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Citizenship education and environmental education today: thoughts and proposals for its articulation

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Introduction

This study is part of the education of teachers, to contribute to education for citizenship from the environmental education approach. Both environmental and citizenship education claim links with each other, in order to sustain development. We recognise that citizenship is immersed in a social process which depends on values, guidelines and behaviour, and that environmental education may have a strategic function within this. We can add that democracy and the values found in plural societies from the point of view of education for citizenship find specific places for values education in environmental education. Dealing with possible connections that will enable natural science teachers to design future curricular projects in this area, the following results are offered.

Environmental education in the context of scientific literacy and education for citizenship as human rights

The school continues to be the socialisation space *par excellence* for the constitution of critical citizenship with a human profile. But to make this statement true, it is necessary to approach theory in a critical and reflexive way, and the reality of educational practice of teachers. Teachers have the right to be updated in curricular subjects related to the environment. Some of the matters central to any consideration within this conceptual frame are as follows:

1. From the anthropological point of view, human rights list the necessities humans have to live with dignity: natural resources, feeding, dressing, housing, health, etc. Many of these are related to scientific knowledge. But they are also closely interrelated and interdependent: it is not possible to think of some of them while forgetting others. Because we recognise the integrity of humanity, we therefore recognise the integrity of all of their rights. The main bases for this interrelation and interdependence lies in the scientific knowledge that has grown so much in recent years. To understand citizenship from a holistic point of view, close to human rights, we must take this into account. This is essential for the articulation of the environmental sciences in enlarging teachers' competencies. Knowledge of ecology, of the relation between different scientific methods and processes, along with the operations in learning this method, all show the necessary core tools to work on global interdependence and the complexity of environmental education (Hernández y Garabito, 1997).
2. On the other hand, it is not possible to separate environmental education from the context of education for a decent human life. We educate in a line of thought: to provide the means to perceive the relationships that sustain life and to give an account of them. It

is not possible to know how scientific knowledge will evolve, but we believe that it will not be necessary to store encyclopaedic items of data in the memory. We should concentrate on structures to guides us in the world of knowledge, and that help us search for appropriate information when needed, and that give him/her the terms of reference to locate and decide on relevance, related to the conceptual frame in which the information will find its meaning.

This reasoning moves us to analyse the agreement between the terminologies ‘complex thought’, ‘ecological thought’, ‘relational thought’ and ‘systemic thought’ (Hernández, 2003). All of these expressions have the same meaning: a thought that leads towards an integrated view of knowledge; pretending to conjugate the tasks of specialisation with comprehensiveness; it is *interrelated thinking*; able to conceive the whole.

We now try to offer an alternative to environmental education, that surpasses the diminished learning of environmental reality that is fomented by the specialist academic disciplines that impart environmental contents, but cannot achieve global knowledge. This develops the human capacity for thought with a new vision of the world and of reality (in which everything is interrelated). One of the rules for developing ‘ecological thought’ is the contribution of a systemic methodology to integrate natural, social and cultural environments.

3. Education for citizenship welcomes ecologic consciousness, that is to say, it implies acquiring a systemic vision about the fragility of the ecosystem and care for life (Marco, 2003). But this is not the same as dividing environmental education from the quality of human life. The axis around which these rotate is education for the world of relationships. In chart 1, some of the principal items that must be articulated from such a systemic perspective are shown. A more comprehensive explanation of them can be found in Hernández (2003).

Chart 1.- Items articulated from a systemic perspective of environmental education

Educate for life and from life: the world of relationships
<ul style="list-style-type: none"> • To educate for life is to educate for living as relational beings in a complex and evolving world. • To educate for life is to educate starting from the perception of different aspects and dimensions of reality. • To educate for life and from life is to educate our personal and collective identity as beings in relationship, and for harmonic relations between different aspects and dimensions of reality: the human being has a biological identity similar to the other life, but has also freedom, and because of this has responsibilities. • That is why the life and the environment are core integrating elements that claim each other in the teaching-learning of environmental science.

4. Lastly, it is necessary to bear in mind the recent contributions that biology has made to the definition of the subject. The complement between subject and species is assumed (Morin, 2000). The idea of autonomy is inseparable from that of self-organization. Autonomy is not possible other than in terms of a relationship. So the concept of the subject and its autonomy is complex. The idea of 'subject' is needed; and one has to accept that each biological organisation, from a single cell to an ecosystem, needs a computational dimension: stimuli treatment, data, signals, symbols and message treatment. These will let us interact with, and get to know, the outer universe as well as the inner one. The character of the subject is based on the singular nature of its calculation: a calculation that each human makes of him/herself, by himself and for herself. In this way the identity of the subject implies a distinction, a differentiation and a reunification principle. Or it requires the capacity of referring at the same time to oneself and to the outer world and the close environment. The permanency and self reference remain in spite of the transformation, and through the transformations of that environment. (Schwartz, 1994).

From all this, it is deduced that an exclusion principle and an inclusion principle exist and are bound together in an inseparable way. For the exclusion principle, 'anyone can say 'I' but nobody can say it instead of me'. For the inclusion principle I can inscribe 'us' into my 'I', as well I can include my 'I' into an 'us'. The latter implies for human subjects the possibility of communication among others in the same species, the same culture, the same language, and the same society.

The formation of 'collective subjects' is not independent of the formation of personal autonomous subjects, because we are aware that subject identity is achieved in, and closely linked to, collective identity. Both claim each other and are complementary. A complex conception of the social subject is then necessary (Garabito and Hernández, 2001).

In the following section the formulation we offer is shown, referring to the contribution to these aspects from environmental education.

The teaching/learning of environmental issues contributes to the constitution of the social subject

Not every way of carrying this process out necessarily contributes to the integral education of the students. When talking about the constitution of social subjects, we refer to the education of humans as autonomous subjects, and to the formation of social subjects and education for citizenship, or civic education, as the subject of rights and duties involved with the environment.

Scientific literacy, from a historic and critical perspective, contributes to the development of the subjects with an open and flexible attitude, facing social and natural facts and situations. This is so because scientific knowledge and the theoretical models that explain facts are dynamic, and built as changes occur in the scientific, technological, social and cultural order.

The teaching and learning of items related to the environment, from a critical perspective, contribute to the integral education of students, exceeding the expectations of school practice because of only paying attention to conceptual content and knowledge building methods. Environmental education should now embrace critical education, contributing to the constitution of social subjects and able to take positions against the events of environmental reality - and with the ability of proposing to transform these realities (Hernández and Garabito, 1997). The main ideas in this respect are summarised:

1. If the *scientific and critical dimension* is considered, in trying to explain environmental matters we will go beneath the surface, appealing for other factors or causes that lie behind it, away from the apparent causes. A critical education leads us to consider the problem behind the situation, wondering on and questioning the facts and explanations, possibly building new explanations from new evaluative conceptions. The process of scientific building must fix this 'look into the problem' attitude in the students.
2. But a critical evaluation of the facts is not enough if it does not achieved a conscience-oriented answer, in coherent behaviour that collects possible solutions to carry out for common profit for humanity (Llopis, 2000). This is why the *evaluative dimension of the environmental education* is so important (Hernández, 2003). This lets us take a position before the diverse situations of reality, to make value judgments about social projects that look for common profit and the defence of life. This dimension of critical education in the teaching-learning processes of environmental education implies that we implement every attitude that defends life, that we declare our solidarity towards life, that we exercise universal fraternity as brothers and equals to all living creatures, and that we respect the dignity of humans and of all beings, because in nature we are all significant and necessary.

We systematise those values that seem more specifically bound to environmental education (charts 2, 3 and 4). We can infer their articulation when talking about citizenship education in Human Rights, always referred to in education devoted to the formation of values such as solidarity, justice, participation and democratisation of society. The European Union has just approved the directive on the promotion of civil responsibility for activities that are environmental hazardous for water, soils, species or natural habitats. Environmental education is an educational task whose basis, contents and methodologies empower citizens to be aware of their important role in society.

Environmental education makes it possible for students to play a role, live and experiment in cooperating and organising activities in school, as well as the surrounding community. For this reason the learning processes in environmental studies begins with small-scale problems (ecological problems, health problems, ethical problems caused by scientific or technological advances, etc.). These are situations that affect the community and it is possible that the students would want to introduce changes to solve them. Environmental education contributes do the development of pupils in the *political dimension of the critical education*. It contributes the ability to act in order to change society in the direction of fairer social projects.

We aim that Environmental Education and Citizenship will have a transversal axis that is complementary, and that they should claim each other in critical and current education:

- constitution of social subject: the person as an autonomous subject
- constitution of social subject and processes of building knowledge
- processes of democratic participation.

Chart 2. Values and skills that underlie the process of obtaining and elaborating information

- Through the perception of the environment: the value of silence, helping to interiorise and aiding personal grow.
- In the organisation of information: value of the discipline in the work, and the sense of working in a team (individual environmental work is not possible); value the sense of work, not as efficiency measured through monetary remuneration.
- Employment of information on environmental matters: the value of commitment with action, since the learning process implies putting acquired knowledge into practice to improve the environment. This is a proper vehicle for the development of the imagination: environmental problems often demand imaginative solutions.

Chart 3. Specific values for the environmental education

- | | |
|--|---|
| <ul style="list-style-type: none"> • local and planetary awareness of the environmental problems: ethical consciousness • respect towards all living creatures with whom we share the planet • solidarity • respect for human rights and cultures • mutual cooperation • dialogue • responsibility as consumers • aesthetic sense and / or good taste • establishing working rules and observing them | <p>The negotiation, mutual surrender and respect of individual dignity, and the respect of difference</p> <p style="text-align: center;">TOLERANCE</p> |
|--|---|

Finally the ‘ecologic facilitation’, understood as a method for introducing the idea of sustainability in complex human societies (Subirana, 2000), is in agreement with all that has been expressed. There will not be a modern curriculum design if the local environment is not included as a component of the educational system, which can create the dialogue between society and the classroom. Ecology has attracted attention, not only with respect to the natural environment, but also to the human environment. The environment is first the physical frame of a given community; the scenario of relationships and political, economical or cultural realisations coming from the community. It is that physical and vital space around which new mentality and thought emerge as ecologic science develops.

Chart 4. Personal qualities (values and skills) that can be educated through environmental education

Capacity of perception (visual and auditory)
 Aptitude for registration and pursuit of data
 Aptitude for obtaining original information
 Capacity of initiative
 Aptitude for perseverance in the tasks
 Aptitude for gaining collaborators
 Capacity of assuming risks
 Capacity of assuming a commitment
 Capacity of enthusiasm

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