



Intercambio

Volume 5, Year 5, December 2013

Bulletin of the IDEA Education Research Network

Public schools and the environmental crisis



Editorial comitee

María Trejos (Costa Rica), matremon@hotmail.com
 María de la Luz Arriaga (México), mariluz@unam.mx
 Edgar Isch (Ecuador), edgarisch@yahoo.com
 Larry Kuehn (Canadá), lkuehn@bctf.ca
 Steve Stewart (Canadá), sstewart@red-sepa.net
 Miguel Duhalde (Argentina), miguelduhalde@arnet.com.ar

To learn more about the IDEA Network and previous issues of the Intercambio Magazine, consult:
www.idea-network.ca.Facebook (Idea Network- Red SEPA).

Translation
 Ruth Leckie
 Flor Montero
 Wendy Méndez
 Tamara Isch Z.

Design and layout
 Tomás Licea Hernández
 Editorial assistant
 María de Jesús Ramos

Contact Red SEPA: somary107@yahoo.com.mx

Agradecemos a:

La Federación de Maestros de la Columbia Británica (BCTF) el apoyo otorgado para la publicación de este número de "Intercambio".

We wish to thank the:

British Columbia Teachers' Federation (BCTF) for their support in the publication of this issue of "Intercambio".

Intercambio is a publication of the Initiative for Democratic Education in the Americas (IDEA Network), a continental alliance of union and popular organizations that struggle to defend and strengthen public education

Table of Contents

PRESENTATION1
Environmental crisis and education [Edgar Isch - Ecuador]2
Collapse and the challenges for education in facing uncertainty [Nicolás Ibañez - Peru]5
Citizenship and Eco-pedagogy: Proposals and experiences from secondary schools in Argentina [Ariel R. Canabal, Graciela Capodoglio, Claudio Spinzi - Argentina]7
Pedagogical praxis environmental education in public schools in the municipality of Natal/RN, Brazil [Antônio Lisboa Leitão de Souza, Magnus José Barros Gonzaga - Brazil].11
Education for sustainable development in teacher training in Ecuador [Ángela Zambrano - Ecuador]14
Keeping the Environment in Ontario's Education [Gary Fenn – Canada]17
Democratic project for education and culture: <i>"for the holistic development of people and communities"</i> [Sección XVIII CNTE-SNTE, Mexico]19
Teaching the environmental impact of pipelines and tar sands in K-12 classrooms. [Glen Hansman - Canada]21
The Constructivist Approach to creative and significant learning in the field of Environmental Education [Irene Artavia – Costa Rica]23
Methodological alternatives to address the issue of forest fragmentation in a public school in the rural area of Alfenas, Minas Gerais [Ailton José Silveira de Carvalho, Túlio Ribeiral Pereira, Ana Carolina de Oliveira Campos Gonzaga, Luciana Resende Allain - Brazil]26

Presentation

This edition of the Intercambio magazine focuses one of the most relevant issues in the contribution that education must provide to solve social problems. The environmental crisis, treated this way for not being a natural phenomenon but a result of a particular moment in human society that is living a systematic and multilateral crisis, places us in front of risks that were unimaginable in past centuries, which include threats to the existence of the human species itself.

It's important to understand the characteristics and origins of this crisis in order to act over it. This is why, not only is it required that educational institutions deliver information, but also to debate social, community, family and personal changes that are needed to intervene positively in the situation. This remembering we all have something to do but that responsibilities of the environmental crisis are differentiated and there are those who must respond for their high negative impact, as in the case of industries, especially ones related to energy.

On this stage, what is often debated is the concept of development. ¿Which is the path to resolve the problems of humanity while preserving natural wealth for the future generations? ¿Can Economy and Ecology go hand in hand? ¿What to do in front of a system which considers environmental damage a secondary externality to production? These and many more are relevant questions. They can and must be answered at a global scale, as well as local. They confront practices as well as public policies.

Capitalist modernity has pushed us towards a consumer society. It's a cultural expression, that being hegemonic, has a strong charge of individu-

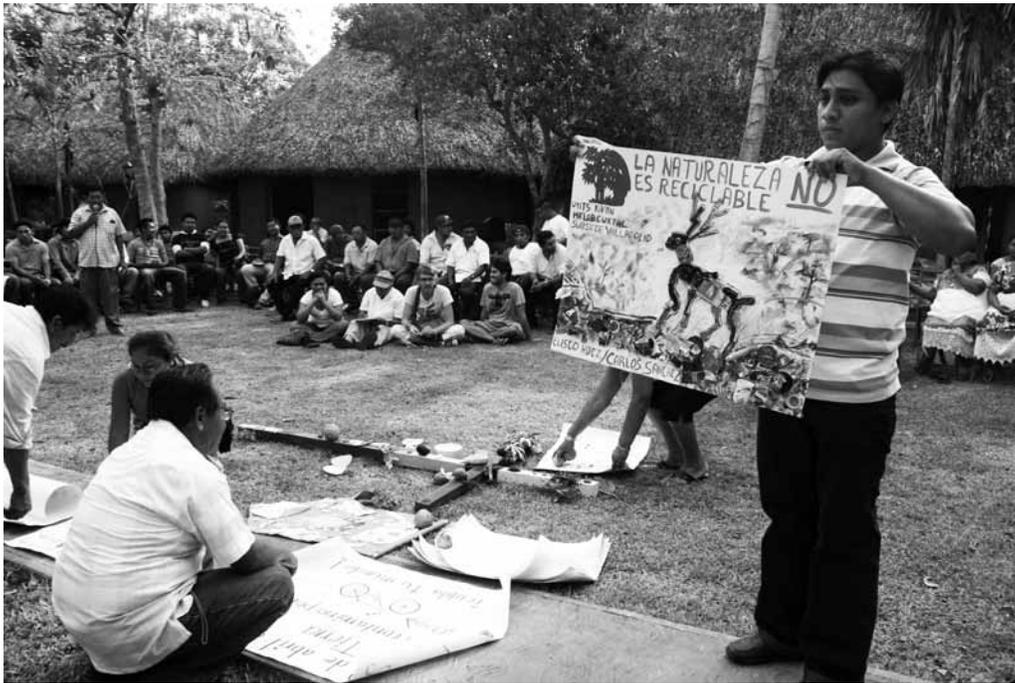
alism, harsh and dehumanizing competition. It is said that "each one is worth what they can buy" and that purchase is characterized for being unreflective and without social commitment. To face this cultural phenomenon from education, presents us also with the need to take on a clear ethical position and place human values in context.

The angles to treat the educative problematic in front of the environmental crisis, may be as we can see, multiple. This is confirmed in the articles presented in this magazine, written by teachers from North, Centre and South America. This approach pretends to go from issues of a more general analysis, to practices and concrete experiences. We believe they all allow to open up debates and obtain lessons among those of us who defend public education as a right which opens doors to other rights; as a path to democratizing societies and to prepare the new generations for dignified, human and committed life.

The approximation carried out in this edition, must be complemented with other necessary dimensions inside an education with a human rights perspective. We are referring to other cross cutting aspects to the educative effort as is gender equity, interculturality among equals, human rights and collective rights, as well as those that countries in the global South today are adding as the rights of nature. Hence, the task has a long and wide road to travel, to which individual and collective creativity is called upon. From the IDEA Network we will continue to build efforts to contribute to dialogue and action in these and other fields.

Environmental crisis and education

Edgar Isch L.¹



Indigenous correspondents

Environmental crisis does not simply refer to specific cases or isolated indicators of pollution or serious effects on the environment. It is about a crisis in the way that human beings relate to nature, a symbiotic relation that has been altered to the point of endangering the life of uncountable species, including homo sapiens. There is much evidence to prove this reality, among which the most important at a global scale are the following:

Climate change as a result of the industrial revolution and the “addiction” to energy obtained from fossil fuels, making possible a serious transformation in all the ecosystems of Earth, with serious effects on food production for a great part of humanity, the flooding of islands and lengthy coastal areas that together with a great number of extreme climate effects multiply the number of environmental refugees and serious problems of access to water in different zones of the planet.

The sixth massive extinction of species (known in English as an extinction-level event), in which ten to one hundred thousand species are estimated to disappear each year. Although many are unknown to us or we can't observe them, as in the case of mammals in danger of extinction like the polar bear; they are no less important. The fifth massive extinction occurred 65 million years ago, when the fall of a huge meteorite resulted in the disappearance of large verte-

brates like the dinosaurs. For the sixth extinction, the cause is considered to be a number of human actions.

The potential water crisis, due above all to distribution problems; priority usage not related to conservation of life (mining is a catastrophic example); and high rates of pollution from industrial use and urban waste.

Changes in the use of soils that, at the very least, can be classified as inadequate. A growing example is the destruction of tropical forests, one of the world's lungs, for use in the production of agro-fuels.

The acidification of the oceans that is gradually threatening the existence of fish for human alimentation and alterations to the nitrogen and phosphorus cycles that impact the capacity of the ground to sustain the life of plants and vegetables are other serious results of human action over the natural world.

But, where does this crisis in the coexistence of human beings and nature come from? Each phenomenon has its own immediate causes, but there are some that are shared and are at the root of this crisis. It's about the foundational principles of capitalism that can be summarized in the desire for profit and the idea of progress that come from modernity.

Consider the fact that today there is sufficient food production to nourish a world population much larger than the current one. However, 1.2 billion people don't consume the necessary calories a day because business logic prefers the use of a good part of that food to produce agro-fuels that offer greater financial gains. The same occurs with corpo-

1. Professor, member of the Researchers Network of the IDEA Network. Former Minister of Environment in Ecuador.



cric-colombia.org

rate obstacles to the use of a wider number of engines that don't consume fossil fuels, while the most damaging forms of petroleum exploitation like fracking (hydro-fracturing for petroleum from rock beds of the poorest quality) are promoted. High levels of concentration of capital are part of the essence of capitalism and have allowed for the wealth created by humanity to be concentrated today in the hands of less than 1% of the population thus making the destructive appropriation of nature necessary.

The desire for profit joins with the modern vision of development to create the illusion of constant improvement, although reality demonstrates that this is not necessarily true for the majority. For this kind of development anything is justified, especially the over production that has led us to the crisis that we are experiencing today. But the over production of raw materials, extracted by violating nature's cycles and capacity to self-generate, is necessary for the over production of merchandise in an atmosphere of exaggerated consumerism and later leads to the over production of wastes of all kinds, many of them toxic and requiring hundreds or thousands of years to decompose. In this sense, the environmental crisis is simply one more expression of the capitalist system.

Education in the face of environmental crisis

Education these days is being carried out in the difficult context described above. This implies, as always, that educators must take a stand and act on it. The existing alternatives to the environmental crisis require the holistic, formative education of human beings with critical capacities and autonomous thinking. Only in this way will we be able to question the production and consumption model, and only in this way will we achieve social commitment in the teachers and students living under the influence of neoliberal individualism.

Achieving this is a task that demands a combination of educational actions, many of which are already a part of teaching practice today. But we need a greater understand-

ing of the issues we are facing and how education can attack the root of these problems. To do this we must recover the meaning of symbiosis between society and nature, starting by recognizing that we come from nature and also are nature, and that we have been able to "humanize" nature in the many ways we have had an impact on her throughout history.

When we speak of education designed to confront social problems, we are aware that it is not only about the acquisition of knowledge, but rather understanding the depths of a human being and developing his/ her capacities within the framework of a defined ethical stance. This deviates from the narrow market-driven "education through competencies" and the individualism that insists that we teach for "competitiveness" in a market where there is no space for solidarity because the big fish is there to eat the small fish.

This explains why following the United Nations Stockholm Conference on the "Human Environment" in 1972, it was recommended that nations promote environmental education. Five years later the International Conference on Environmental Education was celebrated in Tbilisi and this established a series of objectives, principles and recommended methodologies. Many of its recommendations were picked up at the Rio de Janeiro Summit, known as the Earth Summit (1992), under the slogan of "think globally and act locally".

And it also explains how the relation between education and environmental protection slowly became deeper until a link was established between education and a new development proposal - sustainable development - which cannot yet be defined as a finished model but which can be generally summed up as requiring that development be ecologically friendly, economically efficient and socially just. It also presents the need for fundamental socio-political actions (social participation, democratization of institutions of power and defence of community production) as requirements to achieve this social transformation.

From an eco-socialist perspective, one can identify the limits of “sustainable development”, which ultimately is still based on the dominating idea of development. This is why we must go further, with a critical pedagogy that contributes to the education of subjects of the historical change that is needed in order to face the great disjunctions of humanity, including the environmental crisis.

Features of an environmental education for our times

On the agenda of the United Nations Decade for Education for Sustainable Development 2005 – 2014 (UNESCO, 2007) it states:

“Through the decade, education for sustainable development will contribute to train citizens to address the challenges of the present and future, and leaders to make adequate decisions for a viable world. They will:

- *have acquired diverse abilities (critical and creative thinking, communication, conflict management and problem solving, project evaluation) to participate actively in the life of society,*
- *respect Earth and life in all its diversity,*
- *be committed to promote democracy in a society without exclusion and where peace prevails.”*

To educate from a vision of a sustainable future is feasible if we consider the following vital aspects, for a holistic understanding supported by “the notion of a common destiny of humanity”. For López Ospina (2005) vital aspects to be considered are the following:

- a. Cross-cutting or transversal concepts:
- Interactive and interdependent society- economy- environment.
 - Comprehension of present and future needs.
 - Life styles, local and global implications, inter-dependencies.

b. Essential concepts:

- Interdependence
- Citizenship- holistic responsibilities.
- Needs and rights of the next generations.
- Diversity- unity.
- Quality of life- good living.
- Sustainable change of life styles.
- Uncertainty- precaution.”

Thus, we need a holistic and integrated kind of education, education with a transformative essence that contributes to the creation of a different society than today’s, in which the new generations have a more balanced vision of reality. It must also overcome traditional environmental education, assuming that the environment is not only nature but is made up of structures and artificial networks created by human beings and the so-called social environment, in which the types of relations between the different groups and individuals are expressed.

There are certainly examples where steps have been taken in this direction, and which will nurture future projects. Many of them are local experiences but of great impact. Changes in education and in the development of the next generations will not be instant, but the social urgency to resolve serious social and environmental conflicts and the experiences obtained so far give reason to believe that positive results can be achieved.

We must highlight that in addition to the four pillars of education for our times, as stated in the Delors Report (learning to know, learning to do, learning to live together and learning to be), a fifth pillar must be added: learning to transform and to transform oneself.

It is therefore important not only to demand changes in the dominant model of production and consumption, but also to demand changes in ourselves in favour of the environment and the common good. This involves transformation in people with a commitment that is evident on a daily basis, by which the schools must be examples of a new way of coexistence where junk food is refused, where classifying and recycling waste is promoted, where irresponsible consumption is avoided, where norms of coexistence are agreed upon, where environmental problems are understood and acted upon.

For education to achieve significant changes in the life and practice of teachers, students and their families is a great challenge. This is not to say, however, that “we are all responsible” for environmental problems; there are differentiated responsibilities and we can’t lump a family of low consumption and an oil company together, for example. To recognize our own share of responsibility is correct, but it is also correct to demand environmental justice which means that the biggest contaminators be responsible for the damage caused.

Education focused on students within their social context, that is to say their reality both inside and outside the school environment, is the condition needed to achieve a successful impact in the long term.

Bibliographic references

- ISCH, Edgar; ZAMBRANO, Angela; CARABALLO, Darwin; CARRODEGUAS, Verónica; CASSANOVA, Ramón; CHICHIRALDI, Cecilia, 2008 *“Education for Sustainable Development in the Andean region. Some significant experiences in the Andean”*. Santiago: UNESCO Santiago
- ISCH L., Edgar, 2011 The incorporation of the focus of education for sustainable development in the curriculum of teacher training institutions of the countries in the Andean region.
- LÓPEZ OSPINA, Gustavo, 2005. Building a sustainable future. Decade of an education for sustainable development. UNESCO, Quito.
- UNESCO, 2007. A decade in a few words. www.unesco.org/education/desd

Collapse and the challenges for education in facing uncertainty

Nicolás Ibáñez Blancas¹



Peruvian society of environmental law

Collapse as a possible future

Generally this word has been associated with notions of destruction or disappearance, among others. Tainter in 1990 defines collapse as a political process that a determined society goes through. A society collapses when it shows a significantly rapid loss of its stable levels of sociopolitical complexity. The author refers to various societies such as the Roman Empire and some Asian civilizations, stating the following hypothesis: it is unlikely that complex societies allow themselves to fall apart as a consequence of an error in managing their resources. When the reduction of complexity is explained, these aspects are mentioned:

loss of specialization and economic occupation of individuals, groups and territories

loss of centralized control, which is the loss of regulation and integration of diverse political and economical groups by the elite

loss of control and regulation of behaviours

loss of investment in the epiphenomena of complexity, which are elements that define the concept of civilization such as monumental architecture, artistic and literary achievements, and others

loss of information flow among individuals, between economic and political groups, and between the centre and periphery

total loss of coordination and organization of individuals and groups; a reduction of territorial integration with simple political unity.

Going over these notes, Jared Diamond (2007), presents in an interesting way the cases of 10 societies of the past, ask-

ing Why do some societies disappear? To reach an answer he analyzes the response of these groups to five factors of collapse:

1. Environmental deterioration

2. Climate change

3. Hostile neighbours

4. Friendly commercial associates

5. Response of a society to its environmental problems, this last being the most interesting. The response of a society depends on two conditions: the political, economical and social institutions that regulate life in society and the cultural values belonging to that society.

In analyzing the case of societies such as Easter Island, the Vikings in Greenland and the Mayans, it seems that their cultural values were extremely rigid, not allowing them to adapt to changes in an opportune way. Additionally, the institutions that governed were not able to interpret the events they were facing, on many occasions because their values did not allow them to understand the necessary changes that were required to face an adverse situation. This is the reason why many societies do not appear the same today.

Moreover, given the situation of our society and its apparent isolation in space, one could make a comparison between the humanity of today and the inhabitants of Easter Island. That is to say, to live in a fragile surrounding, without close allies that could help in case of extreme necessity. A suggestive question surrounds the text: what did the inhabitant of Easter Island think while s/he cut down the last tree on the island? Will that be the future of our humanity – to exhaust the ecosystem to the point of no return?

Education in the face of collapse

In this context, education plays an important role. As pointed out by Diamond, responses to crisis situations confronting

1. Head Researcher, Centre for Investigation of Dry Zones, National Agrarian University La Molina (UNALM), Peru. Visiting Professor, Master's Degree in Ecology UNALM.

societies have been linked fundamentally to their core cultural values. Rigid values have led to collapse. Therefore, educational models must be directed at generating a culture that is critical of the ideas that determine a society's character. In the global society of our day, we can identify certain ideas such as the conviction that unlimited economic growth is possible on a limited planet; the faith that technology can solve all of humanity's problems; the supremacy of the market and consumption as key elements for development, among others.

Faced with these ideas, we must contribute to the search for valid alternatives that derive from the reality and culture of the peoples. Relying on biological and cultural diversity is one of the first ways to face uncertainty in crisis situations. This is why education is a fundamental element for change in society, to confront the environmental crisis and the processes of destruction in the Andean region and in the world. However, up to now educational systems have considered this reality in a partial manner, unilaterally and from perspective of the dominant culture, without achieving an impact on social life. Educational proposals need to come from a popular, integrated and creative perspective which allows for the generation of concrete alternatives. Taking up Barbara Tuchman, we can say that education should provide the elements to prevent and identify problems before they occur, helping in awareness and improved understanding of these problems, and supporting creative solutions from the community, school and other educative actors' vision.

Challenges that education should be aligned with:

- Promote education that questions the models of consumption and unlimited growth;
- believe in harmony and balance among all in human society with nature which we are part of;
- value small local production as a basic component of an alternative economic model to the current one;
- strengthen the role of ancestral peoples and farming communities in defining and making decisions, accompanied by educational processes that critically and responsibly promote the transformation of the hegemonic development model
- and finally, respect and recover ancestral knowledge and the cosmovision of aboriginal peoples as a fundamental element of education for change.

Bibliographic references

- Diamond, Jared. 2007. Collapse. Why some societies endure and others disappear. Fourth part: Practical Teachings. Barcelona: Novoprint SA. Third edition. Pages 543 – 629.
- Tainter, Joseph A. 2003. The Collapse of Complex Societies. Cambridge University Press. UK. Pages 4 – 20.
- Tuchman, Bárbara. 1985. The march of insanity. Injustice from Troy to Vietnam. Ballantine Books. Random House Publishing Group. USA. Page 464.



Students from the Regional School for Middle Superior Education, Jalisco, Mexico. EREMSO

Citizenship and Eco-pedagogy: Proposals and experiences from secondary schools in Argentina¹

Ariel R. Canabal²
Graciela Capodoglio
Claudio Spinzi



Afforestation in public school in Pilar

“To walk in dialogue with our surroundings is to walk
recreating the world”

Francisco Gutiérrez

Introduction

The social and political reality in Latin America presents ongoing challenges to educational institutions. A globalized world, a fragmented society and exogenous cultural and socio-economic processes are the context in which formal education in different countries must build and rebuild itself. Among these macro matters, we feel it opportune to share some experiences carried out through networks and informal

connections in Argentina, more precisely in the third borough of the province of Buenos Aires. Proposals are being developed there that can be framed in the current educational trend of eco-pedagogy, and which are reimagining and overcoming the old style of isolated projects, replacing them with joint projects between NGO's and educational institutions in long term processes, and thereby, more effective for ecological awareness and citizen commitment.

1. This article is based on a report presented at the Pre Congress of ALAS 2011, National Northeastern University, Resistencia, Chaco, Argentina, May 11-13, 2011.

2. BSc. Ariel Canabal. Professor. JTP. Educative Investigation Seminar. UNTREF (National University Tres de Febrero). Ex Principal Secondary Level, Pilar Athletic Institute. Teacher - Investigator of UNTREF in issues related to School Management. Exponent in Congress and Encounters. Email: ariel344@gmail.com

Specialist Professor. Graciela Capodoglio. Specialist on Environmental Education for Sustainable Development. National University of Comahue. President of the “Association for the Protection of National Patrimony of the Pilar

District” (NGO). Project coordinator of Environmental Education in prestigious schools of Party of Pilar, Province of Buenos Aires. Currently teaching in Secondary and Third Level in the area of Social Sciences and Ecology. Email: graicapo@hotmail.com

Specialist Professor. Claudio Spinzi. Mastering in Physical Education, University of Salamanca. Specialist on Environmental Education for Sustainable Development. National University of Comahue. National Professor for Physical Education. INEF - ICELP The International Center for the Enhancement of Learning Potential. Instructor on Environmental Education and Physical Education. Professor of UN Lujan. Email: claudiospinzi@gmail.com



Environmental citizenship and a culture of sustainability will necessarily be a result of the pedagogical work that is able to combine learning with daily life. This process gives new meaning to ways of learning and at the same time, ways of citizen life - the need for vital involvement and for direct relations and unsuspected perceptions that generate interest, commitment, positive attitudes and the desire to be and to live. Learning is much more than understanding and conceptualizing: it's to love, share, give meaning, interpret, express and live.

Without a doubt school is a public space, a space where politics are moulded into the structures, designs and projects, with a strong ideological cast, framed in determined social and historic moments. Several years ago, a change was implemented at the secondary level in the province of Buenos Aires in which the Building Citizenship course was dictated as a differentiated, curricular space that would be evaluated but not marked and that would center on project proposals coming from adolescents and the community. Along the same lines, in 2012 the sixth year of the new secondary education was implemented, and in its higher cycle a specific course with the name of Citizenship and Politics and another one called Work and Citizenship appeared. We saw as well the implementation of the Institutional Agreements of Coexistence or support for the creation of student centers. The new National Education Law (26206/06) and the Provincial Education Law (13688/07), together with other laws around Children³ frame this whole process that is still ongoing.

However, building citizenship does not happen only in these formal declarations or contexts that are guided and explicit, but instead in collective participatory experiences and, in the particular case of secondary schools, through teacher teams and administrations committed to returning their at-

tention to adolescents, offering the space for true citizen commitment.

We will share the experiences of two privately-managed schools and one publicly-managed school from the Pilar district, in which Building Citizenship is based on eco-pedagogy and goes beyond school borders (Grimson, A, 2000).

Pilar Athletic Institute "Ataliva Blanco"⁴

In the Pilar Athletic Institute (IAP) the "Curupi Pora"⁵ Project was developed from the perspective of Environmental Education, understood as a process by which knowledge is built progressively, knowledge that allows one to observe, understand, explain and assess the interrelations that are established between social reality and physical surroundings, and to be able to intervene from the concept of sustainable development. For almost a decade, the activities carried out permitted an intertwining of areas and disciplines, levels and roles; where each actor in the educational community is involved.

From the beginning environmental education was considered a cross-cutting concept, so inevitably an interdisciplinary model was established, which goes further than the mere organizing of subject matter. It implies a change at the institutional level, expressed in epistemological, psychological and pedagogical concepts. Following Norberto Boggio (2000), we can say that this change goes from the logic of simplicity, belonging to a mechanistic and determinist conception, towards a logic of complexity (Morin, 1999).

Methodologically it was decided to follow the recommendations of UNESCO and PNUMA⁶ which sustain that "environmental education is fundamentally a process to solve problems that involves a holistic philosophy".

The Curupi Project presents lines of action instead of thematic axes, which cross paths in multiple dimensions, building a network, structured in three subprojects starting from two priority actions:

3. National Law for Integral Protection of Children's Rights 26.061/05. Provincial Law for the Promotion and Integral Protection of Children's Rights.

4. The IAP was founded by the Pilar Athletic Club 15 years ago as a way to bring to an educative project the values that the Club (90 years old at that moment), practiced. Sports, Art and Ecology were the basic pillars from the beginning.

5. Guarani name for a native tree. Translates to "beautiful sprite".

6. United Nations Environment Programme <http://www.pnuma.org/deramb/index.php>

7. Name with which the school is popularly identified in the community and in Pilar.



Campaign Clean Up the World, IAP in the Reserve

Teacher Professionalization: Among other activities, workshops are carried out on native plants, botanical nursery and orchard, as well as specific accompaniment grade by grade, motivating self learning and the search for new sources to continue learning about these themes.

Work with Students: In each of the levels (Preschool/ Elementary/ Secondary) activities are carried out that allow for a spiral in which, students and teachers and the school community in general, can participate in the diverse activities. The subprojects are flexible and in the past years have acquired different forms that can be framed as follows:

a) **Biodiversity:** The use of correct names to identify indigenous tree species has allowed for planting specimens of these species, their study, cultivation and donation, and the search for and creation of literature about them. Based on this material, murals and sculptures are done, where the themes highlight native animals in danger of extinction.

b) **Consumption:** Once considering that “the crisis of poverty, inequality and the environment are interrelated and are all linked to consumption”, as stated by Leonard (2010), we decided it was of the utmost importance to analyze the roles of consumer and citizen. From this perspective three actions stand out, the 3Rs: Reduce, Reuse and Recycle. To these 3Rs we added a fourth, key in the context of extreme consume-

rism, which in reality should be the first: Refuse. Basically don't consume what you don't really need.

c) **Community work:** Sharing of information among institutions through events and ongoing campaigns with the Association for Natural Heritage, the Natural Reserve of Pilar, Let's Clean the World, etc. Development of courses and events open to the local community to communicate new ways of seeing the world that surrounds us.

Community School of Villa Astolfi (Villa Astolfi, Pilar)

Understanding the work on eco-pedagogy and citizenship in The Community⁷ implies thinking about the school itself. The school grew out of a private elementary school located on the outskirts of the municipality of Pilar which, faced with a definite closure in 2001, was recovered by the local parents and teachers association. During that summer a nearby lot was found and with the effort of the neighbours, three classrooms were built and the project began. Today, after 10 years, partial state support has been given for the elementary level since up until now teachers have charged only part (sometimes less than 40%) of their wages. To rethink the school as a place of the unalienable rights of children and a work space for adults was from the beginning a backbone priority of practice, overcoming a difficult context (Cantero, G. 2001) and multiple

vulnerabilities (DGCyE 2010) that the entire community was suffering.

Acquiring institutional spaces in order to transform them into “places” (Auge 2000) of learning is still the driving force for relationships between different social actors that integrate a vast, comprehensive, inclusive school. The projects elaborated from the proposals and concerns of these diverse actors developed not only extension projects, but also articulated curricular contents, using as main resources the “human material” - which is both the most important and priceless.

Currently there are recycling, reusing and educational furniture projects underway. In 2011, the year that the native botanical nursery project began, an environmental school for parents also began. All the projects interconnect with work on other issues and find in the formal space of Building Citizenship a territory in which to concentrate or “construct” always in a collective way.

Secondary School No. 9 Pilar District

This third experience began some years ago in a school in the Pilar district of the city of Fatima. The No. 9 or “Donato’s” school (name of the Principal) is a “big” and “young” school with three shifts, and various sections. In this case, the core of the experience is found in the third year of secondary (previously grade nine of General Secondary School) and in the third year of High school Level that had an institutional option for an Institutional Curricular Space (ECI) of Ecology. From there on and with the effort that began with some teachers and the support of school management, actions were developed to work on theory, but above all, the basic practical aspects of environmental projects.

The particularities of a population made up, in its majority, of families and children of “cardboard collectors” generated the challenge to appreciate this activity and see its potential, not only in what is done daily while “recollecting”, but motivating people to “classify” more and better towards a process of “reusing”. In this line of action, much community work was done, and with the support of an NGO in the area, the Association for Natural Heritage⁸, a planning project was designed and presented to the Deliberating Council to promote a pilot test for a recycling micro business in the city of Fatima.

All these actions surely impact on the consciousness of youth and adults to exercise their damaged citizenship and discover more worthy, protagonistic and committed pathways that lead them, as in the case of many former students, to new horizons, even professional ones.

Looking at Secondary Schools from the Perspective of Eco-pedagogy and Citizen commitment

It seems valuable to share these collaborations between education professionals and specialists in environmental education, working together with a framework of flexible institutions, open to the challenge and committed to these ideals. It definitely means reflecting on a holistic educational vision that leads to planetary interdependency, to the congruency of

personal and global wellbeing and the responsibility to live in harmony with the cosmos and nature. It makes it possible to build Latin American citizenship based on solid roots and strong lungs with which to call out for the need for change and commitment on these issues.

Secondary schools, even at this moment of deep transformation and great challenges, will truly be “new” when institutional practices can be carried out as seen in the three experiences described here. These are practices that can be generated by any institutional actor, and because of the way they are carried out, gather and vitally commit others, until “all” are reached. It’s at that moment that the “no place” (No Lugar) of routine and alienation turns into “place” (Lugar), where in spite of poverty or loneliness, youth find meaning in doing something for others (others sometimes very similar to them, sometimes not), and this in turn slowly commits adults as well.

Eco-pedagogy is, without a doubt, a good path for building “committed citizens”, first of all to themselves and then to their community and country, their continent, their world... This is surely the challenge of all challenges, educating citizens for the world, the struggle for a world that doesn’t die, but flourishes for all and for the future.

BIBLIOGRAPHY

- Auge, Marc. (2000): *The “No” Places: Spaces of Anonymity*. Barcelona, Gedisa 2000. 5th Edition. Digital version. <http://designblog.uniandes.edu.co/blogs/dise2609/files/2009/03/marc-auge-los-no-lugares.pdf> Date consulted 4/15/2011.
- Boggino, Norberto, Avendaño, F (Comp.) (2002): *School from the inside and school learning*. Rosario. Homo Sapiens.
- Cantero G. Comp. (2001): *School management in adverse conditions*. Buenos Aires. Santillana.
- Capurro, Luis (s/f): “The Objectives, Methods and Contents of Environmental Education and its insertion in the main project of Education”. UNEP, UNESCO.
- DGCyE (2010): *Definitions of Vulnerability*. Planning, Investigation, Statistic Series. No. 3. Buenos Aires. Provincial Planning Direction.
- Galeano, Eduardo (1994): *Use it and throw it out*. Buenos Aires. Editorial Planeta. 2nd Edition.
- Grimson, Alejandro (Comp.) (2000): *Borders, nations and identities: The outskirts as the center*. Bs. As. Editorial La Crujía.
- Gutiérrez, F - Cruz Prado, R. (1997): *Planetary Eco-pedagogy*. ILPEC. European Union.
- Leonard, Annie (2000): *History of Things*. Buenos Aires, F.C.E.
- Morin, Edgar (1999): *The seven necessary knowledge for the education of the future*. France, UNESCO - Santillana. Digital version. <http://unesdoc.unesco.org/images/0011/001177/117740so.pdf> Date consulted 5/15/2012
- UN (2004): *Manifesto for life (Text in permanent construction)*
- United Nations Environment Programme <http://www.pnuma.org/deramb/index.php>

8. This NGO is in charge of care and management of the Natural Pilar District Reserve.

Pedagogical praxis in environmental education in public schools in the municipality of Natal/ RN, Brazil

Antônio Lisboa Leitão de Souza^{1*}
Magnus José Barros Gonzaga^{2*}



elmundowayme.es

Introduction

In this article we present the results of an investigation into pedagogical experiences in environmental education (EE) developed by teachers in public schools from the Natal Municipality Learning Network/ RN, Brazil. The objective is to identify, from a critical perspective, the theoretical and methodological basis of these experiences and how these configure into school pedagogical *praxis*. The research confirmed what had already been observed in the literature: the predominance of a conservative environmental education, characterized by an understanding of environmental issues that is limited to biology and a greening approach, and that ignores the connections between the environment and the socio-historic dynamic.

Initial considerations

Scientific research can be situated from a counter-hegemonic perspective; politically, ethically, and environmentally searching for new ways of social liberation. The present article is a summary of research carried out in public schools in the Natal municipality/ RN, in which the pedagogical experiences in environmental education and their respective theoretical basis stood out, from both a critical and dialectic perspective. We used basic concepts like *action*, in Arendt (1995), and *praxis*, in Marx (1989), which we considered fundamental categories

for establishing the kind of environmental education that will generate the most possibilities for change.

Action and praxis: a basis for critical environmental education

The formation of an ecological attitude is one of the most sought after and discussed objectives of critical EE. Ecological attitudes constitute the adoption of a collection of beliefs, values and sensibilities, from the ethical point of view as well as the aesthetic, oriented to building an ecological subject.

Unlike behaviour, attitudes guide decisions and the positioning of subjects in the world. While attempting to change behaviour, the construction of ecological attitudes is still not always reached.

More than simple mechanistic behavioural changes, critical EE supposes an ongoing process of building attitudes, through values and world visions that integrate environmental issues into the dialectic context of relations between society and nature, in the capitalist world above all. However, we don't often find that perspective in the public schools, where there is a tendency to "psychologize" EE, which compromises critical and liberating EE.

It is common, therefore, to find school instructions such as: "Don't throw garbage on the floor!" "We have to take care of nature!" or "Let's save water." When matters like these are presented to students without the proper contextualization, it results in simple attempts at training behaviour. In the context of EE in the schools, to adopt an idea of behavioural change as the final objective of the educative process could mean a loss in the character transformation and liberation which are intrinsic in the educational act.

1. ** Professor at the Federal University of Campina Grande/UFCG and researcher in the Post- Graduate of Education Program of UFRN. Email: lisboaleitao@uol.com.br

2. Doctorando en el Programa de Pos-Graduación en Educación de la UFRN. Email: magnusgorky@gmail.com



lapala.ci

To understand the conceptual difference between acting and behaving, we go to Arendt (1995), who considers the idea of *action* as a characteristic of the human condition. Understood as political *action*, it is opposed to the notion of behaviour from a psychological basis. In the pedagogical *praxis* of EE, the subject of political action is the one with capacity to identify problems, reflect critically and participate in decisions that have an impact on individual and collective life.

Arendt (1995) shows that to act means to take initiative, to initiate the movement of something. The fact that people are able to act means that we can expect the unexpected. In that sense, what we search for is *action* as a process, "it's the ability to act, to begin new processes, without precedent, whose result is uncertain and unforeseen, that can break loose into the human sphere or in the realm of nature." In the area of EE, pedagogical *praxis* needs to be guided by the understanding that EE is a process that is done through political *action* and through reflection on the pedagogical act itself.

Praxis, in the Marxist sense, is the broadest way to analyze the pedagogical experiences of EE, to find explicit and implicit meaning in the pedagogical experiences carried out in public schools in the municipality of Natal/ RN. We differentiate between the concept of *praxis* as mere *practice*, in the sense of pragmatism and utilitarianism, and a *praxis* which "means a conscious objective activity which is not conceived of as the strict utilitarian idea that is understood by the meaning of *practical* in common language" (Vásquez, 2007), but rather as part of a process that leads to transformation.

EE needs to be understood as a political act of transformation of the social and environmental reality. In this sense, the *pedagogical praxis* of EE must first consist of a human attitude of transforming nature and society. Education that contemplates *praxis* constitutes a political act of transformation

of reality, stimulates subjects to critical reflection, and unravels objective conditions for conscious action of social transformation. A transformation of nature that does not appear dissociated from the transformation of people themselves. Thereby, EE that reaches its goals through *praxis* becomes a conscious, material human activity, compelled to promote movements of transformation in the natural and social world.

School topics and their relation to pedagogical *praxis*

The topics related to EE approached by teachers in public schools demonstrate the possibility that educational *praxis* can either contribute, or not, to the transformation of the social and environmental reality. The research revealed that the most current topics in the classroom are related to the garbage problem, with lots of recycling activities and cleaning up of the surroundings.

The 3Rs policy (Reduce, Reuse and Recycle) was widespread nationally, making "garbage" a popular topic in the pedagogical activities developed in Brazilian public schools. About this policy, Layrargues says:

Many environmental education programs in schools are implemented in a reductionist way. In terms of recycling, they barely touch on the Selective Recollection of Waste, and lack critical and comprehensive reflection with respect to the cultural values of a society of consumption, consumerism, industrialism and a capitalist mode of production as well as the economic aspects of the garbage problem.

The ideological aspect of the matter has passed unperceived by educators and the problems are reduced to their technical dimensions, dislocated from environmental, social and political implications. Ideologically, recycling garbage has turned into an end in itself, instead of being considered a generator of discussions about the consequences of waste. We

also observed that some teachers invert the political logic of the 3Rs and privilege *Recycling* over *Reduction* of consumption and of *Reuse*.

With this inversion of the order in the approach to the 3Rs policy comes a lack of understanding that the *Recycling* process is only required if there is consumption and production of garbage which involves many other processes that are much more degrading for nature: exploration of natural resources; transport of raw materials for industry; industrial production, which includes more use of various energy sources and waste of raw materials, of water and transport in its final stage.

In addition to the problems caused by the different stages of resource exploration, another issue is, in current society, goods that are being fabricated to become obsolete in a short period of time. The dynamic of technological innovation results in a great variety of products and, in consequence, the creation of artificial demands. In this scenario, programmed obsolescence (when businesses intentionally reduces the useful life of a product) joins with other motivations to consume and becomes a major source of the world's garbage production. Thus, the more a society consumes, the greater the need will be to promote recycling and hide the environmental and social problem that consumption carries with it.

Another related aspect is that collection of garbage is approached directly, isolated from other stages of the process, presenting Recycling as an educational objective. In these cases, the consequences of these pedagogical experiences are even more serious for nature and society, since the education system loses an opportunity for critical, transformative and liberating pedagogical *praxis*. To privilege recycling over the other stages of the 3Rs policy, in fact, does not help to establish a social dynamic based on a perspective of a change in cultural values, which are the basis of the modern life style and the degraded environment.

Final considerations

Research in public schools in Natal/ RN revealed the potentials and contradictions of the current context. In terms of EE, the possibilities of an educational *praxis* in EE, from teachers with a critical approach to the related topics, could increase students' understanding of the means and possibilities of struggle for citizenship, social and environmental justice, and social liberation.

The building of critical, transformative EE should not fall prey to the trap of a vision that subordinates the social function of education to the demands of capital. Unlike the conservative perspective of EE that ignores social conflicts, that creates other focuses and does not allow us to see the inherent contradictions in capitalist production, we propose EE that does not limit itself to formal learning processes, but rather includes a number of social and educative practices in and beyond school and which is popular in character. In that context, EE would be, dialectically, a way to transform social conditions.

Bibliographic references

- ARENDR, H., 1995. **A human condition**. 7th Edition Rio de Janeiro: Forense Universitária.
- LAYRARGUES, P. P., 2002. Cynicism of recycling: the ideological meaning of aluminum can and its implications for environmental education. In: LOUREIRO, Carlos Frederico Bernardo. And in **Environmental education: rethinking the space for citizenship**. 2nd Edition São Paulo: Cortez.
- LOUREIRO, Carlos Frederico Bernardo, 2004. Trajectory and basis for environmental education. São Paulo: Cortez.
- MARX, K.; ENGELS, F., 1989. **German Ideology**. 7th Edition. São Paulo: Hucitec.
- VAZQUEZ, A. S., 2007. **Praxis Philosophy**. São Paulo: CLACSO; Expressão Popular.



varaldeideias.com

Education for sustainable development in teacher training in Ecuador

Ángela Zambrano C.¹



Yasuní, lahora-infolatam

Background

Education can promote positive changes in individual and collective attitudes and behaviour in the face of the environmental problems affecting the planet. And in a specific way, Education for Sustainable Development (ESD) helps human beings acquire knowledge, attitudes and values guided towards a sustainable future.

Therefore, educating for sustainable development means that the whole educational process must incorporate elements that lead to a more profound environmental sensibility and motivation to act in favour of a development model that does not jeopardize –in either quality or quantity– the existence of resources for present and future generations.

Among the initiatives to promote this model is that endorsed by the UN General Assembly, which appointed UNESCO as the organization responsible for the UN Decade of Education for Sustainable Development (2005 - 2014).

In this context, UNESCO in Ecuador carried out two studies aimed at evaluating the degree of fulfilment of the commitments taken on by Ecuador around ESD, looking at the incorporation of this content into the curriculum of teacher-training institutions, and more specifically in the area of the Yasuni Biosphere Reserve which, given its high biodiversity and endemism, was declared a World Biosphere Reserve by UNESCO in 1989.

The investigative findings

With the identification of significant experiences in the studies in relation to the definitions of UNESCO, a synthesis of the investigation showed the importance of responding to integral and participatory processes in which education offers answers to global needs. This implies the need for a strong theoretical basis and high social commitment, combined with intervention strategies that generate change in behaviour and social conditions. Some of the projects reviewed also showed a link with political impact activities, associated with development proposals, concerning the living conditions and behaviour of different social actors in their relations with nature.

This analysis permitted an understanding of how closely these initiatives are aligned, not only with the ESD proposals of UNESCO but, in general, with current visions of what education for the new millennium should be and its responsibilities to the different perspectives on development present in Ecuador.

The research includes various dimensions:

Conceptual dimension

In Ecuador it is often repeated that education is the foundation for the development of a people and that, therefore, the importance of teaching and institutional work reaches further than the classroom. In many cases however, one wonders how deeply understood this affirmation really is.

The debate around development, how it's conceived and strategies to achieve it, had an important moment with the participation of many diverse sectors in the Constitutional

1. Ecuadorian University Professor and, Doctor in Biology. ecoangela@yahoo.com

Assembly in 2008. However, this debate has not reached the education system where a very general vision of the country's development prevails, full of good intentions, but which has not been able to establish a conceptual framework.

Added to this debate are: discussions of the differences between sustainable and supportable development; a questioning of the development paradigm focused on the market which is seen as destructive of nature in the aid of objectives that are far removed from human needs and environmental possibilities; and, currently, on how Sumak Kawsay or collective Good Living, as a constitutional mandate, counteracts dominant ideas of development, and more specifically, concepts from the neoliberal perspective. These concerns have also not been considered by the education system and are mostly discussed in academic circles, nongovernmental organizations and by social leaders.

One could affirm that in terms of a conceptual and contextual framework, there has been no strong research related to education and sustainable development, which reinforces the theoretical and practical weakness around this concept.

Institutional dimension

The institutions in charge of training teachers lack the autonomy to propose a curricular structure on sustainable development. Mainly in the IPEDs (Superior Pedagogical Institutes) and IPEDIBs (Superior Pedagogical Bilingual and Intercultural Institutes), the official curriculum is considered unchangeable, and it's more traditional rather than focused on generating a belief system.

There is a strong demand for the government, through the Ministry of Education and the Higher Education Secretariat, to commit to fulfill international commitments such as those established in the declaration of the Decade of Education for Sustainable Development.

The biggest problem lies in the gap between these proposals and the official curriculum, which has different perspectives according to the educational level. In preschool, the curriculum is based on human capacities; in elementary, it's oriented to developing skills to a level of performance; in junior high, it's about attaining instructional and formative objectives; in senior high and higher education, it's structured around competencies.

The Constitution, framed as a "guarantor of rights", lays out a great number of principles and norms that easily correspond to the essential characteristics of sustainable development and with the proposals of ESD. Along the same lines as this national normative framework, the National Plan for Good Living establishes 12 national objectives which support the promotion of ESD and the Organic Code of Territorial Planning, Autonomy and Decentralization establishes the competencies for each level of government and must be combined in its application with the new Law of Intercultural Education, to attain clarity of the competencies in support of educational projects.

One limiting factor is the weak presence of transversal lines of thought which are not able to be expressed in educational practice. The application ESD should have been a priority,

but this is not even imagined in teacher training institutions.

The absence of a vision linked to sustainable development, which could be promoted by the state entities towards national education, means there is no thought of increasing resources from the state's budget for ESD in a direct manner. There is, however, an effort to build teacher's capacities related to the Sumak Kawsay and the new Constitution.

Curricular dimension

Since there is no clear conception of what the ESD signifies, it's evident that difficulties present themselves in assessing how this perspective is included in the curriculum for teacher training.

In the official documents there is no direct reference to a concept of development to which the state should bolster through education; there are only references to the global and national environmental crisis, to the need for teachers capable of transforming the surrounding reality and to a humanist education of new teachers.

At the university level, there is a focus on humanist education, as well as basic pedagogical and professional training, electives and community service. In the ISPEDs, the streams are related to human development, basic professionalization and a teaching practicum that includes carrying out community projects. The closest area of training (to ESD) is in the "Socioeconomic, cultural and ecological reality of the country" course.

At this level there is a lack of awareness of what sustainable development means and how to include this perspective in new teacher training, as well as of the existence of a Decade of Education for Sustainable Development, with responsibilities for our country. In general, this focus is associated to environmental education.

The teaching practicum and the year of educative service recognize the need for knowledge and diagnosis of the educational community and social setting, as well as the implementation of projects that establish a relationship between the schools and surrounding community. This criterion is weak, while at the same time it has the potential to encourage new teachers to exercise leadership, planning, community relations and social commitment.

Practicums

A general observation is that Ecuadorian education and training of new teachers is more focused on urban rather than rural areas. Additionally, we have seen:

- an over-valuing of new information and communication technologies of (TICs); in-service teachers are lagging behind and the training institutes are behind because of insufficient funding.
- it is common to use videos as audiovisual material, but they are not necessarily well-used. New teachers don't receive training in critical reading of media messages or other skills that allow for a better use of these instruments.
- case studies, considered the best way to comprehend the problems linked to sustainable development, are seldom used.



eltempo.com.ec

- training in leadership is not established, although indirectly it is touched upon in certain courses related to education management and university extension or during the obligatory year of rural education service.

- trips to the countryside are linked to the natural sciences, but not to social sciences. Even in the courses linked to research, there is little reference to ethnographic and qualitative techniques.

- themes related to the health of ecosystems and its links to human health are undertaken, as well as projects linked to the community's immediate interests, although with financial limitations to achieving a significant impact.

Some conclusions

The Republic of Ecuador's signing on to the agreements of the Summits of Rio de Janeiro (1992) and Johannesburg (2002), to the Millennium Development Goals and its participation in UNESCO officially commit the country to develop programs and projects that promote educational transformation in the direction recommended by the Decade of Education for Sustainable Development.

ESD, as a learning approach that allows for change, is basically unknown to the majority of actors in education, even if there are related projects that are carried out without any coordination. Its insertion into the system requires external technical support to carry out the projects and overcome insufficient teacher training.

ESD in Ecuador has its own particularities given that the Constitution establishes a model of Good Living or Sumak Kawsay. This implies a kind of "nationalization" of the ESD

with the difficulty that at the state level and that of civil society it's necessary to make meaningful this paradigm of social coexistence and of society with nature.

The recognition of the country as a plurinational state makes interculturality a factor that must be present in the entire education system and not only directed at indigenous peoples and nationalities.

The insertion of the ESD focus into schools where teacher training is carried out is a pending task that requires curricular revision to adequately establish the relation between education and Good Living, thus promoting proactive and assertive teachers.

Bibliographic references

- ISCH, Edgar; ZAMBRANO, Angela; CARABALLO, Darwin; CARRODEGUAS, Verónica; CASSANOVA, Ramón; CHICHIRALDI, Cecilia, 2008 *Education for Sustainable Development in the Andean region. Some significant experiences in the Andean region.* Santiago: UNESCO Santiago
- ISCH L., Edgar, 2011. Incorporation of the focus of education for sustainable development in the curriculum of teacher training institutions in the Andean region.
- Zambrano, Ángela e Isch, Edgar, 2011. Study on the incorporation of the focus of Education for Sustainable Development in the curriculum of teacher training institutions in the zone of the Yasuni Biosphere Reserve. At <http://www.formadores.org/Documentos/Formacion%20Docente/InformedeRBYVF.pdf>

Keeping the Environment in Ontario's Education

Gary Fenn, OSSTF¹



Education for sustainable development - OMEP

Environmental education in publicly-funded education in Canada has declined in recent years. Political issues, such as the job creation and the economy, have been moved to the forefront of public discourse ahead of other important social issues. As a result, an environmental focus has diminished in public education curricula.

In Canada, education is the jurisdiction of the provinces. While changes in curricula regarding the environment may vary from province to province, we have seen concerning trends in Canada's most populous province, Ontario.

Curriculum Change in 1999 and Revisions in 2008

Many educators expressed their concern about the watering down of environmental education when the Ontario curriculum went through a significant revision in 1999. This was made clear when courses in environmental education were pulled from the Science program and moved into the Geography subject area. The teaching of environmental education in the sciences was to be integrated by relating science to technology, society, and the environment. But learning about the environment through the sciences was getting lost under the weight of other curriculum expectations.

With environmental education becoming part of Geography courses, the opportunity for students to take speci-

fic courses on the environment was diminished. In Ontario, students are only required to take Geography in Grade 9, while there is a requirement to complete at least two courses in science, plus an additional course in science, or technology, or cooperative education. The end result is that fewer and fewer students took Geography courses beyond Grade 9, leading to very few, if any, courses in environmental education offered to students.

Curriculum Revisions 2008

Each subject area is reviewed and revised in Ontario approximately every five years. After considerable lobbying by education and environmental stakeholders, more options were made available to students in the area of science in the 2008 curriculum revision. Two Environmental Science courses were added to the curriculum, but only in Grade 11. However, there have been many other new courses offered in all subject areas in recent years, making it difficult for environmental education to compete with the increased course options. In short, few schools have been successful in running the Environmental Science or Environmental Studies courses as part of the Geography subject area. As well, many schools in Ontario are facing declining enrollment, and are no longer able to offer these courses.

Integration of Environmental Education – Does it Work?

Recognizing the growing concerns from educators and environmental stakeholders, the Ontario Ministry of Education produced policy documents to support the integration

1. Staff Liaison to the Ontario Secondary School Teachers' Federation
Environmental Advisory Work Group



Scene from the movie "Monsieur Lazhar"

of environmental education into all levels of learning in the public education system.

The first document called "Acting Today, Shaping Tomorrow – A Policy Framework for Environmental Education in Ontario Schools" was released in 2009. The policy framework outlines a number of mandates the Ministry of Education, school boards and schools must fulfill when integrating environmental education from Kindergarten to Grade 12.

In 2011, the Ministry of Education released two documents called "Environmental Education:" one produced for the Kindergarten to Grade 8 curriculum, and the other for Grades 9 to 12. These documents highlighted existing curriculum expectations that could be integrated with environmental education opportunities in the classroom. However, there is little additional support in these guides for educators regarding pedagogical approaches for integrating environmental education in all of these grades and courses.

The challenge continues to be competition for time and space in the classroom between multiple interests when it comes to student learning opportunities. Since environmental education courses had been limited to Geography in Ontario, few educators have received formal professional development on environmental issues and sciences. Integrating environmental education is left up to the individual educator, who often lacks sufficient resources or training to properly integrate the content and skills required for a positive learning experience.

The Gradual Loss of Environmental Education

Environmental education is not recognized as a separate and distinct subject area in Ontario. Fewer and fewer educators are available with skills and knowledge needed to properly teach environmental issues and sciences. For example, university teacher training programs in Ontario

do not offer environmental education as a distinct subject area since it is **not recognized** by the Ministry of Education or the Ontario College of Teachers. In addition, for teachers who seek additional training after they receive their teaching degrees, there are virtually no courses offered on environmental education, because it is **not recognized** as a formal qualification.

Environmental education remains largely restricted to the Geography subject field, or some educators may receive additional training through a qualification in Outdoor Education. As noted, Geography is a subject area that has been squeezed out in the competition for a broader range of learning opportunities. Outdoor Education faces the same challenges, and is often inaccessible for some students because it is an expensive program to run effectively. Students who cannot afford to pay the additional fees for the Outdoor Education program miss the opportunity to learn about the environment.

Another recent trend has been the push for greater financial literacy. Due to the recent global economic crisis and the skyrocketing debt many families face, many conservative and liberal elements have pushed for better financial literacy at a young age. While some may agree with the importance of basic financial literacy, the fear is that this may promote consumerism at the expense of environmentalism.

At best, the Ontario government has made a token effort to improve environmental education in the public education system. Competition for learning has led to the marginalization of environmental education. Multiple interests exist when it comes to what our children should be learning, and the interests that prevail are often tied to economic forces. Ontario and the rest of Canada may be approaching a crisis of environmental apathy due to the vacuum of knowledge in this important area of learning.

Democratic project for education and culture: “for the holistic development of people and communities”

Section XVIII of the SNTE (National Union of Education Workers), Michoacan Mexico



Literacy material section XVIII, SNTE-CNTE

Like many other countries around the world, Mexico is facing multiple social crises that are made worse by the irrational capitalistic consumption patterns that have over-exploited natural resources in exchange for economic power and political dominion. Environmental issues are *the* social crisis of our time since they are the result of a mechanistic world view that ignores the bio-physical limits of nature and the lifestyles of different cultures, while accelerating global warming and destroying life on the planet. It is also a moral crisis, in our political institutions, legal machinery, unequal social relationships and our rationalism which is in conflict with the natural flow of life.

Under such circumstances, the need for a clear, democratic and popular educational project cannot be postponed any longer. Education must become the tool for shaping a creative and proactive new citizenship with the intellectual, physical and spiritual ability to interact with the environment according to a system of values that respects and preserves Nature as the source of life.

As a pedagogical movement, we have promoted our PE-DEC project (Democratic Project for Education and Culture) for the last ten years in our Integral Education Elementary Schools. It is based on a platform to transform educational practices and to create a new curricula and ways of planning and promoting community outreach.

The relationship between the school and the community was one of the priorities of our action plans, since the global economy has erased cultures and identities and there are few places left for human interaction and integration. It is urgent to face this threat by reclaiming important community spaces and treating them as places for cultural and human endogenous development and to make them the cornerstones for a new society. Schools are called upon to engage in community processes and problems, and to play an active role in them.

The following are the strategic lines that support our Alternative Project:

1. The community promoting work as a social value for covering needs. It is important for education to teach the importance of work as one of its core principles by creating kitchen gardens, greenhouses, school farms, domestic industries, carpentry workshops, bakeries, etc. Thus, work becomes a part of school and community life, and it can be used to explain science and technology. Collective and cooperative organizations are created to contribute to social justice.

2. The community creating new productive networks. We aspire to create new forms of economic organization, consumption, distribution and product exchange that strengthen endogenous development, regional cooperation and a new

economy based on equitable relationships of exchange and production. Thus, we wish to contribute to the growth of small production units and traditional economies developed within the communities themselves.

3. Holistic Community Health. The health sector has become another tool of social manipulation and exploitation. It is one of the essential engines of capitalism that enable the spread of disease. Thus, we need to learn about healing with plants, animals and minerals so that we can develop a healthy culture through the interaction of humans and nature. Medicine must become universally available by putting the traditional knowledge of the elders back into the curriculum and by growing medicinal plants. A culture that promotes physical activity is another factor for developing a healthy environment for physical and emotional health amongst humans.

4. Healthy nutrition for families. Obesity, malnutrition and hunger have become paradoxical problems in the world. Obesity is the second leading cause of death worldwide, but multinational companies only care about pushing their unhealthy food products, with no nutritional value whatsoever, as long as their sales are up. Hunger has become a control policy, a matter of budgetary savings and the greatest failure of the system. Our task is greater than we had imagined originally; we must eliminate junk food from schools and transform eating habits in the communities. We must propose an alternative healthy diet and promote it as a right by defending food sovereignty, including the production of orchards, bakeries, farms, etc.

5. A community that protects the environment. Caring for nature is an ethical responsibility of human beings and it is urgent that we change our lifestyles and implement strategic actions to stop its destruction for the sake of life on the planet. Awareness has to be raised about the voracity of Capital and the chemical substances that are abused and not disposed of correctly. Nature is being plundered to produce disposable goods while rivers, lakes, etc. are contaminated. Thus, the world we live in is on the verge of destruction and we need to re-educate society to change the lifestyle imposed by capitalism.

6. A community that knows about scientific progress. We must become interested in learning about scientific and technological breakthroughs beyond what text books teach. We must learn about institutions and specialists that can contribute to our understanding by using IT with a critical perspective and a scientific attitude to better understand physics, chemistry, biology, psychology and all the fields of human knowledge.

7. The community organized in a democratic manner to create popular power. We must transcend top-down schools and create horizontal structures. Collective groups must become their own source of power by exercising participative democracy where all the actors are represented: educators, students and the communities. That way, decisions are made

differently and education has a broader perspective, including evaluation, management, intervention, curricular design and community development.

8. A community that lives, sings plans and creates. Playing is necessary in education, because it promotes social skills and creativity, as well as teaching us not to be too competitive or self-centered and emphasizing the role of solidarity. Creativity must also be developed by supporting the arts, culture and physical development as an integral part of schooling, so that subjects become aware of the joys of aesthetic pleasure and enjoying life.

9. Cultural community and identity reinforcement. Reclaiming our historic memory is a tool with which to combat the homogenization imposed by the neoliberal system that promotes sameness amongst consumers in attitudes and behavior. If we go back to our own roots, customs and traditions, we will find the true symbols of our identity and a sense of belonging, while acknowledging respect for multiple cultures. Thus, the nation is understood not as one uniform vision, but as a mosaic of identities and cultures.

10. A community that creates social justice. Schools are not separate from social needs, popular struggles and efforts to achieve a society without poverty or inequality. Schools need to open up their doors to discussion and to the acquisition of theoretical tools for emancipation. They need to build and work on improving living conditions, the defense of sovereignty, economic independence and the care and preservation of natural resources in each community, as well as the defense of fundamental rights like food, health and education.

11. A community of critical readers. Critical pedagogy acknowledges the fact that language and reality are interlinked in a dialogical sense. Reading and writing are expressions of language which cannot be separated from the social, political, economic and ecological contexts. On the contrary, through language a sense of reality is explored to provide interpretations and offer reflexive critiques to transform it.

Following these strategic lines, we promote a popular community program that respects the nature of our culture, identity, ethical and moral values in order to use them to develop a social, political and economic organization that guarantees social justice for the people.

Due to the different crises that overwhelm us, especially the environmental one, we are forced to rethink society, communities and schools. The cultural development of capitalism is dehumanizing, destructive and degrading and, therefore, we are called on to refine our critical attitude and to break away from our passiveness to create resistance to capitalistic extermination. There is an urgent need to take the pressing task of fighting for our survival into our own hands, to preserve the environment and to regain control of our destiny.

Teaching the environmental impact of pipelines and tar sands in K-12 classrooms¹

Glen Hansman, BCTF²



British Columbians protest proposed pipelines, January 2013.

The BC Teachers' Federation (BCTF), the union representing the 41,000 teachers working in the public school system in British Columbia (Canada), has a long history of advocating for social justice: against sexism, racism, and homophobia in our schools and in society; against the economic forces that deepen inequity and increase child poverty; for workers' and indigenous peoples' rights; and, more recently, for what is sometimes described as environmental responsibility or eco-justice. On some of these issues, we have made positive advances – sometimes in conjunction with other organizations, and often in individual classrooms or school districts. Canadian society, unfortunately, is becoming increasingly colonized by neoliberal philosophy and has turned its back on international commitments, including environmental obligations such as the Kyoto protocol.

It isn't without shame that many Canadians see their country becoming pariahs on the world stage when it comes to environmental issues. This, in part, has resulted in a greater focus on environmental issues in the social justice work the BCTF does – though not without controversy.

In the fall of 2012, the BCTF received considerable media interest in teaching resources created by the BCTF's Aboriginal Education Advisory Committee and the Environmental Justice Action Group of the Committee for Action on Social

Justice. These bodies consist of teachers from communities around British Columbia who meet to study issues and develop projects that further the work of the BCTF and teachers in public schools. In this case, they created materials in support of the following resolution approved at the BCTF's 2012 Annual General Meeting:

That the BCTF act in solidarity with the Aboriginal people to oppose:

1. The construction of the Northern Gateway twin pipelines.
2. The proposed industrial development that threatens the Sacred Headwaters to the Skeena, Nass, and Stikine rivers.
3. The "Prosperity Mine" in the Chilcotin.
4. Kinder Morgan's plans to twin the Trans Mountain pipeline.
5. The proposed Keystone Pipeline.

This resolution placed the BCTF clearly in the camp of a growing social movement in resistance to efforts to export heavy oil produced in Alberta's tar sands via the BCTF coast, as well as other large resource extraction projects that threaten waters and native traditional lands

This decision is certainly not the first environmental issue the BCTF has taken a position on. There's a long history, in fact. The 1962 AGM, for example, resolved that "the BCTF is opposed to nuclear weapons testing." The January 1978 Representative Assembly carried a motion declaring the Federation's "opposition to any further uranium mine site developments in British Columbia until such activities have been proven completely safe."

1. K-12 hace referencia a los años educativos que van desde el Kínder o preescolar hasta los doce años de edad.

2. **Glen Hansman** is the 1st Vice President of the BC Teachers' Federation, and can be reached by email at gghansman@bctf.ca

Enbridge/Northern Gateway is a proposed mega-project that would see raw bitumen (heavy oil extracted from soils via open pit mines) transported from the tar sands in Northern Alberta through sensitive ecological areas and unceded traditional territory of many of British Columbia's Aboriginal peoples to the Pacific coast.

The proposal for the Enbridge/Northern Gateway project has been the subject of tremendous public debate, and polling indicates that the majority of British Columbians are opposed to the project – despite enthusiasm of the Alberta provincial government and the government of Canada as a whole, who are enthusiastic about the purported economic benefits they say the project will bring.

In keeping with these and other decisions of the BCTF, the Committee for Action on Social Justice produced materials about the Enbridge/Northern Gateway project that complement other resources on the topics such as antiracism education, water, LGBTQ issues, child poverty, Aboriginal rights, and more. The lesson aids can be found here: <http://tinyurl.com/BCTFpipeline>

Unlike those other resources, though, the pipeline materials generated a lot of media attention – and outrage from some in favour of the project. Within a few days of the materials being made available, the story was covered by national media outlets across Canada.

Even the Canadian government's Natural Resources Minister waded in on the discussion – expressing concerns about students “being subjected to one side of a really critical public issue without hearing from the other side.” Now, this should not be a surprising quote from a Natural Resources minister who is part of a neo-liberal party that receives large donations from the oil and gas industry, has reneged on international commitments on environmental issues and has been eliminating environmental protections that were previously in place. Not only is Canada aggressively pursuing an oil and mining agenda in Latin America and elsewhere in the world, but the same agenda is playing out in Canada as well.

In speaking to the media, BCTF spokespersons emphasized that the pipeline teaching resources fit within the curriculum of British Columbia, as set by the provincial Education Ministry and includes prescribed learning objectives on issues of sustainability, Canada's economic relationships, resources and economic development, factors affecting exploration and technologies used, environmental effects of settlement in BC and Canada, relations between cultures and their environments, and the impact on Aboriginal communities. Under ministry regulations individual teachers and schools have the leeway to decide what is actually taught within these guidelines.

Under the “resources and economic development” prescribed learning outcome, for example, students might learn about mining, or the forest industry, or fisheries—or the oil and gas industries. Discussing the Northern Gateway project fits entirely within the requirements of the Social Studies curriculum in BC. A teacher may decide to use the Northern Gateway project as an example, or may not. That is the teacher's choice.

We have also emphasized that teachers use a variety of materials from a variety of sources. In Social Studies, as in other subject areas, students are asked to demonstrate critical thinking skills, to defend positions, to weigh sources of information against one another, and to develop a plan of action to solve a problem.

The BCTF's materials help to balance out the more commonly available material – especially material that is found on the internet. A quick Google search generates content that is almost exclusively in favour of Enbridge's pipeline. Other news stories do come up, however, given the large number of pipeline spills and other “accidents” that seem to be occurring on a regular basis – further increasing concerns about the damage that the Enbridge / Northern Gateway project may have in BC. The BCTF resources also serve to balance out “lesson aids” and “teachers' guides” that are often sent to school by the oil, mining, dairy and other large industries in Canada. These are often colourful, glossy, and enticing materials to use in a classroom – but can hardly be considered unbiased given they come from the industries themselves.

While the controversy over the BCTF's lesson aids on the environment has died down, we as a union have learned some lessons about how to better launch such material – especially in a media climate that is often hostile to unions in general, and especially to voices that question the economic initiatives of the current Canadian government. Regardless, teachers will continue to raise these issues – not only in solidarity with Aboriginal peoples, but for the sake of the future of the children we teach and the communities we live in.



Indigenous peoples against oil pipeline, British Columbia, Canada

The Constructivist Approach to creative and significant learning in the field of Environmental Education

Irene Artavia¹



Campaign We are Free

What is the origin of the initiative?

In 2006, Costa Rica began the Creative Environmental Education project which uses imaginative and environmental elements, including games and exercises, to teach about natural processes and create awareness of the need to protect the environment.

This is how our organization promotes peace and harmony with the environment - by developing a constructivist learning process through playful methods. After all, environmental education is a lifestyle which is learned and practiced every day. From the time we wake up in the morning until we go to bed at night; everything revolves around the environment and its natural processes.

What are the objectives?

To adopt the constructivist process through a series of pedagogical and practical steps, to develop a subject, activity or project, in a formal or informal way.

To recuperate the values of each community in regard to nature. To use the creativeness of each person and social group through an inter-generational approach and active participation in games and activities.

To reflect on our moods and the way we relate to ourselves and to our social/natural environment, with assertive communication that honors nature and society.

To promote active participation based on knowledge to teach active and creative individuals who promote peace and harmony with society, with the environment and with themselves.

A new look at environmental education

We propose an interaction between humans and nature that triggers curiosity for significant learning and keeps the subjects interested in the knowledge, behaviors and affects.

During these difficult times, we require environmental education that allows for the shaping of human beings and their environmental awareness as an ongoing process throughout their lives, by teaching knowledge, skills, values, aptitudes and attitudes to guide their social and environmental behavior.

These are the foundations for significant change, for both individuals and groups, in the effort to preserve nature.

As Paulo Freire said: "teaching is not transferring knowledge, but creating possibilities for its construction. Those who teach learn to teach; those who learn teach while learning."

To create a healthy environment, we need to understand our immediate environment; but also to see the immensity of the concept and that goes it beyond the every-day to encompass the planet and the whole universe. Each element of nature and the cosmos plays a role that promotes and gives rise to life on the planet and for this reason, a creative and emotional environmental education is required for all generations.

Our environment is defined as the harmonious integration of everything, and everything affects all living beings. This includes any group of natural and social values at a specific place and time that influence the life of living creatures, including humans, generation after generation. It is not only the place where life takes place; but it also includes the 5 elements with whom life interacts: water, earth, energy, air and space.

1. Director of the Federación Ambientalista Internacional in Costa Rica. Project leader.



Play: The cage. Children's Museum. Campaign We are Free, San Jose Costa Rica, June 2012.

By understanding that the environment includes all the tangible and non-tangible, direct and indirect relationships amongst living beings, including the human species, and that we all need one another, we will be able to live in harmony with nature.

Why should we live in harmony with nature, through an eco-systemic relationship?

If we analyze what we are made of, we will notice that we are just another component of nature. We are air, energy, organic matter and water. Each person occupies a space, both inside and outside of the skin. But the difference is that we create our own environment. We have great skills and due to our creative intelligence, when we acknowledge this important difference, we regain the mental and physical control to think, speak and act in a positive way to benefit the environment.

Environmental education plays a very important function regarding visionary, creative and integrative thinking. It allows us to acknowledge our intellectual skills to think, say and act to benefit nature.

Environmental education includes social and cultural perspectives. It respects the unique values of each community and its natural features. We use the creativeness and originality of each individual or group to develop constructivism as a strategy to use the values of communities. Thus, each person, child, youngster, adult or elder has a role to play in sharing knowledge by means of creative and constructivist environmental education.

What is creative and constructivist environmental education?

In order to understand the constructivist process, we need to ask the following question: How do we communicate with ourselves and with other people as environmental educators?

We start by becoming aware of the way we feel, which has an impact on the communication we establish with others. For this reason, the environmental educator or facilitator must have stability in thoughts and feelings when carrying out collective actions.

We firmly believe that society must be woven by active and conscious people who are not reactive. When there is resistance to change, our positive, enthusiastic and respectful attitude makes a difference. Furthermore, it is essential to promote equal participation where each individual is free to express themselves and act. This is what creates real community participation, when everyone contributes in an organized and orderly manner, by respecting the specific values of everyone; to construct from knowledge, and to develop self-esteem while feeling useful.

One of our tasks is to help others understand why so many people do not take positive actions for the environment or do not understand the change phenomena around the planet; like extreme temperatures, natural disasters, apathy or lack of interest at individual and collective levels.

How to understand and participate without needing to control things that are out of our control?

We understand that human beings are a part of nature and that we depend on biological elements to survive. We are suffering from environmental damage, just like other forms of life on the planet.

We are innovative in our way of teaching, learning and living daily. This helps us release the stress created by ourselves, a disease that we believe is in the minds of people and that is the possible source of many physical and mental diseases. We tackle the problem by promoting empathy and enjoying the environment for recreational purposes; while sharing the knowledge and experience people possess. This facilitates a willingness and ability to share in other places and environments. We have even contributed to tackling family violence, by solving conflicts through communication, and thus, we have benefited families and their surroundings.

Why is learning also considered to be a type of constructing?

Going back to the integration process, significant learning has allowed us to integrate thinking through knowledge and feelings through attitudes and actions. The sensory com-

ponent helps us rescue and reinforce values, since it shapes and models experience according to context, expectations and needs. In this way, from the biological viewpoint, we take the information acquired through our nervous system to begin with the process of construction. We use values such as friendship, love, solidarity, responsibility, honesty, commitment, perseverance, generosity, respect and tolerance at a collective level, while emphasizing the values of cooperation and solidarity to develop a more holistic work strategy.

We believe that games and imagination are useful at any age. According to Carla Hannaford: "it is a basic ingredient in happy physical, intellectual, social and emotional growth", since it creates a new society that has a positive connection to nature.

Who participates? What are the tasks?

The people who participate:

Older adults who have workshops for producing crafts from recycled objects. They participate in environmental fairs and do reforestation activities near water sources, etc.

Farmers and cattle raisers who promote water-friendly practices.

Schools that have ecological water treatment installations to use water efficiently.

Community leaders with innovative projects, such as solar water heaters.

Elementary teachers who use creative methods with their students. Guides for discovering the water resource" within a hydrographic basin.

Young people in community "art and nature" theater projects.

Some of the activities we promote

Educational/recreational hiking with families in the communities of interest.

Interventions of peace and harmony with nature in different places around the country.

Environmental celebrations to value and bear witness that we truly are a green country (but emphasizing the challenges)

The "We are Free" campaign to denounce hunters and the trading of wild flora and fauna.

Educational campaigns on the highways to prevent and create a non-violent culture against wild fauna.

We are part of the Wild Life and Highways Commission that develops these types of campaigns. We collaborate with all institutions, organizations and communities, without charge and with the support of youth, adults, children and community organizations. We offer courses, workshops, talks and trainings on carbon footprint and environmental practices that are environmentally-friendly. We offer guides and manuals with non-formal play activities to share with the people who request them.

We are a not-for-profit group that is encouraged by the love of nature and by the people involved in local initiatives to take small actions that add up to be great actions for the world.

The evaluation of our work has led us to change our education strategies, so we keep updating our methods. We value diversity of experience and we have feedback processes for our on-going improvement.

What are our main achievements?

Training, sharing and giving follow-up to 3,560 people.

Our people work with environmental matters at a local, regional and national level. Some are also working on international projects.

International projection - we have shared our methodologies with Cuba and Venezuela in national and international congresses.

What are some of our challenges? How have we faced them?

Because of the nature of our project, it is supported by different types of contributions from the actors and other people who share our objectives. Likewise, our techniques use recycled materials, and the organizations and institutions that participate bring their resources together to join forces.

The challenges that we have faced are transformed into lessons learned to improve our project.

Our goal now is to buy a piece of land to carry out recreational, creative and educational activities in order to strengthen the groups that have been working with us for some time.



Methodological alternatives to address the issue of forest fragmentation in a public school in the rural area of Alfenas, Minas Gerais

Ailton José Silveira de Carvalho*
Túlio Ribeiral Pereira*
Ana Carolina de Oliveira Campos*
Profa. Luciana Resende Allain¹

Introduction

This text shares the results of an extension project carried out by the Federal University of Alfenas, located in Minas Gerais (MG), Brazil, in conjunction with a rural public school in that municipality. The project was developed with students with the objective of creating awareness around forest fragmentation, an environmental problem of great proportions in past decades in the southern region of MG due to the great expansion of monoculture, especially coffee and sugar cane. In addition, the project looks to problematize and discuss possible alternatives for resolving/ mitigating the problem and to raise awareness about the roles (individual and collective) attributed to the diverse social actors in this process.

The choice of the topic of forest fragmentation came out of a process of understanding the damage caused by anthropogenic action on the environment, which has resulted in a decrease in genetic flow and endogamy. This makes for local extinction of the most demanding or delicate species, and favours generalist species in this new fragmented landscape, modifying all of the original community in the region and greatly harming biodiversity.

Since the period of colonization, the Brazilian Atlantic Rainforest, has suffered alterations to its landscape due to forest fragmentation, the origins of which are related to activities such as agriculture, industrialization and urbanization (Dean, 1996). The Alfenas region, MG, presents one of the highest percentages of loss of forest cover in the country, at only 3% of the original (Capobianco, 2001). Consequently, some species that could and should be present in this region, have not been observed for a long time, or may be seen only rarely. Among these are large mammals, reptiles and amphibians.

To develop pedagogical activities in the classroom, strategies were used to stimulate the free expression, imagination and creativity of the participants, so they could feel willing to express their ideas and feelings in relation to this environmental issue. For this, plastic arts were used, including drawings, models and photographic records as well as games, in addition to interviews and the production of small texts.

Methodology

The project was carried out with 6th and 9th grade students, from September until December of 2012. The meetings occurred weekly in the school with one classroom each series. The activities looked to create a web of knowledge, in which each activity offered elements for understanding the others.

The methodology chosen for the development of the project was based on Project Pedagogy (Hernandez, 1992). In this method, work projects are developed related to a practice where an attitude of cooperation prevails. Each pathway is unique. It favours analysis, interpretation and criticism, refuses the idea of only one version of reality, recognizes practice, manual activity and intuition as forms of learning and expressions of knowledge. It values listening and recognizes that the educator is also an apprentice.

A probing exercise was carried out based on observation of the educational community and its relation with the school space. That analysis enabled the elaboration of activities with different methodologies, acknowledging the diversity of students and their ways of learning. In chronological order, the activities carried out (which in some cases are explained), were:

- "What You See"

- **"Think if you could" (PSP):** Slides were presented (a presentation at the beginning and another at the end of the project), with 35 varied images, including the theme of forest fragmentation, where students had 30 seconds to observe and fill out a numbered card handed out. In addition they could point out their perception of the image ("I like it" or "I don't like it"). Among the pictures there were images considered key in the process of analysis (pre and post) of the possible change in perception of students throughout the activities. We considered focal points (PF: naive perceptions in relation to theoretical presumptions of the project), non focal (PNF: conscious and adequate perceptions) and neutral (PN: illegible answers or that gave little suggestion of students' perceptions).

- "Community Map"

- **Game of Threats:** This game occurred in two matches on the school field: First with a pasture pattern and the second with a pattern of traditional coffee and organic coffee. A fragmented landscape was represented, with seven forest fragments around these mat patterns. Before starting, students

* Graduates in Biology - Federal University of Alfenas - Minas Gerais - Brazil.
1. Professor at the Federal University of Alfenas - Minas Gerais - Brazil.

Pre-evaluación

FOTOS	PF	PNF	PN
MAROLO	26,92	61,54	11,54
CASCADEL	53,85	30,77	15,38
FLORESTA	0,00	92,31	7,69
QUADRA DA ESCOLA	0,00	92,31	7,69
FRAGMENTO	73,08	23,08	3,85
FRAGMENTO COM MATRIZ DE PASTO	92,31	3,85	3,85

Pos evaluación

FOTOS	PF	PNF	PN
MAROLO	22,73	54,55	22,73
CASCADEL	36,36	45,45	18,18
FLORESTA	0,00	86,36	13,64
QUADRA DA ESCOLA	0,00	86,36	13,64
FRAGMENTO	22,73	54,55	22,73
FRAGMENTO COM MATRIZ DE PASTO	68,18	18,18	13,64

9º anos

Pre-evaluación

FOTOS	PF	PNF	PN
MAROLO	18,75	75,00	6,25
CASCADEL	81,25	12,50	6,25
FLORESTA	0,00	87,50	12,50
QUADRA DA ESCOLA	0,00	87,50	12,50
FRAGMENTO	43,75	31,25	25,00
FRAGMENTO COM MATRIZ DE PASTO	68,75	18,75	12,50

Pos evaluación

FOTOS	PF	PNF	PN
MAROLO	0,00	93,75	6,25
CASCADEL	31,25	62,50	6,25
FLORESTA	0,00	100,00	0,00
QUADRA DA ESCOLA	0,00	93,75	6,25
FRAGMENTO	25,00	68,75	6,25
FRAGMENTO COM MATRIZ DE PASTO	37,50	62,50	0,00

were divided into animals, obstacles and trees (each one with a representative card). The obstacles were tractors, cars, hunters, agrochemicals, woodcutters, varying according to the characteristic of the pattern. These were threats to animals that moved across the mat, which once caught (or killed) returned to the game in the form of a tree. These were planted between the fragments, making ecological corridors used to travel from one fragment to another. In the corridors as well as in the forest fragments, the animals were not "caught" by obstacles, because they were "safe" places. After the match, the experience was discussed.

- Models

- **Web Activity:** Before beginning this activity, each student chose an animal or vegetable they wished to represent (respective image card). To start, the student with the end of the string presents him or herself and chooses another student to hand the ball of string to, pointing out his relation to that other living being. This process goes on successively until all students are linked to one another, making a great web. At this moment of the activity, a facilitator communicates to the students that a hunter had killed animals (for example: the cobra and alligator) and these had to let go of the string. With the death of the animals, the plants that depended directly or indirectly on them also died.

Results and discussion

The activities carried out allowed for multiple contributions to the process of learning and expansion of critical thinking

in the students involved. This was observed and perceived by facilitators during the development of students' arguments in the discussions (recorded), often after interventions. In the OQV activity it was clear that the experiences lived in some localities influenced the perceptions of each person in relation to their environment. While one area was disliked by one student, it could be the most appreciated by another. Feeling good in a particular environment was associated to relations and experiences rather than to the place itself. We talked about the importance of understanding the school space, and him or herself as part of that environment. Perceptions are re-established by the Community Map, as by locating their homes and environment they understood themselves as part of the context; besides, the MQ provided the students with the capacity to problematize different concepts of forest fragmentation, observing how this is present in their realities.

- **PSP Activity:** From the tables shown underneath, an elevated sample of the PF (focus points) category was observed during the pre evaluation, as the images of forest fragmentation that were presented showed more values in that category. In the post evaluation, there was a decrease in the percentage of PF, since the number of answers that indicated points that should be worked on by the project decreased after the interventions. Comparison between the number of PF obtained in the pre and post evaluation suggest that the different activities developed by the project addressed the points of interest or PF. As well, it suggests that there was a change in the perception of students around forest fragmentation, indicating a greater awareness through the process.

- **Threats Game** : The activity simulated the challenges faced by animals in a fragmented environment. As the students (representing the animals) had to leave the major forest fragments and travel to smaller ones in search of resources, they perceived the difficulties that other living beings face in their survival due to geographical isolation, lack of resources, direct anthropogenic activities (agrochemicals, use of tractors, woodcutters, etc.), plus the intrinsic difficulty related to a particular pattern (most damaging effects to the ecosystem observed in pasture, traditional and organic coffee).

- **Web Activity**: At the end of this activity, students positioned themselves according to the importance that each living being has in maintaining and balancing the ecosystem. This was clearly expressed in the comment: “now there’s only man and pasture left”. The broken web presented a visual impact in this sense, perceived by students through practice; on how interdependent and sensitive the relations that make up the ecosystem are. One can see a parallel between this activity and the importance of other activities in the project, which

allowed us to reach objectives in an integral and constructive manner.

The students’ effort and their development in perceiving the relations of the ecosystem were evident. This highlights the importance of these types of projects in cultivating participatory, critical, argumentative, debating citizens, conscious of their fundamental role in transforming reality.

Bibliographic references

- Capobianco, J. P. R., 2001. Situação atual e perspectivas para a conservação da Mata Atlântica. En: LIMA, A (Org.). Documentos do ISA, v7: aspectos jurídicos da proteção da Mata Atlântica. Instituto Socioambiental, São Paulo. Pp.9-15.
- Hernández, Fernando, 1998. Transgressão e mudança na educação – os projetos de trabalho. Porto Alegre: Artmed.
- Dean, W., 1996. A ferro e fogo: a história e a devastação da Mata Atlântica brasileira. 2da. ed. São Paulo: Companhia das Letras.



Ecuadorean youth and the defence of life

An exercise of consciousness and action

María de Jesús Ramos C.¹



Youth demonstrate to protect Yasuni park from oil exploitation

In the past years we have assisted to one of the hardest crisis in world history, which extends not only to the economic, political and social fields, we are also witness to an environmental crisis to which governments cannot turn a deaf ear.

This is why the defence of nature and humanity which inhabits it is a radical measure that questions the current neoliberal project, no matter what corner of the planet we are in.

In Ecuador there are a series of contradictions that place it under the magnifying glass of international eyes, since even though it is governed under the logic of “good living”, currently there is a policy of harassment and persecution of the social movement, touching on human social rights, and now too there is an attempt against one of the most important biosphere reserves not only for that country, but for the whole world: The Yasuní.

According to scientific studies, The Yasuní Park in the Ecuadorean Amazon region, in the provinces of Orellana and Pastaza, is the region with the most biological diversity in the world. On November 20th 1979 it was declared a National Park. This declaration is made because inside it holds great natural wealth that must be preserved.²

In 2007 the Ecuadorean government implements a conservation plan with the goal to maintain the Ecuadorean Amazonian reserve located in an exploration sector “Ishpingo, Tiputini and Tambococho” far removed from oil exploitation and to respect the territory of groups not contacted in the Amazon. Turning into an initiative with strong international impact in the struggle against climate change. Therefore, the government had committed to leave oil under the earth indefinitely.

But amidst the economic crisis that also begins to touch the country and as a measure to struggle against “poverty”, on August 15th 2013, President Rafael Correa announced the end of the Yasuní-ITT Initiative. Immediately wide sectors opposed the measure, but especially Ecuadorean youth, whom with diverse activities and initiatives rejecting the exploitation of the ITT fields in the Yasuní National Park, lead the articulation of actions like the “wide awake” or “stomps”, marches, meetings etc. all focused on criticizing the extractive model of President Rafael Correa, and to demand respect for life and the constitution of that country.³

These actions and public demonstrations were replicated across the country, in a creative way university students, indigenous peoples, workers, from social movements, went out on the streets to highlight that poverty cannot be eradicated creating more poverty; to show that a life with dignity is also the preservation of nature; the future and hope for a true transformation are in the rebelliousness and courage of Ecuadorean youth.

The struggle taken on by youth and social organizations has reaped a first triumph, the realization of a popular consultation in which the people are asked if they agree that the crude oil from ITT stay indefinitely underground.

Without a doubt, this is a great opportunity not only to preserve such an important natural reserve, but also to nourish the participation of youth even more, to renew the trust to go out on the streets with triumph on the shoulders, and with the security that it is worth struggling for the right to life and to preserve the rights that have been inherited by youths of the past.

1. Member of the Technical Secretariat of the Initiative for Democratic Education in the Americas (IDEA Network)

2. Complete reference may be consulted in: <http://www.amazoniaparlavida.org/es/Parque-nacional-Yasuni/el-parque-nacional-yasuni.html>

3. In the Ecuadorean Constitution it is prohibited to extract crude oil from protected areas and respect for indigenous peoples in isolation.



Intercambio



Fotografías tomadas del archivo gráfico de: www.yasunidos.org

Several organizations, “colectives” and people from all the Equadorian provinces, who are getting organized to defend the Yasuni, human rights and life itself have created “Yasunidos united for life”. This effort includes groups of young people, who have played an important role in defending the Amazon against oil exploitation.