ENVIRONMENTAL EDUCATION IN CHILE, A PENDING TASK[1]

ANDRÉS MUÑOZ-PEDREROS[2]

Introduction

The expression *environmental education* was examined in 1977 by the First Intergovernmental Conference on Environmental Education, called by UNESCO, and defined as: *the result of a re-orientation and coordination of various disciplines and experiences to facilitate an integrated perception of environmental problems, allowing more rational action capable of responding to the needs of society* (UNESCO and UNEP, 1978). In Chile, Law 19.300, Bases of the Environment, defines it as a *permanent, interdisciplinary process for citizen education which recognises values, clarifies concepts and develops the competences and attitudes necessary for harmonious coexistence between human beings, their culture and the surrounding bio-physical medium*. For further information on the concepts, history and perspectives of EE see González (1997; 1998).

Since the 1970s, Environmental education (EE) has been a basic tool in the formulation and execution of environmental management policies, although its incorporation into different areas of education has been very slow. This is in clear contradiction to the need for more decisive institutional action in view of the increasing magnitude and complexity of environmental problems at the local and global level (PORTO-GONÇALVES, 2006). Various decades of EE development in Chile have gone by, and the results obtained are contradictory and in some cases confused. Despite the scarcity of works assessing attitudes in Chile, it would seem that the prevailing strategy is based on cognitive issues rather than values (BARAZARTE *et al*., 2014). Something similar was detected in Spain two decades ago (see RICO VERCHER, 1992). This does not mean that knowledge of the environment is irrelevant; several authors have shown that a positive correlation

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2. Pesquisador da Núcleo de Estudios Ambientales (NEA), Facultad de Recursos Naturales, Escuela de Ciencias Ambientales, Universidad Católica de Temuco. Endereço: Rudecindo Ortega 02950, Temuco, Chile. E-mail: amunoz@uct.cl

exists between knowledge and attitude (YOUNG, 1980; MOORE, 1981; BENAYAS, 1992), while others have documented that such a correlation does not always exist (e.g., HUNGERFORD and VOLK, 1990; HEIMLICH, 2010; BARAZARTE *al*., 2014). The problem is, which comes first? And even more important is to decide how much knowledge to offer and how to deliver it.

In Chile, EE has been practised since the 1970s, at first informally, and since the 1990s as part of formal education. Three main actors have been involved in this development, first the Non-Governmental Organisations (NGOs), then the State, and finally the universities. We offer an analysis of the protagonism, failings and potential of these three actors from the perspective of the paradigm shift (i.e. post-modernism) which has affected Chilean society, and a critical analysis of the EE initiatives of these actors. We have reviewed the contents and results of EE symposia, congresses and workshops held since 1987, and the formal university training offered (e.g. diploma, post-graduate and master's courses) and our own experience in the practice of environmental education by NGOs over more than 30 years. We have also reviewed the Report on the State of the Environment published by the Government of Chile in 2011 and the Country Reports on the State of the Environment in Chile published by the University of Chile (e.g. SQUELLA, 2000; 2001; MMA, 2011; CAPP, 2013). It is important to weigh the progress made by these actors, and consider how the paradigm shift could lead to a new approach to EE in Chile.

Socio-economic influences – more egoistic year by year?

Individual attitudes and values develop in a strong framework of social influence, and even when they are consolidated they will always be subject to modifications dictated by new trends, fashions and doctrines (see BENAYAS and MARCÉN, 1995). At the same time, even if people share the same socio-economic and cultural matrix, there will always be individual differences resulting in differing attitudes. Thus the promotion of a positive attitude towards the environment is a question of values; this brings us back to the essence of EE, which seeks above all to *create an environmental ethic in the population*. If we agree with this we cannot but reject the trend to smother people with information on environmental problems, under the false assumption that in this way we will achieve changes in attitude.

Since the community ceased to be the only point of reference in education, and schools assumed the principal role, it has been hoped that the latter would be the ideal space in which to generate changes in negative attitudes towards the environment (NOVO, 2009). But society also has an influence on its citizens, and not necessarily a positive influence in environmental ethics – quite the reverse; as a result people tend to reproduce precisely the attitudes and values which have led to the environmental crisis. The prevailing neoliberal economic model promotes consumerism and individualism; it is therefore to be expected that new generations will be less and less interested in making personal sacrifices, however small, in order to improve the environment (see GIGLIOTTI, 1992; PERDOMO, 2000).

Roa (1995) explains this paradigm shift and this change in social comportment in terms of the conflict between *modernity* and *post-modernity*. He states that during 19th century, and most of the 20th, modernity focused, among other things, on the use of reason to interpret reality, on the privileged position of objective knowledge, demonstrable through scientific method, on the freedom of man to seek his own destiny, on the blurring of reason as a cause of human unhappiness, on the superiority of mankind over other species and on democracy as the best way of constructing a society. The contributions of Galileo, Descartes and Kant, and of the French Revolution, focus on the use of reason, casting off the superstitious past and seeing the present and future with optimism, warmed by continuous great discoveries to create a modern epoch in permanent evolution. This led modern man to concern himself more with the earthly world than with the divine, and this secularisation was fertile ground for Rousseau, Hegel, Marx, Engels and many other thinkers who proposed various formulas for making this earth a better and happier place. At the same time, scientists and philosophers Nietzsche, Darwin, Freud, and whole movements like Romanticism, contradicted some of these postulates of modernity, however in the long term they have been incorporated into the same trend and assimilated into a knowable double reality (e.g. soul-body, subject-object, conscious-unconscious, infrastructure-superstructure) (ROA, 1995; SAUVÉ, 1999; GARCÍA DE MEIER and RUIZ, 2006).

The industrial revolution ushered in social modernisation, characterised by urbanisation, mass education, specialisation of labour, bureaucratisation, and the development of communications and technology. The passage from a pre-industrial society to modernity implied modifications in value systems, in which traditional systems (in general religious and community visions) were transformed into material systems based on rational thought, science, technology and the idea of progress (DURAND and DURAND, 2004).

The emphasis on the use of reason to frame the human being, and of science to frame reality, dehumanised society to a large degree by relegating feelings, instincts and the imagination to the category of the subjective, implying that they were of secondary importance for science and only of personal interest to the human being. Modernity has enormous faith in the ability of man to change reality, leading to the rise of ideologies so characteristic of the modern age. Post-modernity by contrast presents itself as the revindication of the individual and local against the universal; the liberation of the individual from the utopias which focused on a struggle for an idyllic future, permitting him to live freely and enjoy the present, following his tastes and inclinations (LYOTARD, 1989).

The modern system of values has been under pressure for several decades due to the rise of advanced industrial societies, also known as post-modern or post-industrial. Which, having satisfied their basic material needs and aspirations (economic success, public and individual safety), seek to replace these materialist values, linked to economic security, by post-modern values associated with emotional, aesthetic and intellectual needs based on the hypothesis of scarcity. Individuals and social groups thus start to desire things which they do not possess, which are harder to find, and which are generally related with the quality of life and the social relations that were destroyed by industrial development (INGLEHART, 1996).

Thus, in contrast to *modernism*, the stamp of today's *post-modernity* is lightness, a superficial perception of reality, with an absolute lack of aspirations and transcendence. It arises as a response to modernity, claiming to stand as its antithesis, a posture accentuated by the waning importance of ideologies. Reality, for post-modernists, has ceased to have a value of use and control to improve human life; its only value is for exchange, as if it were a currency. The subject-object relation of the modernists is tending to disappear, and the object (e.g. information technology, TV, social networks) is acquiring the ability to influence the subject. The posture assumed is relativist and changing, determined by comfort and claiming to accept all postures, not in the spirit of pluralism, but because it does not really matter and it is the most practical solution. In terms of everyday social behaviour, we see a tendency to hedonism, seeking consumerist pleasures and postures, living on credit rather than saving, maximising individual rights and passing over responsibilities. The only aim of the individual now is that life should flow on without serious worries, while he enriches it with the fantasy which he wields as a weapon to attack the objective, scientific reality of the modernists. However, these nihilistic manifestations, corresponding to a de-constructivist post-modernity, are not the only expression of post-modernity; there are also transformationist proposals, like that of reconstructivist post-modernity (SAUVÉ, 1999).

The post-modern individual does not feel committed to – hardly even identified with – anything. This disenchantment with modernity betrays a feeling of disappointment, a lack of identity expressed in listless, apathetic, non-participative behaviour. And it has given rise to another attitude marked now by anxiety, characteristic of the post-modern subject who sees that things are changing increasingly rapidly through technologies, which, while saving work and opening up new opportunities for pleasure, bring in their wake a deep anxiety in the face of inevitable new changes. The subject is anxious to get through the present as quickly as possible in order to assume the future, conditioned by the fleeting nature of time, converting his existence into a permanent state of anxiety (ROA, 1995).

This is the new context of EE, a context of debate and a crossroads of ideas. For some, environmentalism today represents resistance to "consumerist" modernity under the hegemony of the United States (TAYLOR, 1997; GUIMARÃES, 2002). However ambiguities persist. EE maintains an antagonistic epistemological duality between the modernity of the determinist behavioural positivism of Deep Ecology and the emerging paradigm of reconstructivist post-modernity called Humanist Environmentalism, marked by the concept of sustainable development, which proposes new forms of relations between the human being, production and the environment (ZAMBRANO and CASTILLO, 2010). The former trend was initially anthropocentrist, but then drifted into bio-centrism or eco-centrism (MARTÍNEZ, 2001), seeking to strengthen the values of a modernity focused on resolving concrete, specific problems. The latter, derived from post-modernism, is based on trans-disciplinarity and seeks to overcome the fragmentation of knowledge typical of modernism while opposing neoliberal capitalism (for further information see MARTÍNEZ, 2007; ZAMBRANO and CASTILLO, 2010).

María Paz Squella analysed the state of EE in Chile with quantitative data more than a decade ago (SQUELLA, 2000). According to her, the three elements which

determined debate on the environment were: (a) a sustained economic policy of extreme neoliberalism, leading to serious environmental damage; (b) political events which generate a very slow-moving environmental discourse; and (c) citizens who display little interest in environmental problems and do not assume the problems as their own, since their concerns are focused on other spheres of national events (SQUELLA, 2001). Today the situation remains practically unchanged, except for the occurrence of environmental catastrophes which have shaken up the three factors, but have not signified real changes in EE. In the Report on the State of the Environment published by the Government of Chile (Environment Ministry MMA, 2011), the development of EE is not mentioned in the Ministry's functions at the level of policies, programmes, plans or standards, but only at the level of collaboration "with competent authorities". Nor does EE feature in Chile's Environmental Institutions, which apart from the MMA include the Environmental Assessment Service, the Environmental Superintendency, the Council of Ministers for Sustainability, the Environmental Courts and the Biodiversity and Protected Areas Service. EE is declared as a transversal line of work and falls under the Environment Education Division (see http://www.mma.gob.cl/1304/). However the report details a public opinion study which showed that 57% of the population surveyed think that environmental information and education is by far the best tool for protecting the country's environment and 45% say that what "discourages" people most from worrying about the environment is "the lack of actions by government and industry".

The mass media call the tune

This lack of interest is moreover influenced by the mass media, which go through cycles of highlighting/forgetting the environment (MUÑOZ-PEDREROS, 2007). More than 40 years ago, Downs (1972) analysed the cycle of citizen attention to issues, and how this cycle affects the issue of the environment, describing five stages: the pre-problem stage; alarming discovery and euphoric enthusiasm; realisation of the cost involved in making significant progress; gradual decline in intense public interest; and the post-problem stage. These cycles have been documented in various countries (HANSEN, 1991; SUHONEN, 1993) and have been triggered by environmental disasters which caused public alarm. They are so powerful in public opinion that they can even condition the government's environmental agenda to some extent, which becomes cyclical in turn (GABER, 2000).

The beneficial or negative role of this influence is debatable, although the social role of the mass media which have discovered and revealed these environmental crises is increasingly evident (MARTÍNEZ, 2003).

For McLuhan (1968), the mass media are understood as extensions of human senses and faculties, and as such they are event-producing agents, not awareness-producing agents. It is clear that the mass media inform, but they also deform, so environmental educators must start with a critical reflection and filter the information which they use (SULAIMAN, 2010).

The mass media are the public's principal source of environmental information, and according to Montero (2004) this is insufficient and subject, in the case of television

at least, to the distortion of rankings. Talking of the press and television, Perales (2010) criticises the presentation of environmental problems as "events" with no background or clear consequences, converting them to sensationalism. He also criticises the superficiality and the negative-catastrophist character of reporting, and finally the sentimentality which disguises the true nature of the problems as well as the preference for distant over local stories, obviating the possibility of going into the context in greater depth.

A noteworthy case in Chile was the severe environmental impact caused by a cellulose plant on a wetland protected by international conventions (see MUÑOZ-PEDREROS, 2004; JARAMILLO *et al.*, 2007). In this case, and although the cycle described by Downs occurred, the wetlands and the dangerous nature of certain industries remained engraved on the public mind throughout the country. In this case EE lagged behind and was overtaken by events. And although local environmental educators now try to make use of the impact on the public caused by this episode, they are obliged to recognise that all the institutions failed. Although no research has been done into changes in public attitudes in this respect, it would appear that a large proportion of the population involved directly or indirectly in the environmental conflict was affected (UCH, 2008).

As Benayas and Marcén (1995) agree, a change of attitude tends to occur when there is a contradiction or discrepancy between what the individual thinks and what he learns from the new information (e.g. specific knowledge or the different points of view of members of his own community). This opportunity for change is not favoured by Chilean schools, since educational programmes are generally knowledge-oriented, and often place little weight on pro-environmental actions (BARAZARTE, 2014). The issues need to be immediate, issues which directly affect the subjects of change (e.g. the cellulose plant and the wetlands). It is therefore important to detect levels of knowledge about the immediate surroundings and compare them with the existing attitude towards the issues. Only then can we think about the right strategies for carrying out an EE programme, an innovation in the curriculum, or proposing participation in nature conservation plans and activities (e.g. MÖLLER *et al.*, 2006).

Environmentalist awareness

Environmentalism is a cultural perspective characterised by concern for nature, in which the environment is seen as a global entity, a resource to which there should ideally be fair access and which should be the object of common responsibility (MILTON, 1996). The growing environmentalist awareness of the average citizen in Chile comes from various sources, not least the work of Chilean and foreign environmentalist Non-Governmental Organisations (NGOs), the influence of the mass media and the obvious air pollution in large cities. Perception of the environment is different in rural areas. One of the main factors to explain the growth of environmentalist awareness, when it occurs, is a change in the values of social groups and individuals, leading in turn to a change in perceptions and attitudes. However the majority of opinion studies are not accompanied by theoretical explanations, a fundamental aspect for explaining the findings of the polls on which they are based (Cf. CERRILLO, 2010).

Inglehart (1996) claims that the rise in environmentalist values is strengthened by post-modernism (this idea is also supported by Castells, 1999). However this is not the case in non-post-industrial societies, where this supposed rise in environmentalist values would be associated with individual safety or welfare, i.e. when it becomes a new material need (DURAND and DURAND, 2004). The external risks perceived by a citizen (sensu GIDDENS, 2000) may arise from natural phenomena (e.g. floods, earthquakes, poor harvests) or be manufactured by human agency, as with almost all environmental risks (e.g. global warming, pollution, use of transgenics). Thus in post-modern societies the greatest fear is of manufactured risks, because there is no known way of dealing with them; but in developing countries both risks are present. So interest in the environment in countries like Chile can be translated into an increase in environmental awareness when it is perceived as a component of personal safety, i.e. as a new material value. No comparison is possible between post-modern individuals in Europe or North American. On one hand they are seeking values and ways of living related to "quality of life", hedonism and a great deal of pragmatism, who appreciate social integration and democracy and for whom a little environmentalism is a consumer good. On other hand, individuals in Latin America in most cases have not yet satisfied their basic needs and are still debating between modernist values (e.g. economic and social safety, savings, solidarity and materialism) and the post-modernist values which have penetrated society, especially young people, through the mass media and social networks. In sum, environmentalism can increase in the post-modernism of developed societies as in Europe, but we do not see clearly that the same can occur in pre-industrial societies like Chile, except in the social or intellectual elite. In Mexico Durand and Durand (2004) concluded that post-modern values are present most strongly in the better-off sectors of society, who have resolved the problem of survival and prioritise quality of life.

In this context we will have to wait and see whether Chile's economic development leads us to a *deepening of post-modernism* in society; and whether in Europe the periodic crises of capitalism and the deterioration of people's level of welfare do not lead to a *return to modern values*. In other words, individuals and social groups with both sets of values coexist, and will continue to coexist for some time, within and between societies. There will be those who reject post-modernism because they have not yet satisfied their material and safety needs, or because they reject these new values for ideological reasons (DURAND and DURAND, 2004), so coexistence is not simple, especially for people who work in EE. This may explain why many environmentalist NGOs include in their proposals a political posture such as opposition to economic and cultural globalisation, the local neoliberal model and socio-cultural injustice (PORTO GONÇALVES, 2001; LEFF *et al.*, 2002).

Even so, there are features of post-modernism which, despite its individualism and abandonment of ideologies, may bring hope for environmentalism, such as an appreciation of "quality of life", imagination and creativity especially in the context of weakened respect for all levels of authority. This may offer greater opportunities for opposing projects which harm the environment even when they are supported by the political and economic powers that be. This new social type is readier to demand his rights, and is doing so publicly. In

this new scenario, environmentalism and EE as a tool for environmental management can play an important role if they are able to introduce innovations into the dominant society, creating new collective identities and, above all, developing the ability to organise and communicate, to socialise proposals and mobilise resources (see MILTON, 1996). But for this EE must be strong and dynamic. In this context, let us summarise the ways in which three important actors in Chile have tried to develop EE: the State, the universities and the NGOs (MUÑOZ-PEDREROS, 1998).

Environmental Education by NGOs

In Chile, experiments in EE have been originated mainly by environmentalist NGOs who have known, practised and developed informal environmental education since the end of the 1970s. However the altruism and the enthusiasm of volunteers which marked these intense experiences have been calmed by age and incorporation into the job market – and by the lack of support and appreciation by the state apparatus and the universities. They were full of magic, creativity and emotion. Very few NGOs systematise their results; their projects and programme depend on their sources of funding. The NGO proposes but the donor disposes, and they are at the mercy of the fashions which dictate the issues which the international agencies want to fund (for exceptions see for example Rosales *et al.* (1996); Iturrieta (1998); Möller and Muñoz-Pedreros (1998); Möller *et al.* (2004). Some NGOs dye their projects green by incorporating EE, but in isolation, not as a transversal objective which will really influence the results. The lack of professionalism of their environmental educators is also an obstacle, and results in badly-prepared, repetitive teaching materials which lack new ideas and techniques (for further information on NGOs and EE see Squella, 2000; 2001).

In Chile, environmentalist NGOs started to become active in the 1960s; they expanded in the following years and reached their high point in the 1980s. As in other parts of the world (GRUNINGER, 2003), NGOs in Chile were a response to the neoliberal model imposed over 30 years ago. However the interruption of most of their funding from international sources has caused them to disappear, or rather to adapt to the scenario and survive on competitive funding, which has made them more technocratic, and less critical and creative (MORGAN, 2001; GRUNINGER, 2003). At the end of the 1990s, all the Chilean NGOs, including the environmentalists, suffered a crisis during what became known as the "lost decade". Various environmentalist NGOs formed a group centred on the International Union for Conservation of Nature (IUCN). They managed to form a Chilean Committee of the IUCN and many of their members served on various IUCN commissions, among them the Education and Communication Commission (CEC) where they shared their EE experiences (the commission has since disappeared). Today these NGOs are severely reduced and have made way for NGOs focusing on other objectives (e.g. woman and gender, economic development and poverty, citizenship and exercise of rights, childhood and youth, territorial development). For example, in 1997 the Chilean Association of Non-Governmental Organisations, ACCIÓN, contained 88 NGOs. Today (2014) it contains 55, of which only three ex-

plicitly state that they are devoted to environmental issues, including environmental education (see http://accionag.cl/).

This weakness is paradoxical when compared with the strength achieved by environmentalist NGOs in many parts of the world, where they have won space on the very ground dominated by corporations, state organisations and political parties (GUIMARÃES, 2002). These organisations have generated new areas of knowledge such as ecological economics and have managed to place the relations between the human race and nature on the public agenda (GUIMARÃES, 2002).

Environmental education and the State

The Chilean economy has always been based on the exploitation of natural resources, especially mining, and environmental issues never attracted much concern until the country started to sign international treaties (e.g. the Biodiversity Convention) and joined economic organisations (bilateral agreements, OECD). As a result, international markets obliged the government to develop environmental policies. This led to Law 19.300 of 1994, which defines EE as a driver of the principle of prevention, promoting behavioural changes in the population. Even at the start, the then president of Chile declared that these would be slow and gradual, and his successor was even clearer in stating that he would not permit environmental considerations to harm economic growth (SQUELLA, 2001). All this fits with the low priority given to EE from the start, although paradoxically it had been promoted since 1990 through the National Programme for the Development of Environmental Education, self-proclaimed as the means destined to promote the development of EE in a national, multi-institutional and multi-sectorial context. Thus the educational reforms of 1990 considered environmental education as a Fundamental Transversal Objective (OFT) of the school curriculum. Seven years later, the programme represented 0.007% of the Education Ministry's budget, a figure which coincides with the minimal interest of the State in the subject (for further information see SQUELLA, 2000). In 2009, the National Policy for Sustainable Development was formulated and some limited gains were achieved outside the ambit of the Education Ministry, in CONAMA (2010) and MMA (2011).

Despite the praise of some Latin American educators (e.g. ENCALADA, 1995) EE has definitely not been properly incorporated into the educational system in Chile, failing to take advantage of the highly systematised structure of Chilean education. In short, although it would be moderately easy to break the inertia, it has not been, and is not being, done. The Chilean Education Ministry has promoted OFT in the school curriculum, which has meant that educational establishments have the powers to draft projects appropriate to the local situation; however the vast majority of primary and secondary school teachers did not cover EE during their own academic training, making it difficult for the study plans and programmes to be applied effectively (MUÑOZ-PEDREROS, 2007).

EE is at an incipient stage in curricular proposals and study programmes, in both primary and secondary education. A rapid analysis of the existing study plans and programmes shows that there are many spaces and moments when the principles of EE could

easily be strengthened in schools, and many environmental themes studied in depth (FUENTEALBA, 2007; GUMUCIO and RAU, 2012), but the opportunity is rarely taken.

All this is aggravated by the manifest lack of cooperation between the State, NGOs and Universities, conceptual worlds which rarely touch. Several Environmental Education Symposia have been held in Chile, where it has been stated repeatedly that there is a need to formally structure environmental education into primary, secondary and higher education, and to move towards a new, integrated, experiential type of education, which will allow ecosystem processes to be understood in a more integrated framework (MUÑOZ-PEDREROS, 2007).

Although many primary and secondary schools and institutions are trying to introduce the environment into their activities, the lack of EE training in the educators is a serious obstacle to these good intentions.

Traditional schooling predisposes us in favour of the rational-empirical ideal, which does not take into account intuition, emotiveness or creativity;education should rather be multi-faceted and stimulate all the capacities, based not only on instruction (to know more) but also on personal formation (to be more) (VACACELA, 1995).

It is evident that recent Chilean governments have not possessed a clear political will to address the subject of EE in schools. There is no sign of large-scale teaching, and the teachers themselves are not sufficiently trained. Meanwhile, Law 19.300 relegates EE to a very minor role – it is a long step from what is proclaimed to what is actually done. For example, in the latest Country Report on the State of the Environment in Chile, produced by the University of Chile with the support of various public services and investigators from other universities and organisations, the subject of EE received exactly 34 lines in a study of 589 pages (CAPP, 2013); seven of these were devoted to the only (and partial) achievement with which the report credits the State, namely the Environmental Certification System for Educational Establishments (SNCAE).

A study published by Aguayo (2005) compared environmental knowledge in primary school students from certified and uncertified schools, and found no significant differences between them with respect to knowledge about the environment. The certification system was assessed by Moyano *et al.* (2007), who compared students from certified versus uncertified establishments and found significant differences only in perception of the environment, but not in changes of attitude. Other results of this study recorded deficiencies in the environmental projects of certified establishments, with 64% of the students saying that their participation in the activities of the environmental committee is regular or low; 90% said that they did not know about or had not participated in an environmental diagnosis and 88% said they did not know about or had not participated in the activities of the action plan developed by the establishment (MOYANO *et al.* 2007). Seven years later, Barazarte *el al.* (2014) confirmed the poor results of this certification and recorded that the secondary school pupils of certified schools in Chile's second-largest city did not display greater environmental knowledge or better pro-environmental behaviours that pupils in uncertified schools. Clearly the schools lack professional environmental educators, and a bureaucratic, scarcely applied certification system is no substitute. Bravo (2011) recorded that primary teachers in a large city in southern Chile displayed little

pedagogical knowledge, and that the majority do not have general pedagogical knowledge of teaching strategies for achieving the objectives of Environmental Education.

Environmental education in the universities

Since the 1970s, Chilean universities have incorporated a certain sensitivity for the environment which has translated into courses (including post-graduate courses) linked to flora and fauna and the conservation of natural resources. Many students became enthusiastic and asked for more, but the university did not have a coordinated environmental sciences curriculum to offer; unfortunately all that pedagogic creativity was wasted (see ENCALADA, 1995), and they failed to assume the role of training environmental educators. A study carried out in 1998-1999 by Vliegenthart, Paredes and Tarifeño (2000) presented discouraging results: of 15 education faculties analysed, not one was making systematic efforts to incorporate EE into the teacher training curriculum, while only 2% of pedagogy students in the years 1998-1999 did an optional subject related with the environment. This shows the almost zero importance attached to this subject in teacher training in Chilean universities. Two thirds (66%) of the university teachers recognised that the quality of EE in their universities was low, and 80% considered it to be a high priority, raising the optimism of these authors – sadly unfounded – to make the necessary changes. In 2013 there was still no doctorate programme in Environmental Education in the whole of Chile, and only one master's programme. Environmental education has not yet been incorporated into the existing curricula of teacher training courses, and although there is as yet no comparative study such as that described above, a look at the study plans of the education faculties in internet is sufficient to show that EE continues to be conspicuous by its absence. It is a mystery why there is practically no opportunity for formal training, when there is supposedly a demand for environmental educators (e.g. in educational establishments, protected natural areas, municipal programmes, ecotourism initiatives, NGOs).

EE has its own language, which is not spoken clearly in Chilean universities. If we examine the few EE texts which have emanated from the universities, we will see that they do not really address EE; they are useful, but for teaching land or forest conservation or waste recycling. They provide knowledge, but do not encourage the search; they do not consider simplicity, self-teaching, and the magic of curiosity, or the everyday language and interpretation of the environment. Formal university education could have taken advantage of the pioneering experience of the environmental educators of the NGOs, but that experience is viewed with disdain as light or irrelevant, or confused with environmental consultants. So there is a tendency to repeat forms and re-tread old paths, trapped in educational paradigms which repress us every day. Worse still, the teachers whom we train in the lecture rooms repeat this format in schools, passing it on to the children and creating a vicious circle which we urgently need to break. The adaptation of Chilean universities to the impositions of the neoliberal market and globalisation has led them to evolve a type of university managed like a company. As such it reproduces inequalities, and continues to train human capital to function in terms of the consumption

economy and the information society (SANTOS, 2012; GUMUCIO and RAU, 2012), to the evident prejudice of critical humanist education.

The professionalization of environmental education

The professionalization of EE has raised many questions which were addressed in the Second Iberoamerican Congress on Environmental Education: After the Tbilisi Footprint (in 1997) (Round table discussion on the Professionalization of Environmental Educators). For example, García (1998) proposes basic elements for this professionalization and explains that it is a process of empirical or academic training through which the student acquires training, enabling him to apply the principles of EE at different levels (formal, semi-formal and informal). This enables him to plan, develop, evaluate and manage EE projects. González (1998) analyses the professional diversity of environmental educators, and proposes that professionalization does not imply adopting a defined perspective for viewing the world. He proposes four lines of training: epistemological-theoretical, critical--social, ecological-environmental and pedagogy. Muñoz-Pedreros (1998) proposed that formal training is a basic requirement for professionalization, and Rodríguez *et al.* (1998) presented the case of the integration of EE into Spanish universities.

It is clear that to bridge many of the gaps described we need high quality environmental educators, true professionals. Requirements for such professionalization include: a) Training in a *curriculum approved* by a higher education establishment; b) Being informed about and/or linked to the productive world, since it is impossible to practice as an EE educator in an "aseptic" environment – the training imparted must be connected to the environmental conflicts arising from the prevailing development model in the country, and the educator must be *capable of interpreting* his surroundings as a whole and without confusing his role (SAUVÉ, 1999); c) Being well equipped with specific materials which satisfy his requirements and are a source of inspiration and aid. Materials must also be produced for the educator-family (school community) relationship, not just oriented towards the educator-pupil relationship; d) Informed about and ideally linked with the relevant organisations of the State apparatus, so that he is not seen merely as an *environmentalist* but also as a genuine educator and *agent for change;* e) A clearer profile of the environmental educator, shaking off the stereotype of the teacher and prepared to be humble (LUJE, 1995); a *facilitator* with *panoramic vision* rather than an instructor, since however good the curriculum, it will be useless if the educator does not understand his broad, complex, transcendent social role; f) A profile of practical environmental education, which stresses the teaching of environmental values to avoid confusion with natural sciences or biology teachers. At the same time the environmental educator must offer a concrete *model to be imitated*, with defined values. In other words he must be *fully committed* to what he teaches and not adopt the position of an "observer" or of "false objectivity based on non-involvement" (further arguments in CADUTO, 1992).

EE training in Chile is not merely stagnating; it has lost ground and there are still no professional environmental educators. If there were, the universities, learning from the decade-long experiences of NGOs, should already be offering options to those who

wish to devote themselves professionally to EE. For example, teacher training courses could offer minors in EE, for either primary or secondary teaching; they could also offer a continued education system, such as post-graduate courses for teachers who took the EE minor, which could also include other professionals who are interested in formal training. This would have a big synergetic effect on the three actors mentioned above, since the State and the NGOs would be able to call on professional environmental educators.

Final considerations

The Chilean State shows no signs of substantial changes towards developing either the quality or the cover of EE. However a new factor has been found to exert an important influence on EE development, namely the demands of international agreements (e.g. OECD) which could accelerate change in the right direction through environmental certification. The universities are a suitable arena for the development of environmental awareness (cf. SOSA *et al*., 2008; GUMUCIO and RAU, 2012), even if large segments of students in elite universities in Chile favour the option of economic growth over protecting the environment. Indeed, GUMUCIO and RAU (2012) believe that it will be these elite students who will occupy the positions of power in the near future and are sure to adopt anti-environmental postures. However the mass student movements of 2008 and 2011 (see MAYOL, 2012a, 2012b) might introduce educational changes into the debate, which will support environmental issues and create a space for EE. This might also open a space for the return of environmentalist NGOs in the strength which they wielded in earlier decades. Finally, it must be considered that social practices are changing and that this is an opportunity to promote emancipatory education (BERNAL, 2012), linked to economic and political processes (cf. SWYNGEDOUW, 2011) matching this paradigm shift with citizens who assume a more protagonic role and channel post-modern criticism without casting aside modern values.

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ENVIRONMENTAL EDUCATION IN CHILE, A PENDING TASK

Resumen: En Chile la educación ambiental se ha desarrollado en forma lenta y por caminos no vinculados desde tres actores relevantes: el estado, las universidades, y los organismos no gubernamentales. El bajo interés por su promoción parece deberse al paradigma posmodernista que está permeando una parte de la sociedad chilena y al modelo de desarrollo impuesto que relega lo ambiental a un rol secundario. Las prácticas sociales están cambiando, lo cual es una oportunidad para un encuentro entre estos tres actores en pos de promover una educación profesional y adaptada a este cambio de paradigma con ciudadanos más protagónicos que, sin desaprovechar valores modernos, encaucen la crítica postmoderna.

Palabras claves: Educación ambiental, posmodernismo, actores involucrados, Chile.

Abstract: Progress in environmental education in Chile has been slow and uncoordinated. The three main actors involved are the State, the universities and non-governmental organisations. The lack of interest in promoting it appears to be due to the post-modernist paradigm which permeates a part of Chilean society, and the dominant development model which relegates environmental matters to a secondary status. The present is a time of changes in social practices, and therefore an opportunity for these three actors to come together to promote professional education which matches this paradigm shift towards citizens who assume a more protagonic role and channel post-modern criticism without abandoning modern values.

Key words: Environmental education, post-modernism, actors involved, Chile.

Resumo: A educação ambiental no Chile desenvolve u caminhos lentamente e sem relação de três partes diferentes: o Estado, universidades e organizações não governamentais. O baixo interesse na sua promoção parece resultar do paradigma pós-moderno, que está permeando uma parte da sociedade chilena e do modelo de desenvolvimento que relega o imposto ambiental a um papel secundário. O presente é um tempo de mudanças nas práticas sociais e uma oportunidade para que, portanto, esses três atores a se unirem para promover a educação profissional, que corresponde a esta mudança de paradigma para os cidadãos que assumem um papel de canal mais protagonic e crítica pós-moderna sem abandonar valores modernos.

Palavras-chave: Educação Ambiental, pós-modernismo, os atores envolvidos, Chile.