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The Cacao Project: Education for Environmental, Aesthetic, and Moral Development

Atila T. Calvente

Editor's Note: This distinctive and rather idiosyncratic paper by a Brazilian activist educator offers an opportunity to recognize an innovative program that combines aesthetic education with social amelioration. Working with disadvantaged children from the favelas, Sr. Calvente joins gardening activities with environmental education and engages the students with the arts as an integral part of a process he considers to be aesthetic overall.

Abstract

Economic inequalities, institutional awkwardness, cultural underdevelopment, social exclusion, a fast rate of environmental, ecological, and biodiversity degradation have all been at the root of historic social injustice and structural poverty in Brazil for centuries. Human development and emancipation in this context should be approached as a set of non-formal educational practices to promote better learning and dignity. These would become potent means for reducing material poverty and selfish individual behavior, and for improving holistic modes of education and culture. Non-traditional educational practices can have an important influence in state-run schools, as well as in private schools, by enhancing resilience and furthering social cohesion. Schools, teachers, children, and youth should be led to develop and challenge themselves using abstract, critical, and creative thinking in developing broader experiments and forms for constructing more sustainable societies. It is time to add a multidimensional approach to educational programs that will stress quality in experience using didactic methods starting in kindergarten and continuing to high school and beyond.

Key Words

aesthetic critical thinking, aesthetic engagement, the Cacao Project, human development, local community and environment, local sustainability, non-formal education

1. Introduction

Brazil has many problems, both institutional and cultural, that require broad philosophical reflection. Briefly put, these problems include great income inequality; [1] distorted ethical values that encourage selfish attitudes; negative human behavior; growing urban violence. [2] These problems have resulted in fragile public school structures; with classrooms in which many children and teenagers have low attention, impaired concentration and cognitive development in unhealthy nutritional habits. These educational problems are coupled with an environmental and ecological imbalance that is caused by deforestation and by minimal diversification in agricultural systems.

This paper intends to arouse philosophical reflection and stimulate discussion around innovative ways to improve the non-formal educational practices developed in The Cacao Project. [3] The aim of the project is to develop experiments, projects, and social actions that can improve community education and encourage ethical and cultural development. By sharing and integrating cooperative, participatory, transformational and, hopefully, creative education in public schools, the Cacao Project endeavors to encourage these communities to take multiple initiatives that can contribute to new thinking and, ultimately, will alter the social, economic, and environmental patterns throughout some regions in Brazil. In order to achieve this we have to face complexity, fragmentation, and obscurity in many uncontrolled educational settings.

Talented and untalented poor children and teenagers, we shall call them 'children' and 'youth' here, did not choose the social environment in which they were born, and they need much more attention, respect, and care from our societies. Ethical principles, basic educational guidance, flexibility, discipline, and social and cultural practices, as well as formal school curricula, should not be imposed and taught rigidly. These children and youth need to be able to search for knowledge on their own as we challenge them to value and develop group autonomy and personal responsibility.

The non-formal educational experiments described below should complement traditional curricula in an effort to reduce chronic poverty, fight ignorance, violence, and the growing homicide rate among young people (aged 15-24). [4] These conditions are symptoms of the problems mentioned at the beginning of this essay. While the rate of homicide in many countries is less than one or two per one hundred thousand people, [5] among young people in Brazil there are twenty to more than sixty killings per one hundred thousand inhabitants throughout the country. These statistics are

extraordinarily higher in slums.[6] It would be safe to assume that a large proportion of the children and youth living within these slums, whether talented or not, will come into conflict with the law.

It is necessary to search for and defeat the causes of cultural disintegration rather than put our faith in a free market solution or in a 'natural' historical process of human development. If we can add feasible and consistent non-formal didactic methods and educational practices that start in kindergarten and employ them through high school, we would reduce the human suffering and enable the financial and social costs to be invested in human development. Unconventional, creative educational programs should be a priority for public and private policies. They would ultimately cost less than building prisons, hiring thousands of policemen, judges, attorneys, and administrators, and would reduce the emotional suffering and losses to human families.

2. Non-formal educational practices. The Cacao Project: its origin, basic structure, methodologies, and activities

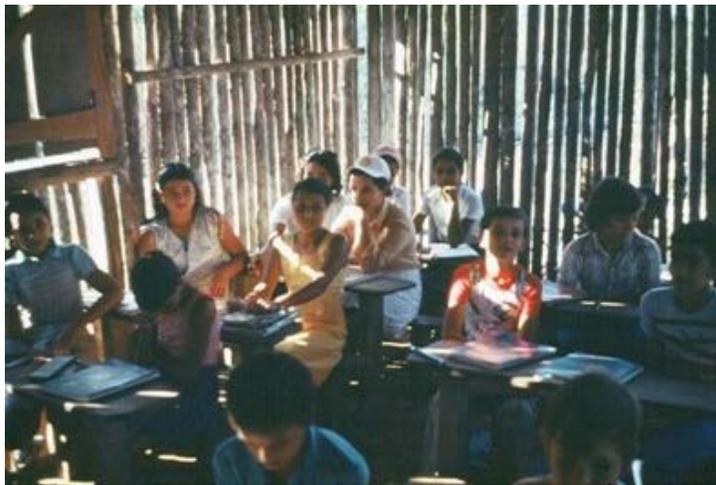
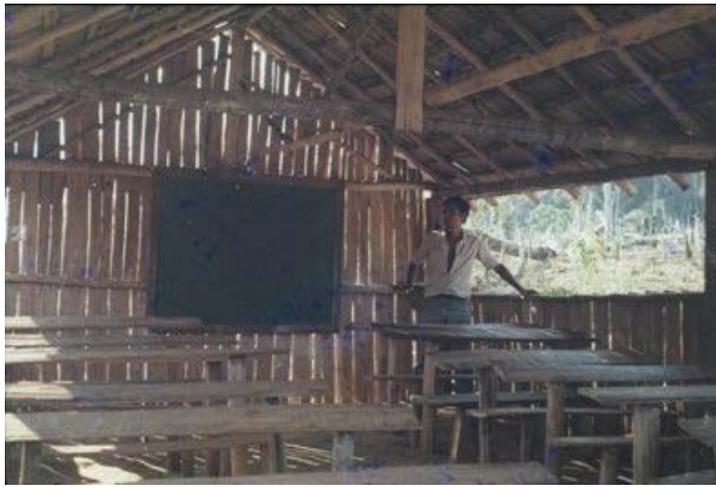
From 1975 to 1984 the author was employed at CNPq, the National Research Council-Humid Tropics Program for the Amazon region. During that time, it was possible to study and observe the peasant economy in Rondônia (Amazon region), where the author examined, experienced, and understood aspects of land reform colonization projects, fragments of economical agricultural production processes, the conduct of 'rent-seeking' private cattle farmers and ranchers, Keynesian governmental regional "development" programs, and the rate of deforestation,[7] and he witnessed the loss of biodiversity and the perpetration of substantial human violence.





Regional development projects were not structured well by the military government, and international organizations lacked comprehension of these realities. The scientific community was already studying possible climate changes and their potential relation to ecological and social aspects of the Amazon tropical forest. In May of 1979 the author shared these critical problems with senators, government officials, professionals, and local Brazilian universities, and also with Johns Hopkins University, Brookings Institute, and the World Bank staff. After returning to Brazil from Washington D.C., the author, for political reasons, was not able to continue to hold his professional position coordinating Amazon research at CNPq and even had to discontinue his own research plan. Unfortunately, the author could not speak about or disseminate his research conclusions on Amazon deforestation and peasant life and economy. It was possible in those times to work with peasants in agriculture, participate in the education of children and youth in the Amazon, and build simple, one-classroom schools there where we could take peasants, their children, and youth to swim in the rivers.





We combined these activities with discussions on agriculture, economics, and ecology, analyzed the high rate of human migration and the colonization process, and observed biodiversity through the interconnected existence in time of fauna and flora. There were always moments to look for silence in the forest and think about a different school, itself, made of the local multidimensional reality.

After 1984 the author spent several years working on seven small and medium-sized farms in Brazil where he observed their agricultural production processes. These farms produced commodities such as corn, beans, coffee, girolanda and guzolanda dairy cows, Mangalarga horses, granite blocks for construction, and beef cattle, and used both non-organic and organic production processes. It was also possible to find some time to read a few books on philosophy, in silence, in the dawn.^[8]

Beginning in 1997, while teaching in a local university, the author decided to implement an environmental education project in a few state-run schools using his own limited financial resources and volunteering his time. The projects started in the urban and rural communities of Petrópolis, R.J., a city near Rio de Janeiro (the state capitol) with three hundred thousand inhabitants, ten thousand families at social and environmental risk, and one hundred forty state-run schools. The approach of these projects could be explained as a mixture of the philosophy of experience in deep democracy. It was influenced by the work of Paulo Freire, John Dewey and by Martin Luther King's inclusive political will and activities in fighting prejudice and racism. A combination of prudence, respect, courage, responsibility, interdisciplinarity, softness, and equilibrium became the basic structure to open horizons to multidimensional and pluralistic views on ethics and environmental education.

Alexandre Calvente, the author's younger brother and a professional diver and fisherman, would always repeat a true story from hunting octopus and lobster. A man of very few words, he said that we were good divers forty years ago when first starting to dive. Then, after twenty years of experience, we could really dive, almost like a fish, and catch more octopus and lobster. But now, after a lifetime of experience, when he dives deeper, he notices different aspects of sea life he never saw before. He feels that he is no longer a fisherman or an exemplar of a fisherman, as he had thought before, but thinks of himself now as more like the water. The author has taken this story as a metaphor to talk with our children and youth about Cacaio's pluralistic views and educational abstract design thinking 'methods.' Maybe Cacaio education can experience and benefit from the silence of underwater reality and build an aesthetic engagement theory from it. Such narratives as this are not often used by Cartesian-oriented scientists and maybe Cacaio goes in the same direction as Einstein's

insight on education when he wrote that,

the school should always have as its aim that the young man leave it as a harmonious personality, not as a specialist...I want to oppose the idea that the school has to teach directly that special knowledge and those accomplishments which one has to use later directly in life...the development of general ability for independent thinking and judgement should always be placed foremost; not the acquisition of special knowledge.[9]

From 1997 to 2014, Cacaio was implemented in more than twenty state-run schools in Petrópolis in an attempt to activate those communities. In Cacaio, there are many opportunities to gather suggestions from children and youth and for building methodologies with experimental groups. I want to present and describe here some of the educational practices and activities that were utilized, but not all of which realized their full potential. Cacaio proceeds by organizing different educational activities that are "enriched by de-centering the teacher and even the classroom in order to bring active student-centered, community-based service learning into the educational process." [10] The teacher becomes a privileged participant and asks questions to let children and youth develop solutions or find answers by themselves in situations that emulate real life demands.

Because of length limitations, I shall summarize the *Cacaio Project, or the Cacaio Way, or The Cacaio Garden of Education (CGE)* as a model of human development that reconstructs part of traditional educational methodology. Cacaio proceeds by gathering children and youth on a plot of land that is at least two hundred and fifty square meters in size, and giving them ninety minutes to complete a previously defined activity that is democratically evaluated and practiced among the participants.

a. Basic Organization.

At the first meeting a polygon is drawn on the ground. The center of the polygon symbolizes the collective work with a phrase that reflects the group's personality: "cultivating our differences." At each vertex of the polygon the participants work to create and design a specific symbol and the educational action that it represents. The participants are themselves the vectors and, as if at a round table, they sit and talk. Principals, teachers, and students work together to decide on the level of the problems and determine priorities. Specific activities are organized in the first phase of work and then other possibilities are designed and structured in this way:

1. Forming circles of ethical values. Group members stand in a circle and each participant presents ethical words and concepts orally in a rapid and sequential manner. The polysemous meanings are discussed in the group. There is reading and interpretation of written texts on ethical values that have been identified in previous discussions and linked to local political, social, economic, and environmental issues and subjects. Each participant is required to produce at least one carefully-written essay every week on a different theme, while also observing paintings on the Internet (by Goya, Monet, John Constable, Djanira da Motta e Silva and others) for inspiration. At the outset, many fourteen year-old boys and girls could not write even one paragraph with three coherent sentences.

Designing and constructing organic vegetable, herb, and flower gardens and, where possible, planting fruit trees around the garden for future consumption. The students organize and share the responsibility for watering, fertilizing, and other chores. Discussions take place about unhealthy food, chemicals, human nutritional needs and natural vitamin and mineral sources. Discussions also occur on soil structure, preservation, conservation of water resources, and geographical spaces. The mathematical dimensions of large-scale farming, food production, and fertilizer production are revealed. Discussions also take place on marketing possibilities, selling products with the help of graduate students from biology and business administration. This has been done differently and in many local communities.



2. Designing and constructing a small arboretum close to the vegetable garden, when

possible, that houses a botanical garden with native trees and palm trees from different countries. Projects are developed to plant native trees in local public and private areas to restore destroyed soils along rivers and mountain regions. Until now we could only plant native trees along rivers, near and inside some schools, and in some private areas.

3. Doing carpentry and mechanical work using wood, small motors, and electronic equipment. In addition to developing manual work projects and, when possible, conducting classes in design with the help of a local graduate student. This has not yet been implemented.
4. With the help of a local engineering graduate student, obtaining or creating solar energy devices to provide less expensive hot water for the local kitchen and bathroom. "Green roof" design possibilities could be explored using vegetables and flowers found in tropical countries, but none has been constructed yet.
5. Creating iron sculptures symbolizing human life production processes using bits and pieces of engines from local junkyards around a water fountain and the vegetable garden. This has not been done yet.
6. Walking around the garden silently to encourage abstract, creative thinking (SBM) development and rest. At many times, silence can be better than using words in finding new ideas, objectives or adapting old ones to new situations.[\[11\]](#)
7. Creating Cacaoio plays, poems, texts for pedagogical theater and other environmental education programs involving issues of local and global reality. For example, children and youth are challenged to think about Amazon deforestation. Presently, the equivalent of about 700,000 soccer fields is cut down every year equivalent to almost 500,000 hectares of tropical humid forests.
8. Meeting with parents, children, and youth from other public schools and universities to organize environmental tours, "ecological walking," and observing June 5th, Brazil's version of Earth Day, when we celebrate the environment.
9. Organizing seminars and brainstorming sessions to discuss practical actions the community can take to battle local environmental problems. For example, it is not widely understood that mass extinction processes are going on, in addition to pollution. For example, in 1985 there were four hundred costero dolphins (*Sotalia guianensis*) in Guanabara Bay, but today there only thirty-eight remain. Although billions of dollars have been spent in recent decades to overcome pollution,[\[12\]](#) these dolphins live with 18,400 liters of domestic organic matter dropped every second into their habitat. Biological and chemical pollution, along with noise from huge ships, are the main factors for the extinction taking place today. Octopus, lobster, and fish are also at risk. Three decades ago, divers could catch about ten or fifteen kilograms of lobster hunting from five a.m. to four p.m. Nowadays it is difficult to obtain one kilogram (Alexandre Calvente own experience in the last forty years diving).

The organization of human development is summarized in Figure 1 below. Non-formal educational activities are evaluated and decided by different schools and communities according to their preferences. This is a dynamic process where participants can feel responsible for their choices.

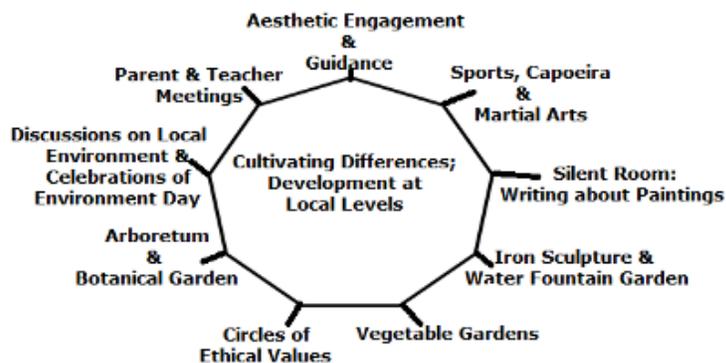


Figure 1: Cacaoio Polygon. Designed by the author, July 17, 2015.

The objectives and methodologies of Cacaoio were influenced by a multidimensional experiment that took place from 2003 to 2007 at the Educandário Princess Isabel Foundation of the Court of Justice, Childhood and Youth, of the District of Petrópolis (*Educandário*). The experiment was designed by the

author with the participation of the local Court of Justice, public leaders, and the principals and teachers of ten public schools. It was possible to structure and put into practice on a volunteer basis different non-formal educational practices inside the *Educandário* and to develop daily educational programs with more than two hundred children and youth, all of them chosen by the local Judge and the Principals of schools of Serra da Estrela in Petropolis. In successive years the author could extend his work to more schools and local communities and, at the same time, visit schools in Rio de Janeiro, Bahia and Minas Gerais, different regions in Brazil, as well as working in a small farm in Secretário, R.J., and teaching in the economics and mechanical and electrical engineering, departments at the local university.

At least two dialogues took place during those times between the author and some children at social risk in Brazil. The first when a teenager and his younger brother said, "Professor! Please listen to us! Our mother killed our father with a knife. Let us tell and show you how it happened! What can we do with our lives now?" The second dialogue occurred when a twelve year old girl, while planting a vegetable garden, said "My parents threw me in a garbage basket. They are dead now. My grandmother is taking care of me today, but she has cancer and I do not know what to do when she dies." To respond similar questions I answered we should go on working together in vegetable gardens, planting flowers, discussing and writing on interdisciplinarity, moral values, environment, climate change, poetry, paintings, and healthy food. And could also sit down together in silence.

I believe that knowledge exists in two forms--lifeless, stored in books, and alive, in the consciousness of people. The second form of existence is the essential one; the first, indispensable as it may be, occupies only an inferior position.[\[13\]](#)

It is important now to evaluate the Cacao Garden of Education, to examine its methods and objectives, to experiment with new educational activities, to improve and test its modes, methods, and practices in Brazil and possibly in two other countries.

3. Theoretical framework

In a Cacao Garden of Education, students can be challenged with discussions of aesthetic judgment and the aesthetics of engagement. Arnold Berleant's "cooptation of sensibility"[\[14\]](#) can be used in a way to help students comprehend commercial and political corruption of our sensible experience. Students should become aware of the decimation of ecological biodiversity and at the same time it is important to motivate children and youth to look for possible experiments on ways that will contribute to solving these problems.

Systemic thought, autopoietic approaches and complexity are all concepts that emphasize social, economic, ecological, institutional, relationships on a finite planet where people still believe in unlimited growth. Such 'holistic' (integrated) approaches have been presented by many philosophers and scientists, such as Ilya Prigogine, Fritjof Capra, Humberto Maturana, Silvio Varela, Edgar Morin, among others.[\[15\]](#) All attempt to find a methodology where facts are complex and uncertain, values are in dispute, stakes are high, and decisions urgent. In this approach there must be an "extended peer community" consisting of all those affected by an issue who are prepared to enter into dialogue on it. These parties bring their realities into the discussion, including local knowledge and social structures.[\[16\]](#)

This can be demonstrated to children and youth through a theoretical and practical discussion of economics, ecology, school curricula, community work, agricultural practices, soil ecology, along with other subjects and experiences in flexible research projects of local sustainable development.[\[17\]](#) Kant maintained that between theory and practice there is a term connecting them called the act of judgment.[\[18\]](#) Whatever basis of knowledge, when working in synergy for local communities autonomy, empowerment and resilience, different modes, systems, or ways of being have to be put into practice, experimented, followed by human specific and defined methods of interventions. Such a critical examination will lead to a growing awareness of the problems and the conception of a different world that is sustainable, more adapted and shaped to the reality that finds children and youth at social and environmental risk. Not only should Cacao education be developed where domestic violence, chronic unemployment, structural poverty, and crime leave children and youth with no alternative; it should also be developed as well in private schools, where rich students often need as much careful attention.

Many regions of the world share a concern for the education of their poor and young people.[\[19\]](#) Our American neighbors show a deep awareness of the problem:

[P]overty is a visible and growing problem, even within the ultrawealthy United States of America. However, instead of making just, caring, and ultimately cost-saving national investments in education, and creative experiments in economic development that might provide interlinked opportunities for economic, political, and social participation for residents of our poor, racially marginalized, and increasingly violent urban ghettos, we

build prisons.[20]

Deep radical democracy and transformative interventions are integrated in Green's approach as a fundamental pillar of a

collaborative undertaking of many people in diverse locations and across generations, within which no one has enough time, energy, and gifts to contribute focally to all parts at once, although the best work in each area is done with an awareness of ongoing work in the other areas.[21]

Philosophical questioning and pragmatic approaches must work together methodologically to struggle against

the risk of becoming another percentage point in discouraging research on the growing contingent of young and underemployed people from public-resourced schools located in poor neighborhoods.[22]

In this effort, a multidimensional construction of a set of non-formal educational methodologies and practices can contribute to integrating elements that might intervene in people's behavior, conduct, and social attitudes. To reinforce this practical, non-traditional educational structure involves understanding life as a social process itself by people participating who embody intercultural, local, global diversity. As Eli Benincá says:

[T]he human being carries capabilities, such as consciousness, which develop in relation to social contexts...., Through experience people build a sense of things...[that] is always a relationship of consciousness to another, i.e., with the world...constructed in relation to the cultural everyday...[and] built through the process of reflection.[23]

Education and life go together in John Dewey's *Reconstruction [of] Philosophy* (my emphasis) and mean organized ability in action,[24] where

[t]he true 'stuff' of experience is recognized to be adaptive courses of action, habits, active functions, connections of doing and undergoing, sensory-motor co-ordinations. Experience carries principles of connection and organization within itself.[25]

The reproduction of human existence historically has been governed by the dynamics of cultural developments through collective work, where material production, property, power, and wealth are concentrated in the hands of a minority economic group; although this social and economic process involved cumulative cultural knowledge.[26] With the global environmental challenge we face today, we cannot resist integrating global and local social perspectives in which the actions of private corporations are expected to be socially responsible. This can only be achieved through global environmental governance and practices, the development of appropriate technology, and consistency over generations of effort.[27] Considering the technical destruction of our forests and global ecological systems beginning with the Industrial Revolution and following through the twentieth century, we should reflect on the idea of Theodor Adorno that "the problem does not come from the rationality of our world but from the irrational way rationality works." [28]

As a matter of fact Dewey had proposed that

Society, as was said, is many associations, not a single organization. Society means association; coming together in joint intercourse and action for the better realization of any form of experience which is augmented and confirmed by being shared....Society is the process of associating in such ways that experiences, ideas, emotions, values are transmitted and *made common*. [29]

This can be emphasized and connected to Dewey's experimental organization and educational concepts and modes integrated in vivid life realities. Although this requires crucial choices, designing education and its objectives must be moved less by a confrontation between science and art and much more through the multidimensional assimilation of them. That is why Ernst Cassirer wrote somewhere that abstract thinking can be developed through (*in*) arts (my own emphasis).

Caciao follows Anisio Teixeira, Paulo Freire, and Darci Ribeiro, our greatest educators, dreamers, and doers in Brazil; and relies heavily on Dewey's guiding idea that

Poetry, art, religion are precious things....We are weak today in ideal matters because intelligence is divorced from aspiration....When philosophy shall have co-operated with the course of events and made clear and coherent the meaning of the daily detail, *science and emotion will interpenetrate, practice and imagination will embrace. Poetry and religious feeling will be the unforced flowers of life.* (my emphasis). [30]

This is a time to feel out new possibilities in the ethics of development[31] and make new choices for non-formal educational experiences in order to construct real peace between neighbors, to repeat words of respect for diversity, multiculturalism, intercultural learning, and to preserve our natural wealth. We must ethically guarantee development as freedom to our grandchildren and future generations.[32]

Applied science ought to be ethical and interpreted in multidimensional aspects. If we bring concepts of ontology, axiology, and metaphysics together, children and youth can get a broader education to face local and global reality, which is diversified in its nature. The elements of institutional, cultural, economic, social, and historical reality are connected; they do not live alone in the dark, completely neutral and independent of each other.

I believe, indeed, that overemphasis on the purely intellectual attitude, often directed solely to the practical and factual in our education, has led directly to the impairment of ethical values. I am not thinking so much of the dangers with which technical progress has directly confronted mankind, as of the stifling of mutual human considerations by a 'matter-of-fact' habit of thought which has come to lie like a killing frost upon human relations. Without 'ethical culture' there is no salvation for humanity.[33]

Today we realize that reality is a biological, ecological, economic, and social net. Everything is connected. The world has become smaller. Education should be freed from the fragmentation of disciplines and children should be challenged to more independence and autonomy to face global climate change, social injustice, and economic inequalities at the local level.

Socrates and then Archesilaus used to make their pupils speak first; they spoke afterwards. 'Obest plerumque est discere volunt auctoritas eorum qui docent.' For those who want to learn, the obstacle can often be the authority of those who teach.[34]

But all this can only be done how an unknown reader suggested previously, by having "classrooms in the woods, where we can not only engage in scientific study but also compose a poem, read Thoreau, dance around a tree, learn the history associated with the woods." [35]

Deeper reflection is needed in the philosophy of education, separating the previous idea of interaction inside a reality previously understood because approaches must be plural and broader in nature. There are many research activities, findings, and contributions that have been lonely processes of abstract thinking, where individuals dedicate themselves in silence and attention inside studies and laboratories.

If knowing were habitually conceived of as active and operative, after the analogy of experiment guided by hypothesis, or of invention guided by imagination of some possibility, it is not too much to say that the first effect would be to emancipate philosophy from all the epistemological puzzles which now perplex it.[36]

How can the Cacao Garden of Education amplify creative thinking, not only to interpret the world but also to contribute to changing it? Can Cacao be improved to challenge children and local communities to face present world problems such as global climate change?

Locke argued that what is needed is not just extension, revision, or inclusion of new curricular elements, but transformation of methods of thinking and teaching.[37]

As we go through Cacao Garden experiments, new methods of thinking can blossom in a symbolic farm. We are not thinking in abstractions but in concrete ways, already designing them. Part of its theory can come from a fragment of Monet's bridge over his pond of water lilies and John Constable's Hay Wain in Suffolk. Abstract, critical, and creative thinking should be its form, where children and youth should feel the tranquility and possibilities that may be hidden inside their will power, spirits, souls, brains, and minds.

4. Aesthetic engagement

Arnold Berleant did not only introduce me to new approaches in aesthetics to improve my own comprehension of integrated education. One of his suggestions led me to start reading a few insightful articles from the CA Symposium on aesthetic engagement (vol.11, 2013). I saw similar direct personal experience in Madalina Diaconu's article about the 'wind.' [38] My father left me a letter saying I should write metaphors to children and youth, and that whenever I wanted to speak to him, I should find a quiet place in nature. I felt my father's voice on the top of the mountains at Simpatia farm looking for another dialogue on silence. To grasp that moment I have learned that plants, flowers, fruits grow in silence; the sun and the moon shine in silence; boats often run fast in silence; I sleep in silence; I always build a fence of barbed wire in silence; real love between a man and a woman is best in silence; a poet, a painter, a musician, a farmer many times get inspiration and work in silence; the

only way Mother Teresa[39] prays is in silence; the best conversation between parents and children is in silence; cows are better milked in the dawn, in silence; the best way to work in crafts is in silence; a letter to a friend is written in silence; a book is evaluated in silence; you drink tea and practice martial arts in silence; a garden is conceived in silence. If I ever find ways to attain abstract, creative thinking, I shall find it in the soul of a drop of water on a leaf on a native tree (the Ipê Amarelo) and in the sublime silence of our poor and rich vulnerable children's eyes. Philosophy isn't just the clarification of our thoughts; it is also silence. Ideas can come to our spirit-brain-minds in silence. A garden of hope is where everyone would learn about the wind. Metaphors and philosophy of experience could be written in the soil and tried with them, the peasant children, who grow the food we eat, everyday, in silence. A very good friend of mine, a professor in Huskvarna, Sweden (Claes Helsten), has learned with his old teacher that we should grow older to become naive, innocent, humble or simple. I am trying to understand this in a dialogue with our common friends, the winds of New York, Vrangö, Petrópolis, Águas Lindas, Queimados and Cacoal, and in silence.

5. Conclusions

The Cacaoio Project is based on methodological pluralism. It has been designed to amplify abstract, critical, and creative thinking through metacognition. Teachers and youth can always experiment with interdisciplinarity at the local level, using a mixture of exercises in mathematics, geography, science, biology, social sciences, ecology, limnology, design, environmental education, vegetable gardens, and agro-ecology. Silence, attention, and concentration should be practiced together. Educational activities can be done in a garden of education, where simultaneous classrooms are organized with groups of fifteen students. Plays about life phenomena, human relations, behavior, modes of conduct, beliefs, concrete local environmental problems, individual and group creation of metaphors, poetry, paintings, arts, music, carpentry, recycled iron sculptures, small water fountains, near vegetable gardens and an arboretum can motivate students to write essays and express themselves. Education and education for sustainable development should be education in aesthetic engagement to promote moral development, ethics, and dignity; for real social transformation, autonomy and empowerment; and for equilibrium.[40]

The next step for Cacaoio could be as a hypothesis to be tested, designed, and structured in several different regions of Brazil and elsewhere. There its dynamics and methods, centered in non-formal education and schools, could take form in social innovation, public policies, programs or projects to develop family units of ecological agriculture, and local parks for biodiversity, protection of water resources for environmental services to urban people. Reflection in aesthetics, aesthetic engagement, philosophy of education, anthropology of education, and ecological economics, all might bring ideas to open different horizons to our youth. Experience, beauty, social interaction, equilibrium, responsibility, harmony, respect are like seeds in sensible cognition.[41]

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Atila T. Calvente is a Brazilian farmer and PhD candidate in a research program on strategies, development and sustainability, at the Institute of Economics at IE-PEPED-UFRJ (Rio de Janeiro, Brazil). The Cacaoio Garden of Education could become the basis for a research project to be multiplied, if accepted by the academic community, in which the author would integrate contemporary aesthetics to philosophy of education, ecological economics and agricultural local sustainable development. He has had previous experience in the Amazon region as former coordinator at the Brazilian National Research Council - CNPq.

Published on November 17, 2015.

Endnotes

[1] Marcelo Medeiros, Pedro Souza, Fabio Castro, "The top of income distribution in Brazil, studies of IPEA," (Renata Agostini, Folha de São Paulo Newspaper, september, 23th, 2014). About 5% of the population had 40% of total income in 2006; and 44% of total income, in 2012. At least 30 million are very poor, at social and environmental risk. More than 100 million have low income, most people have no more than US\$ 600,00 a month. At the same time Brazil has one of the highest GNP in the world.

[2] Almost every day people are shot in slums, the police struggle with criminals, and children and adults are killed by stray bullets.

[3] 'Cacaoio' is a backpack but, as a metaphor, poor peasants in the Amazon jungle call it much more than that. I am developing the concept (and the Cacaoio Project) to be the name of a book I have

been writing in the last thirty-five years. This essay presents its central ideas.

'Cacaio' means many things but basically it refers to the process by which peasants sometimes have to walk more than four days into the jungle and invade public land. They build a hut, start cutting trees and prepare to burn the forest, and then they plant. Cacaio is a set of things, usually rice, beans, oil, salt, sugar, coffee, salted meat, one knife, some tools to work with, a blanket to sleep in, and other articles for camping together with four relatives. After fifteen or twenty days working in the jungle, the peasants have to walk back to an urban location to work on a daily salary for large farmers in order to buy another Cacaio. Sometimes they first have to take their relatives to the hospital to be treated for malaria fever. Cacaio is the economic means for the reproduction of human life, itself, in a process of colonizing the Amazon jungle as a land reform project.

[4] Brazil, Brazilian Department of Public Health Information, Map of Violence, 2011.

[5] World Bank Data: Population, 2012.

[6] Brazil, Ministry of Health and Map of Violence, 2011.

[7] Brazil, National Institute of Spatial Research, INPE.

[8] Kaiten Nukariya, *The Religion of the Samurai*, (Tokyo: Kei-O-Jiku University, Luzac&Company, 1973), p. 67. "A Zen master, having seen a Confucianist burning his books thinking that they were a hindrance to his spiritual growth, observed: 'You had better burn your books in mind and heart, but not the books in black and white.'" The author has worked in seven different farms in Brazil in different climates and local cultural settings, and has found in so many books, in academic circles a link to many different approaches to "acts of judgment" from theory to practice, as Kant examined them, to life itself. The account presented in this essay might help show how interdisciplinarity and silence join in actions, emphasizing John Dewey's philosophy of experience and aesthetic engagement.

Girolanda and Guzolanda dairy cows are half-blooded, the result of breeding Holand bulls with Gir and Guzerá Indian cows. They are more adapted to a tropical climate, are fed more naturally, are more rustic, have fewer diseases, require less drugs and chemicals and, although productive, are easier to manage and more economical in the local Brazilian cultural environment.

[9] Albert Einstein, *Ideas and Opinions* (1954), p. 62.

<https://lambfollower.wordpress.com/2011/10/16/albert-einstein-on-generalizable-knowledge-and-critical-thinking/>.

It should be emphasized in the Cacaio that there is a search for new seeds that are happy to grow in tropical soils and that can still adapt to autumn leaves in the existing eighty per cent of Amazon tropical forest, since the Mata Atlântica Forest has been reduced to less than seven per cent of its original size. The philosopher Spinoza was probably partly correct when he wrote somewhere that with emotion all we have is a confused idea of reality. The same happens when we plant beans in February after a rainy day. Small farmers feel differently about reality and are always happy to put seeds in the soil even if it does not rain enough, because of changes in the global and local climate.

Cheng Xiangzhan, "Aesthetic Engagement, Ecosophy C, and Ecological Appreciation," *Contemporary Aesthetics*, vol.11 (2013). He shares a classic in Taoism, "Travelling with Huizi over a bridge on the Hao River, Zhuangzi, Zhuangzi said, 'The fish are swimming at ease. This is how fish enjoy themselves.' Huizi said, 'You are not a fish. How do you know the fish are enjoying themselves?' Zhuangzi said, 'You are not me. How do you know I don't know about fish?'

More than Western world values, as in Aristotle's idea of eudaimonia, it is possible to look for equilibrium in other cultures. "*Dukka*," for example, is an obstacle, an iron door in our lives, but it can also be seen as a 'ladder.' There are possibilities for discussing poetry and metaphors with children that do not need much happiness through their verses and symbols. Maybe they are looking for equilibrium and silence in their spirits, whatever that may seem like.

[10] Judith M. Green, *Deep Democracy: Community, Diversity and Transformation* (Rowman & Littlefield, 1999), p. 129.

[11] Symbols, the soul of drops of water, rivers, seeds, roots, plants, animals, social cohesion, and modes of human conduct probably may be more consistent, grow, and develop if (re)constructed in silence.

[12] Laboratory of Aquatic Mammals and Oceanography, UERJ, 2015.

[13] Albert Einstein, *Ideas and Opinions* (1954).

<https://lambfollower.wordpress.com/2011/10/16/albert-einstein-on-generalizable-knowledge-and-critical-thinking/>

[14] Arnold Berleant, "The Co-optation of Sensibility and the Subversion of Beauty," keynote address at international conference on "Challenges at the Intersection of American and European Philosophy," Fordham University, February, 2014. Published in Slovenian and English in *Filozofski vestnik XXXVI/1*, 2015 (Ljubljana) special issue on everyday aesthetics. Forthcoming in *Philosophy Today*. This was the occasion when the author met Arnold Berleant in dignity, speaking with each other about ethics and social transformation.

[15] Neusa Massoni, "Ilya Prigogine: uma contribuição à filosofia da ciência," *Revista Brasileira de Ensino de Física*, vol.30, N.2, (2008). "To Prigogine, the choices, the possibilities, uncertainty, are at the same time one property (*uma propriedade*) of the universe and of human existence....The landmark (*a marca*) of our times is a science where being (ser) and instability come to evolution and transformation" (p.7). Fritjof Capra, *Alfabetização Ecológica*, (Cultrix, 2005); Fritjof Capra, "A teia da vida (the web of life)," (Cultrix, 2007); Humberto Maturana and Francisco Varela, "A árvore do Conhecimento," *Psy II*, (1995); Edgar Morin, "O método," volume 4 (Sulina, 2011). Silvio Funtowicz and Jerome Ravetz, "A New Scientific Methodology for Global Environmental Issues" in *Ecological Economics: The Science and Management of Sustainability*, ed. Robert Costanza (New York: Columbia).

[16] Luca Tacconi published a book on ecological economics where he wrote, "Positivist philosophy has dominated scientific research throughout most of the twentieth century. Positivism has been discredited within the philosophy of science but this has only had limited impact on research practices in the social and natural sciences. Economists have called for the adoption of positivism in economics, however economic researchers have noted that this application has not taken place and, because of the limitations inherent in positivism, it is unlikely that it will take place. Ecological economists should learn from the methodological failures of economics and look for alternatives. Since the 1970s, several alternative paradigms to positivism have emerged. Post-normal science and constructivism are critically considered and their significance for the discipline of ecological economics is addressed in this paper. I propose a modification of the paradigmatic basis of constructivism and suggest that the revised constructivist paradigm should be seriously considered for adoption by ecological economists. I also point out that there are complementarities between post-normal and constructivist methodologies that deserve further exploration. This could enrich the methodological base of ecological economics." http://www.researchgate.net/publication/222201096_Scientific_methodology_for_ecological_economics [accessed Jul 13, 2015].

[17] Peter May, *Economia e Meio Ambiente*, (Campus, 2010); Peter May and Valeria da Vinha, "Adaptação às mudanças climáticas no Brasil: o papel do investimento privado," *Estudos Avançados*, 26, 74, (2012); Valeria da Vinha, "Polanyi e a Nova Sociologia Econômica: uma aplicação contemporânea do conceito de enraizamento social (social embeddedness)." *Revista Econômica*. V. 3. nº 2. Dezembro de 2001 (impresso em setembro de 2003). I have learned much from the classes of Peter May and Valeria da Vinha at Federal University of Rio de Janeiro, UFRJ-PEPED (dialogues at Presidente Vargas, CPDA; Flamengo; LEC-UFRJ in Seropédica; and at Praia Vermelha, Urca, Rio de Janeiro, January-November, 2015).

[18] Immanuel Kant, Mary J. Gregor & Allen W. Wood, "On the Common Saying: That may be true in theory, but it is of no use in practice" in, *Immanuel Kant: Practical Philosophy*, ed. Mary J. Gregor (Cambridge University Press, 1996). Published originally in the *Berlinische Monatsschrift* in 1793. Ludwig Wittgenstein also asked if we can learn knowledge from men by experience. He wrote that what we learn is not a technique but how to make correct judgements (Ludwig Wittgenstein, *Investigações Filosóficas* (Vozes, 2012), p. 293). Professor Ana Primavesi, a very wise eighty year-old Professor of Soil Ecology and farmer in Brazil, has taught me that dignity and kindness are the most practical actions when organizing vegetable gardens, that is, how to plant in a way that the roots are structured in the soil from their very first contact with it.

[19] Riyana Miranti, Justine McNamara, Robert Tanton & Ann Harding, "Poverty at the Local Level: National and Small Area Poverty Estimates by Family Type for Australia in 2006," *Applied Spatial Analysis and Policy*, 4,3 (August 2011), 145-171.

[20] Judith Green, *Deep Democracy. Community, Diversity and Transformation* (Rowman & Littlefield, 1999), p. 171.

[21] *Ibid.*, p. 218.

[22] Jesse Jackson, "Half of African-American Young are Born in Poverty," *The New York Times* (31/12/96), 64. 71% of 28,000 blacks of Oakland are in special education classes, the overall average is 1.8 on a system whose maximum score is 4, Courtland Milloy, *Washington Post*, 12/22/96 (BHABHA, 2011).

[23] Eli Benincá in Claudio Dalbosco, Edison Casagrande & Eldon Mühl, *Philosophy and Pedagogy*,

(Authors Associates, 2008), pp. 183, 184, 186. My own translation.

[24] John Dewey, *Reconstruction in Philosophy* (Beacon Press, Boston, 1948), p. 80.

[25] *Ibid.*, p. 91.

[26] Michael Tomasello, *Origens Culturais do Conhecimento Humano (The Cultural Origins of Human Cognition)* (Martins Fontes, 2003).

[27] Hans Jonas, *The Principle Responsibility* (Counterpoint, PUC-Rio, 2011).

[28] My translation from the Portuguese - "o mal não deriva da racionalização do nosso mundo, mas da irracionalidade com que a racionalidade atua." Antonio Soares Zuin, Bruno Pucci, Newton Oliveira Adorno, *O poder educativo do pensamento crítico* (Vozes, 2001), p. 53.

[29] Dewey, p. 205, p. 207, my emphasis.

[30] *Ibid.*, pp. 212-213; my emphasis.

[31] Denis Goulet, *Ethica del Desarrollo (Ethics of Development)*, (Madrid, IEPALA, 1999).

[32] Amartya Sen, *Development as Freedom* (São Paulo, Companhia das Letras, 1999). Cacaoio starts many times by reflecting with children in a discussion of the word 'oxymoron.' For example, this might concern the possible different meanings of the concept of sustainable development, itself. This is followed by writing essays on the intergenerational ethical conflict as described by Hans Jonas (*O princípio responsabilidade, Contraponto*, PUC-Rio, 2011). In the original, *Das Prinzip Verantwortung: Versuch einer ethic für die Technologische Zivilisation (The Principle of Responsibility)*, 1979.

[33] Albert Einstein, *The Need for Ethical Culture* (1953), pp. 53-54. Cited in Max Jammer, *Einstein and Religion: Physics and Theology*, (Princeton, 2011), p.119. Also cited in <http://www.appetd.org.za/member/index.php/component/k2/item/33-cynthia-reynders>.

[34] Michel de Montaigne, *The Complete Essays*. <http://www.spaceandmotion.com/philosophy-michel-de-montaigne.htm>

[35] A great thank you for the comments of the anonymous reviewer for *Contemporary Aesthetics* for his or her remarks. I hope I can meet the reader some day to share ideas I have published in a few papers. I would start by talking about a sentence I have once read in a book, "Para o estudante Zen uma erva daninha é um tesouro" "To a Zen student weeds are treasures." (My translation) Shunryu Suzuki, *Mente Zen, Menta de Principiante* (Palas, Athenas, 2002), p. 118. See Atila Calvente, "On Non-formal Educational Practices for Children at Social Risk," presented at the 8th World Congress on Environmental Education, Gothenburg University, Sweden, June 30, 2015. Atila T. Calvente and Leonardo Faver, "Public Policy, Preservation and Development of the Agricultural Sector: An Experience in Petrópolis - RJ" in Rachel Prado, Ana Pauletta Turetta, Aluisio Andrade, *Management and Conservation of Soil and Water in the Context of Environmental Changes* (EMBRAPA, 2010). Atila T. Calvente, "The Cacaoio Project: Non-formal Educational Practices for Children in Public Schools," *International Society for the Study of Behavioural Development*, 38, 2 (November 2014). <http://www.issbd.org/ContentDisplay.aspx?src=previousBulletins> (University Press: 137-152, 1991).

[36] Dewey, p. 123.

[37] Green, p. 127.

[38] Madalina Diaconu, "Grasping the Wind? Aesthetic Participation, between Cognition and Immersion," *Contemporary Aesthetics*, volume 11 (2013).

[39] Mother Teresa, *No Greater Love*, ed. Becky Benenate & Joseph Durepos (New York: MJF Books, 1997).

[40] While writing this paper some months ago I could not then relate the following recent experience. I had lunch with my best elementary school teacher, Goyandira, after more than four decades during which I had not seen her. When she saw me after so many years, she remained in silence, irrigating her beautiful green eyes with pure water in the same way we do in vegetable gardens. And then she answered my question, "I would like to know the secret of life and how to educate vulnerable children." She cried and in silence stayed looking at me. After a while she said, "*Leveza e suavidade.*" I shall try to translate this into the English language as "*lightness and mildness.*" That was her last class. Two days later Goyandira died.

[41] Author's note: I owe much more than I can express to the peasants, farmers, children, teachers and principals in state-run schools in Brazil; and to Leonardo C. Faver, who helped me in Petrópolis; to everyone in the local Court of Justice and to Judge Alexandre T. de Souza, who let me develop

environmental educational practices and work in a vegetable garden with youth in conflict with the law at The Fundação Educandário Princesa Isabel do Juizado da Infância e da Juventude de Petrópolis. I am indebted to Professor Arnold Berleant, who contributed so much with his knowledge and wisdom to open my spirit to aesthetics. Also, thanks so much to Professor Berleant for revising this manuscript and to Lynnie Ramsdell Lyman for her editing. Professors Peter May, Valeria da Vinha, Renata La Rovere, Goyandyra, Maria Ines Delorme and students from UFRJ-IE-PEPED, Liandra Caldasso, Ricardo Barros, Naila Takahashi, Nina Lys, Adriana Bocaiuva, Juliana Durão, Eduardo Zopelari, Sergio Braga have motivated me in new ways to integrate ecological economics and philosophy of education. Professors Mônica P. dos Santos, Mylene Santiago, Sandra Melo and all the participants of LaPEADE-U.F.R.J. have suggested ideas for the original text, although any misunderstandings in this paper are entirely of my responsibility. Professor Judith Green, Dr. Phillip Dorstewitz, and Dr. Rebecca Farinas kindly contributed so much wisdom to my passionate approaches to improve my writing on education, and I am indebted to many scholars from Europe and the USA at the Fordham University conference in February 2015. Professors Roberta Dreon and Joseph Margolis, so gentle with me, made important philosophical comments about Cacao. I have learned a lot from Professors Lauro Campos, Warwick Kerr, Paulo Vanzolini, J.G. Tundisi, Eneas Salati, Joaquim de Andrade, Charles Curt Mueller, Darci Ribeiro and Cristovam Buarque from the University of São Paulo and the University of Brasilia. I gladly acknowledge my debts to Michelle Xavier, Vanessa Lindenblatt and Lenise P. Severino da Silva. They have helped me in many ways to improve communicating my work in marginalized communities.