintenance of history, science, culture, and art, is also the neglect of the construction of collectivity and of Brazilian life and history.

As if this were not enough, there are still the fires that are explanatory metaphors for the burning of lives in the face of the exploitative ways that an idea of profit above all assumes directions towards an ultra-liberalism. Since the beginning of the pandemic until today (December 2022), in Brazil, for example, 692 thousand people have died due to Covid-19, and 6.64 million worldwide [6].

The word “urgency” used in the literature of Sabato, now resonates in many contexts in the face of numerous crises. Since when have we heard this word sounded in the field of ecology and in the field of Environmental Education and no changes in the course of civilization have taken place? Many authors, and researchers in the mentioned areas, as well as in reports from conferences and seminars, for decades,

have already pointed out ecological urgencies that become socio-environmental urgencies, and that it needs to be faced with all their complexity.

One of the lessons that we take from this health crisis due to COVID-19 is that the problems are all interconnected, and for that, transdisciplinarity analyses will be more and more needed to face it as well as a transdisciplinary pedagogical approach that might help us to connect the dispersed knowledge. [7]

There is a series of data from different research institutes that reveal, with rigor, information about the advances in hunger, poverty, and inequality, such as the 2022 OXFAM report, entitled "Inequality Kills". According to the report [8], the fortune of the 252 richest men in the world is greater than the combined wealth of all the women and girls of Africa, Latin America, and the Caribbean combined, or 1 billion people. During the pandemic, the wealth of a few of the world's richest doubled, while the income of 99% of the world's population declined. There are many other examples of inequalities that are also configured as social and environmental injustices. Machado (2020) [9], reminds us that two-thirds of the world's population could not follow the restriction measures and isolation during the pandemic, and, for the sake of survival, they had to put themselves and their families at risk.

Thus, "both the environmental, urban, and climate injustices and the virus pandemic do not reach, affect, impact, and have equal consequences for all classes, groups, people, and individuals in the world" [10]. These are the deepening of barbarities that were in the full course even before the pandemic, but that were accentuated and made all these vulnerabilities of the system of life on Earth in capitalist mode, in which lives are despised in the detriment of an economic model, more obvious.

One of these major warnings was triggered by the production of the Meadows Report in 1972 in Stockholm, the so-called Limits to growth, organized by the Club of Rome. Despite due criticism later on of some points in this report, this work was the first effort to consider the human and biological becoming together on a planetary scale. The essence of the report was that at the rate we were in the 1970s industrial development would plunder not only the biosphere itself but humanity as well [11]. A version of the same report updated 30 years later, Limits to growth: the 30-year update [12], with new graphics and updated data, shows, at a given point in time, the number of Earths needed to supply the resources used by humanity and to absorb its emissions for each year since 1960. Human demand is compared with the available supply: our only planet Earth. It exceeds nature's supply starting in the 1980s, exceeding it by about 20% in 1999, bringing the graph close to one and a half Earth to supply all demand.

However, it is known that this rhythm of production and consumption modes is not employed equally; there are inequalities and exploitation carried out differently among the regions of the world. This is one of the dangers of pointing to "what humanity has done" as being the cause of the world's ecological problems because we have to complex this point and understand that humanity is not homogeneous and does not impact the environment and biodiversity equally.

As an example of how humanity does not impact environments equally, the Brazilian indigenous, Ailton Krenak (2020), makes these considerations very well when he points out the "humanity we think we are" [13], and about how indigenous and traditional peoples have been marginalized, precisely in the name of a given project of humanity and civilization that despised them and their histories. In many instances, it is the communities of native peoples that are in the position of safeguarding the wealth of biodiversity in forests, biomes, and entire regions, contrary to the appetite for profits and the exhaustion of natural resources.

Freud, already in the late 1920s, on the verge of the great crisis of 1929 and the rise of Nazism and Fascism, asked about civilization and the feeling of unease.

The word "civilization" designates the sum total of those achievements and institutions which set our life apart from that of our animal ancestors, and which serve two purposes: the protection of man against nature, and the regulation of the bonds of men among themselves [14].

Although the technological advancement was being experienced due to the increasing industrialization of that period of Freud's time in the European context, the psychoanalyst brought the value of happiness into question. Although happiness for him was something subjective, it seemed beyond doubt that one could not feel good in the civilization of that time. Freud made the observation that "power over nature is not the only condition for human happiness".

In the mold of the global technocratic civilization, the continuous bet on the endless growth of Western modernity has reduced politics to mere economic interest. And this economy is situated in a neoliberal belief of limitless competition and exploitation of human life and the planet. Cyclical economic movements have been accentuating inequalities, going against the respect for fundamental human rights and their practical realization of expanded citizenship and the "diversity of worlds within this world" [15] as the Portuguese sociologist Sousa Santos puts it. A society where everyone can fit in will only be possible in a world where many worlds fit in [16]. Thinking in this sense, in the work of unity in diversity, what is more, urgent if not the elaboration of alternatives to neoliberalism as a way of life imposed on the whole planet? The subordination of life, on a planetary scale, to the demands of the neoliberal logic of the economy must come to an end, for its own ecological and social safeguard.

The pandemic has emphasized the sense of urgency to change the path. Sociologist Boaventura de Sousa Santos goes so far as to say that the 21st century begins now, after the 2020 pandemic. The first sign of the direction of the century's events was in the great financial crisis of 2008, but it was a false alarm, because, according to the author, after the scares in the financial markets, the same exploitative patterns of the 20th century continued. Now, the pandemic crisis has some new features that really set the tone for the unfolding challenges to be faced in this current crisis. According to Santos "from the sixteenth century until today, we lived in a time when nature belonged to us; from now on, we have come to belong to nature" [17]. There has been a shakeup in this human-nature relationship. It is as if the virus sounded the alarm for humanity, pointing out that with this exploitative civilizational model, there are no conditions to continue, and it is collapsing and afflicting lives.

Many other thinkers from different areas of knowledge also share the realization that the experience of the pandemic will be an important milestone and will change many contexts of the post-pandemic, and that it can be associated with the struggles for the creation of alternatives to neoliberalism. Edgar Morin also recalls the Western myth of a man who is destined to become "lord and master of nature" [18], a belief that definitely breaks down with the virus in 2020, because, in a way, we understand ourselves to be fragile in the face of the disease. Elderly people, with comorbidities and other health vulnerabilities and or social vulnerabilities, have died the most.

There are countless challenges of the post-pandemic and of a post-neoliberal world construction, such as the dangers of more setbacks and crises of political, economic, and democratic order, etc. It happens that the post-pandemic is being articulated, thought, and built from today, from the lessons of the experiences of the present moment of confronting the pandemic, and from the awareness of the inequalities and the various fundamental manifestations of solidarities that have been strengthened in many places. The post-pandemic will not be out there in the distant future, but it is being done right here and now.

As Edgar Morin points out, we hope that "the post-pandemic is for the regeneration of life" [19] in all its extension and diversity, and perhaps provide the opening to the work of a paradigmatic change in the ways of living, relating, and inhabiting this environment. For this, environmental education becomes very necessary, because we will have to learn together these ways to inhabit the world differently since it is not ready, it is under construction.

In this sense, Santos (2021) points out three possible paths of the post-pandemic, built from illusions about the behavior of some capitalist sectors of the period even during the pandemic, and the previous experiences of other epidemics, such as smallpox, influenza, black plague, Spanish flu, and others [20]. He points out abyssal capitalism and the pandemic as a business and the way in which various sectors of neoliberal capitalism started to profit from this crisis, especially by exploiting death. Financial speculation in the health and drug sectors, large food chains that saw their capital increase, as well as the giant Amazon and virtual services, etc.

An example of the proximity with the exploitation of death is also in the use of warlike language by

heads of state and the media when treating the fight against the virus as the fight of a war, and it is well known that throughout history wars have proven to be profitable to some economic interests, some of this commented by Santos (2021). In addition to these discourses, the denialist practices of some heads of state around the world, notably from the right and extreme right, who have incited death by provoking crowds, discrediting science, and suggesting the consumption of ineffective drugs.

The different scenarios and their narratives of the post-pandemic period will retrospectively reflect how the severity of the crisis was assessed. We can imagine three evaluations about the degrees of severity: the pandemic crisis was a crisis perhaps more dramatic but in no way different from other previous crises; the crisis was particularly serious and laid bare some serious weaknesses of the social, economic and political system, so it requires some structural adjustments; the pandemic crisis was a crisis qualitatively different from previous ones because it signaled the need to have such profound changes that imply questioning the model that dominated for the last six centuries [21].

Santos (2021), points to the last six centuries by also referring to the process triggered by the explorations and the great navigations, reiterating the colonialist roots of the current crisis. But it also demarcates the post-pandemic need to strengthen a relationship of belonging to nature, with implications for the transition to a civilizational model that is post-capitalist, post-colonial, and post-patriarchal.

This link of belonging to nature is also pointed out in a text published in *Revue Racontre Transdisciplinaires*, coordinated by CIRET (Centre international de Recherchés et études transdisciplinaires), issue 25, which had as its theme: *Que ferons-nous de cette épreuve?* Faced with the question of what kind of world we are envisioning in the face of the pandemic, Ciret's transdisciplinary community set out to point out possible answers [22].

One of the invitations that I understand about the challenge of the pandemic is related to remembering the humbleness that we owe to nature and that we are part of nature. It is about seeking the relationship between internal silence and external noise, between external silence and internal noise without losing sight of the recognition of the interdependence between people and that there is communication between fields of knowledge [23].

The dialogic between silence and noise in a way relates to the work proposed in Pinheiro (2017), which had an invitation of contemplative silence for internal cultivation and, in this cultivation, self-observation, maturing ideas, and building oneself [24]. However, faced with the challenges of awareness of the deepening barbarities of the current context, how to dive into contemplative silences in the face of so many injustices if, for example, during the pandemic, the most affected people were the most economically vulnerable people, as well as workers in the areas of health and other essential services? Besides all the devaluation of salaries of professionals, such as: small rural workers, educators, urban cleaning professionals, nurses, delivery men, and women, etc.

The contemplative silences were dwindling before the urgency of the present moment. What is left are the silences of sorrow in the face of deaths, wars, and hatred perpetrated against minorities (which are the majorities). It is necessary to recover the nurturing silences, those related to contemplative sharing and collective dreams. The silences of admiration in front of the beauty and hope of life. I don't believe in contemplative silences as being society's trainers, but as injections of creative horizons towards other ways of existing, in the strengthening to face barbarism and socio-environmental issues. Certainly, the right to contemplative silences and self-observation must be heard as a political discourse to claim for times that represent quality of life. Active and engaged silences.

Inequalities were already present before the pandemic, but one of the lessons that remains from the coronavirus is precisely about them and how much needs to be done in this sense. That is why the

paradigm shift also accompanies the way we observe the phenomena of the world and how we are affected by them, along with the concrete problems and their interrelation in their complexity. Elements such as contemplation, interiorization, and mystery are important investigative horizons for the opening to the creation of new paths, but what good would it do if this is not impregnated with the need to act, with indignation towards the problems of the world. There is always a risk there, for while we need utopian horizons nourished by contemplation, it cannot let itself be trapped in a passivity of stagnation.

Opening up to the layers of learning beyond the reduction of the mental aspect is a necessary statement of this paradigmatic change, but equally not forgetting the feet on the ground to transform the immediate context, aiming at utopias for better worlds. This paradigmatic shift, at least in environmental education, can articulate horizons of criticality and affectivity. The image of firm feet, beating heart, and dreaming head. An opening through the simultaneity of the relationship between immanence and transcendence, in the dialog between utopia and utopian practicality. As Nicolescu [25] reminds us, by eliminating the transcendental aspect of the experience, we incur in the accentuation of reductionist binarisms and, until now, the dominant paradigm that reiterates binarisms has shown itself ineffective in the task of propelling toward a creative existence.

In this perspective of civilizational change and which includes the transcendent dimension in research and training processes, Pascal Galvani (2013, p. 232), an author who reflects with and from transdisciplinary approaches, deals with a “crisis of civilization that requires a metamorphosis of consciousness” [26]. The planetary era inaugurates a community of destiny for all human beings, in which humanity is no longer an idea or a philosophical option, but a vital fact. A metamorphosis of lifestyles is necessary today to face the multiple ecological, economic, and intercultural crises that the globalized techno-economic system has created.

2 Searching for Answers full of Conscience

Considering these reflections on the need for a paradigmatic change that works towards dialogue and integration between different scientific and humanistic perspectives, the present work points to the Transdisciplinary approach as a path to be followed and deepened in Environmental Education. This is because we understand the urgency to work for the development of consciousnesses in the proposal of a non-hierarchy between subject and object, between human beings and nature, but from the experience of their relationship, through self-knowledge and the knowledge of the other interconnected with the environment.

Consciousness is like the propellant of man’s action towards survival and transcendence, towards knowing by doing and doing by knowing. Thus, knowledge is the generator of knowing, which in turn will be decisive for action. Therefore, in behavior, in practice, in doing, knowledge is evaluated, redefined, and reconstructed [27].

It is in this dialog of knowing and doing that we experience consciousness. The author also theorizes about this cycle as being vital in the interactions between living beings and the environment. He presents this flow of knowing and knowledge that operates a movement in which the reality informs the individual, who processes it and performs an action modifying the reality and that again informs the individual. This process of openness in knowing and of knowing oneself is usually overlooked in conventional educational processes, which reduce education to the transposition of watertight content, without making sense to the feet, heart, and head of the learners.

In addition to these three points above, we could also articulate another layer of knowledge experimentation, which is the spiritual. A term that can generate confusion, due to the religious issue - even more in contexts of deepening fundamentalism and religious intolerance in the Brazil of 2022 -, but that can be inserted in an understanding beyond religious dogmas. The word spirit is much closer to a relationship with mind and consciousness, than with something that is of the order of the supernatural. Therefore, if

we are talking about awareness, consciousness, and consciousness-raising, we must also go through the meanings of spirituality in education, and how this term animates educational processes.

We seek to consider the sacred dimension of the human being, through a lived and embodied spirituality in our practices and relationships with students - such as establishing norms of respect and listening, which we develop with them. Therefore, it is not necessary to explain all this to everyone, but rather to try to be a kind of example to be followed, with the recognition and acceptance of our weaknesses and deficiencies. We must overcome religious dogmatism and move towards a secular to a secular kind of spirituality [28].

The educational processes in a transdisciplinarity approach in which consider spirituality, will connect to consciousness and ontology in a broader sense as we can see above. This is important if we want to contribute with a respectful dialog between cultures and their different understandings of nature and life that in many cases consider those concepts as sacred or spiritually oriented.

Further, educator Ubiratan D'Ambrosio, in terms of a transdisciplinary approach, points out that:

The process of acquiring knowledge is, therefore, this dialectical relationship knowing/doing, propelled by consciousness. It takes place in several dimensions. Of these, we highlight the sensory, intuitive, emotional, and rational dimensions as the most recognized and interpreted. In a concession to disciplinary classifications, we would say that religious knowledge is favored by the intuitive and emotional dimensions, while scientific knowledge is favored by the rational, and the emotional prevails in the arts. These dimensions are not dichotomized or hierarchical, but complementary. In this way, there is no interruption between knowing and doing. There is no prioritization between one and the other, nor is there any prevalence in the various dimensions of the process. Everything complements each other in a whole that is behavior and that results in knowledge [29].

We could also make this brief association that, symbolically, the metaphor of the feet on the ground is more connected to sensorial knowledge; the beating heart is more connected to emotional aspects; and the head would have the privilege of rational language. The spiritual, the dimension of the sacred, and transcendence has a greater predominance of intuitive aspects, but not only, it can also transit through the emotional, the rational, and the sensorial. The types of experimentation and construction of knowledge complement each other in the process of becoming aware and studying oneself, and that we demarcate is never closed in on itself, but occurs in a relational way, with others and the environment.

These processes of knowing oneself and of experimentation and development of consciousness are not exclusive to Western rationality or to a philosophy of Greek origins. On the contrary, it is necessary to strengthen an interculturality at this point and to weave relationships between different knowledge, and how these practices and searches are present in diverse cosmovisions in all corners of the planet, at different times, and among different peoples.

The recovery and strengthening of these worldviews, that of a non-separated relationship between human beings and nature, for scientific dialogue, can cause ruptures with an arrogance of the preponderance of reason as the holder of greater knowledge. Rationality and scientific rigor are very important for the development of science itself, but its maintenance and development will also depend on its openness to dialogue with different knowledge.

In order to bring the issue of consciousness closer to the concerns in terms of environmental education, how can we pedagogically awaken ourselves to the awareness of these planetary urgencies that we have been pointing out with the countless crises and inequalities evidenced in the pandemic? The present work points to the need for complex pedagogies that stimulate a sense of solidarity between human beings and

nature, having self-knowledge as pedagogical intentionality and strategy. That is because self-knowledge, in its exercise of reflective return on oneself, is one of the exercises that connect us to the recognition of the whole web of life and the understanding of an inseparability between human beings and nature. And on this point, many of the cosmovisions of various native peoples, from Asia, the East, and the native peoples of the Americas, have long been pointing to a deeper sense of life connection also mentioned by Collado and Pasquier [30].

This is not an idealized return to modes of consciousness cultivated by diverse ancestral cultures, but the recognition of their trajectories and past work can strongly influence how we build pedagogical processes that have as their intentionality the issues of consciousness. And here, transdisciplinarity plays a fundamental role because it recognizes a dialogue between science, cultures, and ancestral bits of knowledge from diverse cosmovisions.

For this, we follow the tracks on the concept of consciousness in the educator Paulo Freire, in a glossary on his work, organized by Moacir Gadotti in collaboration with other authors:

Conscientization. The pedagogical process that seeks to give the human being an opportunity to discover himself through reflection on his existence. Paulo Freire is not the inventor of this word, as many people think. It was a word already used by ISEB (Instituto Superior de Estudos Brasileiros) theoreticians, among them Álvaro Vieira Pinto and Guerreiro Ramos. It was at the ISEB that Paulo Freire heard this word for the first time and was impressed by the depth of its meaning and realized that education, as an act of knowledge and as a practice of freedom, is first of all conscientization. From that moment on this word started to be part of his vocabulary universe with which he expressed his political-pedagogical positions. This is why he came to be considered the inventor of this word. Paulo Freire gave this word such a particular political-pedagogical content that he can be considered its "father", as many people think. This word ended up being widely spread around the world and also distorted to such an extent that Paulo Freire stopped using it or is using it less and less. In its original meaning, it implied action, that is, a particular relationship between thinking and acting. A person, or better, a group of people, who become conscious - without forgetting that no one makes anyone conscious, but that men and women make each other conscious through their daily work - is one who has been able to discover (unveil) the reason why things exist (the reason for exploitation, for example). This discovery must be accompanied by a transforming action (a political organization that makes this action possible, that is, an action against exploitation). For Paulo Freire, conscientization "is the critical development of consciousness. Conscientization involves going beyond the spontaneous phase of (apprehension) to a critical phase in which reality becomes a cognizable object and an epistemological position is taken in an attempt to know". The educator and the people become conscious through the dialectical movement between critical reflection on previous action and subsequent action in the process of liberating struggle [31].

From the glossary definition, it is possible to see that the term conscientization, although closely associated with Paulo Freire, was already used by the educational experiences of the ISEB (Instituto Superior de Estudos Brasileiros) even before the experience of the 1964 coup in Brazil, and that they were very much inspired by the so-called New School and by pedagogies that envisioned an active process of student participation. Thus, conscientization is the very pedagogical process that takes place in the individual and in the collective through reflection about existence.

In João Viegas Fernandes' text "Educar para desenvolver e conscientizar", from the same work mentioned above organized by Gadotti, we find, right from the start, the multidisciplinary and transdisciplinarity aspects highlighted, due to its need for dialogue with multiple areas of knowledge, given its insertion in a teacher training space. For the author, it is necessary "for the educator to take the cultural capital of the students as a starting point for all learning, in order to promote real (significant) learning" [32]. This is with the purpose of developing awareness, that is, seeking to have as its centrality the learner as an active subject in the learning process, which requires the contextualization of their reality.

When we come back to the question about the conscientization referred earlier, which is about the planetary urgencies, we will find ourselves wondering: what are, after all, the planetary urgencies? The virus, peace, hunger, inequalities, various crises? It happens that, for some, the urgency was somewhere other than life. As, for example, for certain sectors of the economy, the urgency was in giving continuity to the economy itself during the pandemic, or, for others, the urgency is in the development of technology and space travel to Mars, or, again, in the continuity of endless financial speculation that again will generate more poverty and inequalities. "We can reach Mars more easily than our own fellow human beings," José Saramago rightly pointed out in his speech on the 50th anniversary of the Human Rights Declaration¹.

Nothing is more urgent than to elaborate on an alternative to the one that the neoliberal hegemony imposes on the whole planet [33]. This actual neoliberal hegemony is suffocating life in all its manifestations, so there is tremendous work in the regeneration of life itself.

At this point, we follow Balduino Andreola's indications, a scholar of Paulo Freire who makes an explicit invitation through the pedagogy of great convergences when he stimulates that we should orient ourselves to the questions of planetary limits and urgency. It is from his approach that we understand the importance of reaffirming the value of life.

My invitation to a critical look at the "great urgencies" of barbarism and "borderline situations" of our time had as its sole objective the challenge of thinking of alternatives, engaging in a "pedagogy of great convergences" of ideas, initiatives and projects, which represent, in Brazil and in the world, an immense process, on the horizon of hope, for the construction of a more human and solidary world [34].

Andreola (2011) reminds us of the constant presence of Freirean inspiration to think about these limiting situations, as well as the sense of hope in his words. In a Pedagogical letter, Paulo Freire puts that ecology gains fundamental importance at that end of the century, and that now emerges in two decades of the 21st century. Ecology has to be present in any educational practice of a radical, critical or liberating nature.

In this way, we come to understand that pedagogies that stimulate self-knowledge cannot be dissociated from knowing oneself collectively and from the concerns of the world, and that, in a certain way, they are intertwined with the ecological issues highlighted by Freire, or, still, with socio-environmental issues, as Environmental Education invites us to think, and, as Freire taught us - changing the world is urgent, difficult, and necessary.

3 Life Issues to Articulate Critical Thinking and Transdisciplinarity in Environmental Education

If knowledge is made from the contexts of the learners and from their own learning, as we find referred to in the Freirean approach and in Andreola on conscientization, the understanding of planetary urgencies is connected to the socio-environmental concerns of our historical time. It should, therefore, be constructed by the learners themselves, and not merely inculcated vertically from top to bottom, but also in the horizontality of the lived reality of everyday life. In this way, one of the ways to follow the tracks of

¹Available at: <https://www.youtube.com/watch?v=0F-fupSNmJk>

these planetary urgencies, through active and critical pedagogies, is in asking how the learners understand, articulate, develop, and reverberate about what these urgencies are and how to face them.

Thus, Paulo Freire's conscientization follows as an inspiring process of awareness from the immediate, concrete, lived reality, which in the pedagogical process is the reality of the learning subjects. From the awareness of reality, the reasons for these situations are critically verified for the process of their transformation, because his understanding of the world is in tune with dialectics, which presupposes movement and also leads us to an articulation between theory and practice. The process of conscientization, becomes, at the same time, theoretical and practical.

In the Freirean pedagogical process, we understand that education is created by discerning a critical consciousness and a naive consciousness. Freire (2020) states that critical consciousness is "the representation of things and facts as they occur in empirical existence", and naive consciousness "believes itself superior to the facts, dominating them from the outside, and for this reason thinks itself free to understand them as it pleases"[35].

The concept of conscientization is being expanded and, without discarding the psychological reach it had before, it now also encompasses that of "class conscientization," of being part of the excluded, the oppressed, remembering that objective pedagogy must support them in their struggle to overcome the violence to which they are subjected, also giving them the capacity to apprehend critically and transdisciplinarily, contextually, what is apprehended, without neglecting to analyze the economic factors, the relations of production, which sustain the process of continuous social exclusion. The psycho-pedagogical features of the term "conscientization" are now broadened to include the political-pedagogical: the recognition of the current forces of the infrastructure that produce the factors of exclusion and the critical consciousness that, by recognizing these forces, develops the possibility of infra-structural transformation through reflected, thoughtful, discussed political action [36].

In this process of conscientization, at the same time critical and transdisciplinary, we understand as a point of intersection of the environmental educational process about planetary urgencies, the issue of life. Life in all its extension, its impulses, its struggles for survival, its movements, its contradictions. Even more so in times of deepening obscurantism and a politics of death, or the kill and let die that power processes evidence in their practices.

Considering this, it is necessary to generate answers to all these ills faced in life, and, to do so, it is necessary to be fully aware. It does not mean that consciousness will have an end at a given moment, but when we say to have a full consciousness is the movement to seek an extended, expanded, and committed consciousness of human values, of nature, and of all existence. "Awareness of the body, of the mind, awareness of being what one is and choosing to go beyond the experience of survival" [37].

In this sense Environmental Education can be a privileged place for finding possible answers full of consciousness from the greater awareness of the value of life and its interdependence, and these values can be guiding pedagogical values to be worked on in its formative and research processes. This is because the uncompromising defense of life is a requirement, and is at the core of the environmental educational process, as Loureiro (2019) informs us:

Not only should one seek other relationships with nature, but the permanent problematization of the social reality in which human life takes place with a view to overcoming the modes that lead life to exploitation, homogenizing standardization, destruction for economic interests, loss of social and biological diversity, inequality that generates suffering and lack of conditions to live beyond surviving [38].

Critical thinking is at the heart of Environmental Education and questioning the tension between living and surviving will be a constant question as long as inequalities persist in society. Again Krenak (2020) inspires us by saying that “life is fruition...it is a cosmic dance” [39]. It happens that the Western rationality of profit and the market logic insists on reducing life to a utility, to a commodity, to a number with numbers beside it. Certainly, environmental education is precisely this powerful starting point to question the sense of efficiency that we are giving to life. When we reduce it as a mere utility to the market, we let all its fruition escape, expressed in the encounters and joys of the collective construction of dreams and knowledge and, with that, also the knowledge of self-nourished by a fruition of collective life.

When we refer to complex thinking, we notice that the question about what life is, actually is something that “escapes us and returns to us again and again,” as Edgar Morin (2015) puts it [40]. One of the points here is that the knowledge of life could not stop only at a biological layer, but must also cross the border of the cultural, which is not annulling life, but transforming it and allowing new developments. At many points in his work, Edgar Morin reminds us that we are one hundred percent biological beings and one hundred percent cultural beings.

For Morin, in his epistemology of complexity, the notion of life is very versatile, and no definition can encompass such diverse aspects and articulate them together. None of the definitions should exclude others, and should not reduce to a substance, essence, or only physical, elemental, totalitarian, organizational, or only existential. For the author: “we need not only to reinclude life but to include in life, the terms excluded by each one-dimensional view and to reinclude ourselves, human beings, in the definition of life” [41].

4 Conclusions

“This is a bit like the situation we are living today, when millions of people perceive the urgency that is claiming us, but we don’t attain to discern the light that will guide us. United in giving ourselves to others and in the absolute desire for a more human world, let us resist” [42].

Ernesto Sabato

We return to literary aesthetics to set the tone of our conclusions. In face of the whole scenario of socio-environmental urgencies that beset us, as is the case in the context of the pandemic crisis intertwined with so many other crises of life and well-marked by the logic of the advance of economic neoliberalism, may we resist in the construction of a more human world, even if the whole context presents a deepening of various barbarities. In this scenario, Environmental education continues to be a path of possibilities to make us collectively aware of oppressions and inequalities and to strive for their transformation.

Throughout this reflective text, we deal with the concept of consciousness and some of its unfoldings, such as the concept of conscientization in educators like Paulo Freire and Ubiratan d’Ambrosio, and its opening to the concept of spirituality and the richness that this concept can encompass when treated beyond religious aspects. Transdisciplinarity itself also deals with the concept of spirituality and its meanings, like the openness to the notion of sacred. And in pedagogical processes, Pasquier relates the concept of spirituality to a concept that goes beyond to religious aspects, being closer to the need to show beauty and enchantment in the learning relation [43].

We then move on to a process of articulating critical thinking and transdisciplinarity, rigor and openness when converging theoretical aspects in the foundations of Environmental Education. From this dynamic of articulation, the concept of life appears as a concept of great centrality in the interface of questioning of the socio-environmental urgencies to be addressed and how can it be worked on in the formative processes in Environmental Education in the post-pandemic context.

Funding: There is no funding provided to prepare the manuscript.

Conflicts of Interest: The authors declares that there is no conflict of interest regarding the publication of this paper.

Authors Contribution: Samuel Lopes Pinheiro : conceptualization and writing; Florent Pasquier: supervision and review.



Copyright © 2023 by the authors. This is an open access article distributed under the Creative Commons Attribution License (CC BY-NC International, <https://creativecommons.org/licenses/by/4.0/>), which allow others to share, make adaptations, tweak, and build upon your work non-commercially, provided the original work is properly cited. The authors can reuse their work commercially.

References

- [1] Sabato, Ernesto. (2020). *A resistência*. São Paulo: Companhia das Letras.
- [2] Mapbiomas. (2021). Instituto Socioambiental. Available in: <https://acervo.socioambiental.org/sites/default/files/documents/prov0379.pdf>
- [3] Silva, R. H. dos R.; Machado, R.; Silva, R. N. da. Golpe de 2016 e a educação no Brasil: implicações nas políticas de educação especial na perspectiva da educação inclusiva. *Revista HISTEDBR On-line*, Campinas, SP, v. 19, p. e019058, 2019. DOI: 10.20396/rho.v19i0.8655755. Available in: <https://periodicos.sbu.unicamp.br/ojs/index.php/histedbr/article/view/8655755>.
- [4] O incêndio de 2018. Available in: https://www.museunacional.ufrj.br/see/o_incendio_de_2018.html
- [5] Incêndio atinge um dos galpões da Cinemateca Brasileira, em São Paulo. Available in: <https://g1.globo.com/jornal-nacional/noticia/2021/07/29/incendio-atinge-um-dos-galpoes-da-cinemateca-brasileira-em-sao-paulo.ghtml>
- [6] Covid report of World Health Organization. Available in: <https://covid19.who.int/>
- [7] Pinheiro, Samuel Lopes; Pasquier, Florent. (2021). Social Environmental Inequalities in France When Facing Covid-19 Health Crisis. *Transdisciplinary Journal of Engineering & Science*, 12. <https://doi.org/10.22545/2021/00150>
- [8] OXFAM Internacional (2022). OXFAM report. Available in: <https://materiais.oxfam.org.br/relatorio-a-desigualdade-mata>.
- [9] Machado, Carlos R.S. (2020). *Ação dos oprimidos contra o vírus capitalista: reflexões desde o vivido*. Marília: Lutas Anticapital
- [10] Machado, Carlos R.S. (2020). *Ação dos oprimidos contra o vírus capitalista: reflexões desde o vivido*. Marília: Lutas Anticapital
- [11] Morin, Edgar. (2020). *L'entrée dans l'ère écologique*. La tour d'Aigues :Édition de l'aube
- [12] Meadows, Donella; Randers, Jorgen; Meadows, Dennis. (2006). *Limits to growth: the 30-year update*. London: Earthscan
- [13] Krenak, Ailton. (2020). *A vida não é útil*. São Paulo: Companhia das Letras
- [14] Freud, Sigmund. (2011). *O mal-estar na civilização*. São Paulo: Penguin Classics Companhia das Letras
- [15] Santos, Boaventura de Sousa. (2021). *O futuro começa agora: da pandemia à utopia*. São Paulo: Boitempo
- [16] Assmann, Hugo. (1998). *Reencantar a educação: rumo à sociedade aprendente*. Petrópolis-RJ: Vozes
- [17] Santos, Boaventura de Sousa. (2021). *O futuro começa agora: da pandemia à utopia*. São
- [18] Morin, Edgar. (2020). *É hora de mudarmos de vida: as lições do coronavírus*. Tradução: Ivone Castilho Benedetti. 1ª edição. Rio de Janeiro: Bertrand Brasil
- [19] Morin, Edgar. (2020). *É hora de mudarmos de vida: as lições do coronavírus*. Tradução: Ivone Castilho Benedetti. 1ª edição. Rio de Janeiro: Bertrand Brasil

- [20] Santos, Boaventura de Sousa. (2021). *O futuro começa agora: da pandemia à utopia*. São Paulo: Boitempo
- [21] Santos, Boaventura de Sousa. (2021). *O futuro começa agora: da pandemia à utopia*. São Paulo: Boitempo
- [22] Pasquier, Florent. (2022). Du monde entier, les amies de Basarab Nicolescu répondent à son appel : « Que ferons-nous de cette épreuve ? » Une réflexion de la communauté des membres et amis du Ciret concernant la Covid-19. In : Modreanu, Simona ; Pasquier, Florent (coord.) *Basarab Nicolescu L'homme cosmoderne*. Iasi Roumanie : Junimea
- [23] Pinheiro, Samuel Lopes. Pendant et après le virus. (2020). *Rencontres Transdisciplinaires*. N°25, Edition du CIRET, décembre. Available at : <https://ciret-transdisciplinarity.org/bulletin/b25.php>.
- [24] Pinheiro, Samuel Lopes. (2017). O Silêncio e o Ser na Filosofia Vedanta: um diálogo Oriente-Occidente para pensar a relação humano-natureza em Educação Ambiental. Rio Grande -RS: *dissertação de mestrado* PPGEA/FURG
- [25] Nicolescu, Basarab. (2014). From modernity to cosmodernity: science, culture, spirituality. New York: State University of New York Press
- [26] Galvani, Pascal. (2013). Autoformation existentielle mondialogante et métissages des pratiques de soi. In : Galvani, Pascal et Moisan, Andre. Pratiques de formations analyses - Pratiques spirituelles, autoformation et interculturalité. *Revue internationale en Sciences de l'éducation et de la formation*. Saint Denis: Université Paris 8.
- [27] D'Ambrosio, Ubiratan. (1997). *Transdisciplinaridade*. São Paulo: Palas Athena
- [28] Pasquier, Florent.(2016). Espiritualidad y educación. IIIrd International Seminar on Diversity, axis the self, Universidad La Florida, Valencia, España
- [29] D'Ambrosio, Ubiratan. (1997). *Transdisciplinaridade*. São Paulo: Palas Athena
- [30] Collado, Javier ; Pasquier, Florent, (2022). Anthropocène et changement global. Réflexions transdisciplinaires sur les cultures régénératrices. In Année de la recherche en sciences de l'éducation (Arse), *Complexité et Anthropocène*. pp. 117-122. Paris : L'Harmattan
- [31] Gadotti, Moacir. (1996). *Paulo Freire: uma biobibliografia*. São Paulo: Editora Cortez
- [32] Fernandes, João Viegas. (1996). Educar para desenvolver e conscientizar. In: Gadotti, Moacir (organizador) *Paulo Freire: uma biobibliografia*. São Paulo: Editora Cortez
- [33] Pinheiro, Samuel Lopes; Pasquier, Florent (2022). Éthique transdisciplinaire et éducation à l'environnement : une réponse aux défis de l'Anthropocène. In Année de la recherche en sciences de l'éducation (Arse), *Épistémologie Et Éthique, entre sciences de l'éducation et praxis pédagogiques* pp. 105-118. Paris : L'Harmattan
- [34] Andreola, Balduino. (2011). Por uma pedagogia das grandes urgências planetárias. In: *Revista Educação*, Santa Maria, v. 36, n. 2, p. 313-330, maio/ago
- [35] Freire, Paulo. (2020). *Educação como prática de liberdade*. 48ª edição. São Paulo: Paz e Terra
- [36] Guimarães, Carlos Antônio Fragoso. (2020). *Paulo Freire e Edgar Morin sobre saberes, paradigmas e educação: um diálogo epistemológico*. Curitiba: Appris
- [37] Krenak, Ailton. (2020). *A vida não é útil*. São Paulo: Companhia das Letras
- [38] Loureiro, Carlos Frederico. (2019). *Educação Ambiental: questões de vida*. São Paulo: Cortez
- [39] Krenak, Ailton. (2020). *A vida não é útil*. São Paulo: Companhia das Letras
- [40] Morin, Edgar. (2015). *O método 2: a vida da vida*. Porto Alegre: Sulina
- [41] Morin, Edgar. (2015). *O método 2: a vida da vida*. Porto Alegre: Sulina
- [42] Sabato, Ernesto. (2020). *A resistência*. São Paulo: Companhia das Letras
- [43] Pasquier, Florent.(2016). *Espiritualidad y educación*. IIIrd International Seminar on Diversity, axis the self, Universidad La Florida, Valencia, España

About the Authors



Samuel Lopes Pinheiro: PhD in Environmental Education (FURG/Brazil). Diploma in Portuguese and English Language and Diploma in Administration. Experience with agroecology and ecology, with the translation of academic texts, teaching in public and private schools, and experience in teaching Yoga in projects at FURG (Federal University of Rio Grande) and in Mahadeva space. Currently working on teaching Portuguese in its Brazilian modality as a host language for foreign refugees from Senegal and Haiti at FURG Brazil. Member of CIRET France and member of CETRANS Brazil.



Dr. Florent Pasquier is President of CIRET since 2019: International Center for Transdisciplinary Research and Studies, Paris. Its training starts in 1988, goes through 5 universities and is anchored in several fields: social sciences, management, and law; information and communication; exact sciences. His PhD in Education (1997) focuses on new educational technologies. He became an Associate professor in 1998 at Sorbonne University (Inspé). His laboratory since 2016 is Costech (Knowledge, Organization and Technical Systems, EA 2223), at the University of Technology of Compiègne. After involvement in popular education, he conceives and implements the foundations of an « integrative, implicative and intentioned pedagogy » (P3i), as a synthesis of personal, professional and collective development processes. Its current research emphasizes transdisciplinarity, transpersonal psychology and digital humanities until spirituality and technontology.
