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### Trends and Dilemmas Facing Environmental Education in Portugal: From Environmental Problem Assessment to Citizenship Involvement

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## Trends and Dilemmas Facing Environmental Education in Portugal: From Environmental Problem Assessment to Citizenship Involvement

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**ABSTRACT** Environmental education (EE) emerged in Portugal as an organized field of collective action about 30 years ago. At this time of the return to democracy, major social and environmental changes had begun to occur. Yet, after 30 years of EE, together with significant improvements in the education system and curricula, the real impacts of these mostly voluntary and aggressive efforts aimed at preparing future citizens to deal effectively and sensitively with environmental problem solving are not yet evident. The pathways and social context of these efforts aimed at upgrading EE in Portugal, and their apparent failure to meet their objectives, form the basis of the analysis in this paper. The authors examine the results of a survey questionnaire sent to 15,000 public and private schools all running projects formally associated with both EE and education for sustainable development (ESD). The primary purpose of the analysis was to identify the trends, constraints, and potentials for these EE/ESD projects and initiatives within primary and secondary schools. In addition, perspectives as to the emerging trends in ESD in Portugal are discussed, bearing in mind the shifting educational context.

**KEY WORDS:** Environmental education, Portugal environmental education, sustainable development education in Portugal, education for sustainable development

### Introduction

Environmental education (EE) was once confined to the realm of governmental and non-governmental organizations engaged in alerting and mobilizing environmental issues. Subsequently, EE has expanded within the educational system, joining more comprehensive and inclusive topics such as citizenship, health,

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social relations, and science more generally (Garrard, 2007; Jacobi, 2003). At the same time, the persistence and prominence of environmental problems in contemporary societies and their association with specific scientific areas—notably the natural sciences—have guaranteed that environmental issues hold a high-profile place in current educational programmes across all age ranges.

As the environment became not only a specific field of the *lifeworld*, but also an area of collective action and policy-making, so environmental issues came progressively to be perceived as developmental problems (Redclift, 2005, 2009). As such, and to the benefit of the emerging field of sustainability, environmental matters came to be seen by the public as having equal status to the economy and other socio-political themes such as justice and public health. As a consequence, a more comprehensive and over-arching idea of 'education for sustainable development' (ESD) has taken over, albeit with little agreement over its definition (Jacobi, 2003, Meira, 2005; Meira & Ramos Pinto, 2008).

EE emerged in Portugal some 30 years ago as a field of collective action for the sake of overall environmental improvement. The National Commission for the Environment (CNA) was established in 1971 as the first governmental organization devoted to EE and information on environmental issues. The CNA brought together the participants of the Portuguese government delegation to the UN Conference on the Human Environment in 1972, at the same time launching the first initiatives to bring environmental concerns into the curricula. The schooling boom that followed the democratic revolution (1974) encouraged the enlargement of activities promoting environmental issues and the conservation of nature, along with the support of the many newly formed environmental NGOs. New political, social and economic conditions made possible the country's reintegration into the international community and entry to the European Economic Community in 1986.

It was only by the mid-1980s that EE initiatives grew more formal, making their way into the curricula under the auspices and sponsorship of the European Union.<sup>1</sup> Important changes in school curricula were confirmed by the Basic Law for the School System in 1986, while a specific governmental organization devoted to environmental information and education (the National Institute for the Environment) was created. These initiatives from both education and environment reached a highpoint by the mid-1990s, when more financial resources were made available to promote EE by schools and non-governmental organizations. The training of school teachers matched the pioneering of environmental topics into the curricula.

This early promise soon evaporated. Shortages of financial resources, drawbacks in preparing teachers for EE and organizational disengagement and dysfunctions between the education/environment policy sectors dashed the initial optimistic expectations. A recent survey, focusing on EE activities throughout the 1990s, suggested that the shortcomings of EE in Portugal resulted from an accumulation of failings: deficits in the specific training of teachers, shortages of organizational resources and lack of acquired professionalism, inefficient integration into the curricula and a chronic deficiency of formal assessment of EE activities (cf. Martinho, 2003, p. 81). One may add to these difficulties a failure in interaction and sharing EE/ESD initiatives with each other and communities, and limited vision and political will on the part of successive governments towards this policy issue. These are, of course, critical success factors associated with the all important social context,<sup>2</sup> which seem to be crucial for the Portuguese case. Arjen Wals has noted how 'manifestations of "unsustainability" are often quite different and deeply rooted in local histories and political and cultural traditions' (Wals, 2009, p. 16).

This paper in part aims to describe and appraise the social processes surrounding the evolution of EE in Portugal. In so doing, it looks at recent changes, which strengthen the role of the school system in citizens' environmental training and in the integration of EE into the wider dimensions of civic and moral education. This covers the rise of the more encompassing notion of ESD, which recognizes 'that awareness raising and experiences in nature is not sufficient in itself to lead towards a more sustainable future' and seeks 'to view the school as not only as training grounds for environmental management, but to showcase it as a site of good practice in EE for the community' (Henderson & Tilbury 2004, p. 7).

To achieve these two objectives, we made use of multiple techniques and methods of research and data collection. These include document research and data collection in relevant governmental and non-governmental organizations (the Education and Environment Ministries, local administrations, NGOs and private sector companies); interviews with experts and leaders of model cases of EE/ESD initiatives; and survey data derived from a questionnaire applied to around 15,000 public and private schools from basic to high school grades.<sup>3</sup>

The questionnaire survey consisted of two booklets. Booklet A sought to establish the main features of the overall school curricula, and the activities around specific sustainable practices within each school (e.g. recycling, water and energy saving). Even where there were no responses relating to EE-/ESD-specified projects or activities, this questionnaire probed the school's socio-geography, namely its ethos regarding environmental issues, as well as its facilities and practices that had a bearing on environmentally responsible behaviour. Booklet B aimed to identify and characterize EE/ESD projects either directly in place or through adjacent curriculum areas: citizenship education, health education, cooperative behaviour, caring attitudes and outlooks. In this way, the two booklets covered both the wider interests and learning cultures of each school as well as the relationship to specific and itemized EE/ESD activities.

The complexity of the Portuguese school system meant that a high level of effort was required to collect reliable answers. Accordingly, the survey questionnaire was applied over a 9 month period (June 2005 to February 2006) by establishing contact with schools based on an official list provided by the Ministry of Education and by Regional Education Secretaries in the autonomous regions on the Portuguese offshore islands (Madeira and Azores). Further contacts by traditional mail, e-mail and telephone were also made, in order to obtain the greatest number of full and reliable responses, and to achieve a representative sample of Portuguese school reality. This objective was attained by taking into account parameters such as school size, level of education and region proportion of responses: 51.1% (Schmidt *et al.*, 2010b).

The challenge was to transcend the chronic lack of systematic data and research over what was happening in the wider realms of EE/ESD, what were the actual EE/ESD projects that were being promoted, the actors involved and their expectations and any meaningful results being obtained by EE/ESD projects. With new strategies for sustainable development being discussed at the EU and at member state levels, the adoption of the United Nations Economic Commission for Europe Strategy for ESD in Vilnius (2005) and UNESCO promoting a Decade of ESD, it is timely to portray the pathways and key features of EE in Portugal as well as possible changes to the delivery of EE/ESD in the coming decade (Schmidt, 2006). In particular, because the Vilnius Strategy, as well as

EU and UNESCO guidelines, directives and recommendations, all 'recognize that implementation of ESD is driven by countries' own priorities and initiatives addressing their specific needs and circumstances' (Wals, 2009, p. 21), it is appropriate and timely that we take stock of the Portuguese experience.

A final aim of this paper, therefore, is to make a systematic description of EE/ESD as it is being carried out in Portuguese schools. We focus on how schools integrate new trends emerging in this area, and also on the difficulties and strategies schools face in order to gain a foothold in the socio-political fields of broader environmental mobilization. We also pay attention to the topics chosen as *leitmotiv* by educational and training activities, in order to examine how close they are to, or distant from, the evolving idea of EE as encompassing a notion of responsible citizenship.

### EE or ESD?

The concept of EE emerged in the 1960s as a response to the growing evidence of environmental degradation and its relationship with technical and scientific progress, and as a reaction to the tendency to increase the unsustainable use of natural processes and natural resources. Since then, the topic has made its way into schoolbooks and into school activities independently of the ups and downs that environmental problems and issues have known in political and public agendas (Schmidt *et al.*, 2010b; Wals, 2009).

The omnipresence of high-profile environmental problems in contemporary social life and political debates, such as ozone depletion, global warming, the contamination of watercourses, atmospheric pollution, forest devastation, the destruction of habitats and decline of biodiversity, continue to demand changes in attitudes and social behaviour, changes that should help to generate more responsible management of natural resources and the environment. This debate is also asking for much greater social justice, not only in the sense of improved inter-generational equity, but also in availability and use of natural resources by people and social groups at an intra-generational level (Ferrão & Guerra, 2004; Redclift, 2009).

The road to a new area of education and civic responsibility has thus been forged and strengthened by linking environmental attitudes and behaviour to human rights, social justice and to equity (Garrard, 2007; UNESCO WCESD, 2009). Actually, EE has played a distinct role in the formation and education of citizens, in a process aimed at making individuals gain awareness of the environment and acquire knowledge, skills, values, experiences, motivations and commitments to make well-informed decisions and to take responsible action. In this sense, EE has sought to produce a citizenry that should be knowledgeable concerning the biophysical environment and its problems, knowing how to help solve these problems, and motivated to work towards their solution (Stapp *et al.*, 1969). Consequently, EE was regarded as a progressive and dynamic process so as to achieve the goals highlighted in the Tbilisi Declaration (UNESCO, 1978):

- (1) 'to foster clear awareness of, and concern about, economic, social, political and ecological interdependence in urban and rural areas;
- (2) to provide every person with opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment;

- (3) to create new patterns of behaviour of individuals, groups and society as a whole towards the environment'.

However, despite the undeniable commitment of many activists and professionals involved in EE projects and action, ecological imbalances and environmental degradation persist, modern era over-consumption continues, while endemic poverty and inequality plague the greater part of the world's population. Subsequently, a well-balanced and sustainable approach to ecological development, as proposed by the Brundtland Report, would require 'that all human beings' basic needs should be satisfied and that everyone should have the opportunity to satisfy their aspirations for a better life' (W.C.E.D., 1991 (1987), p. 55).

Departing from the original idea of sustainable development, ESD arose in conjunction with the UNESCO initiatives for the Decade of ESD. ESD includes all the principles of EE itself. But it aims to go further in that it promotes directly changes in people's living in order to alter behaviour to achieve sustainable living, i.e. living in a way that seeks to avoid depletion of non-renewable resources which future generations will also need. To pursue these attempts, some authors even talk about 'teaching for sustainability'. Developing the idea of 'laboratories for sustainable education', they elaborate not only as multidisciplinary but also a living experience approach (Schallies & Eysel, 2004), going back to a set of parameters that should characterize ESD first advanced by Huckle and Sterling (1996).

This orientation is explicitly valued by other authors. Tilbury (2003, p. 35) argues that, if education for sustainability means to improve the quality of life, then we need to reflect not only upon 'human-environment relationships', but also on 'human-human relationships'. That is, 'learning to prevent the destruction of ecosystems, biodiversity threats, loss of forests and fisheries, air and water pollution' is not enough, if we do not also address 'issues of intellectual property rights, over-consumption, increasing poverty and inequality, exclusion and alienation, social conflicts and violence, aids, health, trade and aid as well as cultural erosion' (Tilbury, 2003, p. 35). Thus, ESD in schools involves alternative approaches to teaching and learning by means of integrating not only different goals (for instance, conservation, social justice, appropriate development, democracy), but to articulate them 'into a vision and a mission of personal and social change' (Gough, 2006, p. 2). This means it involves developing 'the kinds of civic virtues and skills that can empower all citizens and, through them, our social institutions, to play leading roles in the transition to a sustainable future' (Gough, 2006, p. 2), focusing on wider ethical changes aimed at equity, justice, democracy, respect, action spheres and changes of socioeconomic and political structures and lifestyles (Garrard, 2007; Hesselink *et al.*, 2002).

This is why Bhandari and Abe (2003) refer to ESD as an emergent educational paradigm aiming to go beyond the old social development educational paradigms, including the 'new environmental paradigm' of the 1970s (Bhandari & Abe, 2003, pp. 13-15). These authors describe the differences of content, context, method, action and values between EE and ESD as 'profound' (Bhandari & Abe, 2003, p. 23). The educational context of ESD, therefore, goes far beyond EE by making education a broader, lifelong process that can happen anytime anywhere. The method is said to be interdisciplinary, learner-centred, experiential and inquiry-based, though ESD places more stress on partnership and systemic thinking.

While EE views environmental protection in social and economic contexts, the environmental sensitivity promoted by ESD is based on the inseparability,

interconnection and interdependence of the three Es highlighted by the concept of sustainable development (economy, environment and equity). And while EE is more community based, the context, partners and topics of ESD are not only locally relevant, but they cross society. ESD is horizontally entrenched in economy, environment and equity, and carries far-ranging implications through vertical linkages from community level to regional, national and global levels. Thereby, ESD explores better the links between students' personal lives, the wider environment and development concerns (Bhandari & Abe, 2003, pp. 16–23).

Therefore, ESD is more concerned with essential democracy and should be linked to the whole curriculum. It aims beyond the school, to the local community. Within this logic of action, an emphasis on student-centred learning through discovery and experimentation, team work and co-operative learning—highlighting environmental issues, occupational health and safety, welfare and social relations—should reshape the internal environment and the management arrangements of ESD in schools.

Some authors insist that the two (EE and ESD) paradigms have just one goal (McKeown & Hopkins, 2005), and hence that they are better seen as a complement to, not a substitute for each other. While ESD appears to be more holistic by more explicitly embracing social, economic and intergenerational dimensions, in practice EE can turn more radical in its social critique, due to its holistic philosophy and insistence upon the human–environment relationships. As a consequence, ESD would receive greater acceptance while implicitly embracing economic growth and only tangentially questioning structural issues of social inequality (Binstock, 2006, p. 3).

Nevertheless, as Jickling and Spork (1998, p. 325) have noted, 'the creation and adoption of a promising new environmental vision should instead be viewed not as an aim of education, but as one of the logical and practical outcomes of an educational process'. This is why, for the analytical purposes of this article, both EE and ESD fulfil the most important parameters of education necessary to enhance environment and development. Enhancing civics and citizenship towards higher levels of sustainable development also means promoting participation and the commitment to contribute to achieving a more fundamental human–environment equilibrium, as well as equity between different communities, whether rich or poor, developed or developing.

This particularly applies to the Portuguese case. Within the European context, the ongoing development model of Portugal presents a lot of features that result from a sudden and short-term change of a mainly poor, rural society—actually, with no motif for serious environmental concerns—into a modern society with plenty of the deficits and shortcomings of modernization. This ended up creating a special vulnerability and sensitiveness on the part of the Portuguese people to disruptive economic and social transformation (Schmidt, 2005).

After more than 30 years of EE in Portugal, it is not easy to see its real impact upon Portuguese society. Surveys of environmental behaviour and attitudes carried out in the late 1990s revealed that younger generations were simultaneously very concerned with the state of the environment, but paradoxically also exhibited an astonishing deficit of information and knowledge either on momentous environmental issues or on environmental questions in general (Nave & Fonseca, 2004; Schmidt *et al.*, 2004). Furthermore, respondents mostly declared that they had never participated in any kind of civic initiative or collective action for the sake of the environment (Schmidt *et al.*, 2000). At the end, EE seems to

bear the same fate of formal education in Portugal, being submerged into a deep sea of illiteracy, long and widely affecting the people at large (Benavente, 1996).

This paper seeks to determine the main constraints and opportunities of public policies and state action in this area by appraising the current situation of EE/ESD in Portuguese schools. The aim is to throw light on the profile, trends and sustainability of EE/ESD initiatives that have been carried out to date by public and private schools at all levels of education.

### EE in Schools

Although we made use of multiple techniques and methods of research, most data analysed for this article come from a survey questionnaire covering a wide range of public and private schools from basic to high school grades all over the country. This is drawn from an official list provided by the Ministry of Education.<sup>4</sup> Many EE/ESD projects in Portugal get support and leadership from outside schools. Actually, 40% of the projects run by schools in our data base have non-school organizations as point of departure and support. Another survey, using a different questionnaire, was also sent to non-scholar promoters of EE/ESD. This second survey reveals that municipalities, environmental NGOs and governmental organizations of the environmental policy sector are the main promoters and supporters of EE/ESD projects from outside the school system. In Portugal, municipalities have to respond to environmental performance demanded by EU commitments, for instance, separate domestic waste collection and recycling. The school community is the first target for EE/ESD projects run by non-school organizations, mainly primary education students, but including teachers. Yet, less than 14% of the total replies to the questionnaire of non-school organizations refer to local community or other specific non-school groups as targets. The great majority of projects examined cover the school community as exclusive targets (87%), though they preferably choose younger students as targets (Schmidt *et al.*, 2010a). This means that, in practical terms, the school is almost the exclusive setting for EE/ESD activity in Portugal.

#### *EE/ESD Projects in Schools (I): Organizational Dimensions*

Schools are not equally mobilized by EE/ESD. Figure 1 shows the percentage of projects surveyed per type of school, considering three main categories: (i) level 1—kindergarten and first cycle of basic education; (ii) level 2—second and third cycles of basic education; and (iii) level 3—third cycle and secondary education.

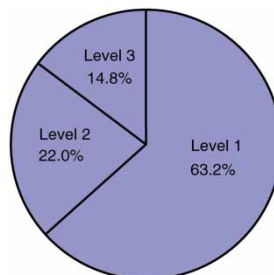


Figure 1. Projects according to level of education of target students.



Figure 2 explains the percentage of schools of each type in the survey, namely those schools which answered to our minimum criterion declaring to have at least one EE/EDS project in action.

Although the majority of EE/ESD projects (63.2%) are carried out in the first stage of basic education and pre-primary schools, in relative terms, schools of higher levels are much more mobilized for EE/EDS initiatives. Thus, although establishments grouped in levels 2 and 3 represent only 13% of all schools, the results in Figure 2 (schools with at least one project in action), or those in Figure 1 (recipients of projects), are hardly surprising. In effect, EE/EDS projects are predominantly aimed at students in the first stage of basic education (48.4%) and pre-primary (32.9%) schools. This once again emphasizes the child-oriented trend that persists in EE/ESD in Portugal.

EE in Portugal is especially committed to the younger age and lower school levels, as confirmed by Figures 1 and 3, and is further verified when we look at the data as a whole, taking into account the overwhelming weight of the first stage of basic education and pre-primary schools. When compared with the number of schools of different levels of education and the number of projects per school, EE/ESD in Portugal seems to gain more diversity.

The frequency of the local community as targets of EE/EDS projects run by schools does not exceed 7.1% of the projects examined here. This is even less than the case of projects promoted by non-school organizations. Reaching beyond the school walls seems to be a much stronger obstacle than the intangibility of age barriers.

Figure 4 looks at where the initiative to start EE/EDS projects first arises in schools. The accumulated percentages in excess of 100% means that EE/EDS projects most often start as a joint enterprise, frequently including both inside and outside school agents.

It is up to teachers to take collectively (57.5%) or individually (19.9%) the lead and start-up of projects. Initiatives to launch EE/EDS projects may come from

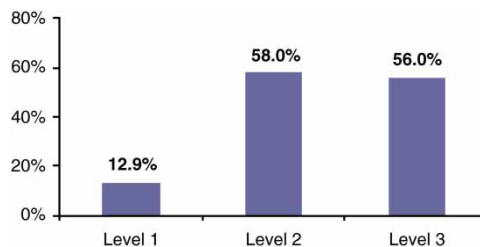


Figure 2. Percentage of schools with at least one project on course, according to level of education.

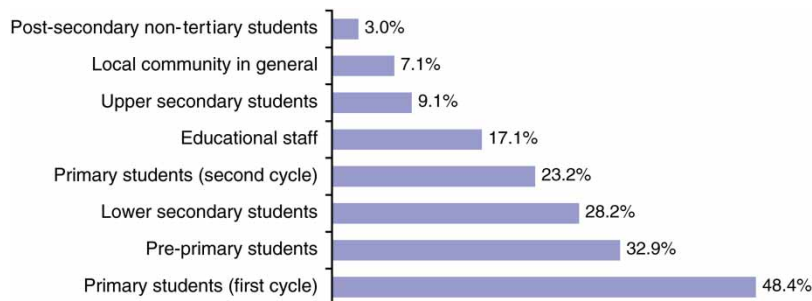


Figure 3. Target people of EE/EDS projects run by schools.

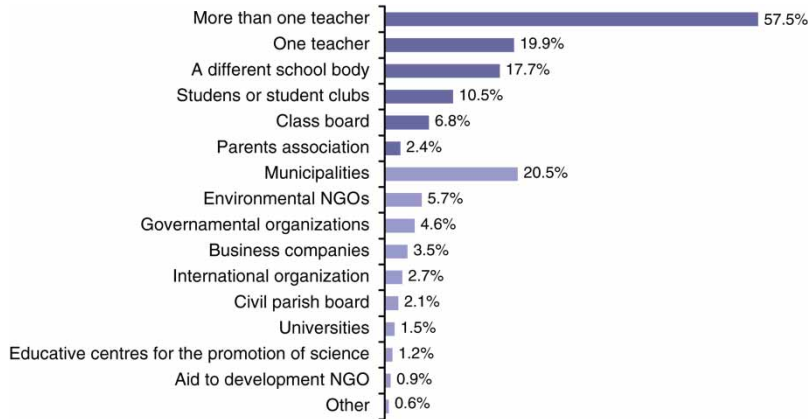


Figure 4. Who take the initiative of EE/ESD projects run in schools.

school management bodies (for example, school direction boards, school councils, course assemblies, scientific areas) amounting to 17.7%, from students clubs (such as clubs of environment, or forest care) amounting to 10.5%, class management boards (6.8%), and parent associations (2.4%).

Municipalities stand out among the non-school agents (20.5%), followed by environmental NGOs (5.7%), governmental organizations (4.6%), business companies (3.5%), together with a multitude of other participants and partners that, in one way or another, contribute to bolstering EE/ESD in schools by means of individual or joint initiatives.

Sharing an approach to interdisciplinary and inter-institutional work, EE/ESD projects seem more proficient if run by more diversified partnerships. Thus, networks and partnerships can contribute to integrated objectives and so strengthen the outcomes of projects. Indeed, more than half the projects in the survey (52%) start up and engage in activities that are established by networks covering different subjects and which share a wide range of topics and objectives.

According to Figure 5, these networks, basically, are confined to three broad categories, depending on their international, national or mainly local/municipal links and leadership. The municipal network category mostly refers to a few informal networks linking organizations and projects whose support or lead is provided by municipalities, local NGOs and local business companies. Actually, they seldom are formally established as networks, though they often operate as such by running or supporting several EE/ESD projects within the territory scope of municipalities. On the contrary, the two other categories are definitely part of well-known and recognized EE networks that have already been covered in our analysis of projects run by non-school organizations.



Figure 5. Scope of networks of EE/ESD projects run in Portuguese schools.

As seen in Figures 6 and 7, the Eco-School and the Young Reporters for the Environment programmes are both cited by respondents in the national as well as international categories. These EE programmes are sponsored by the Foundation for EE and run in Portugal by the Blue Flag Association, so they are either associated with one or other sponsoring organization. The Eco-School programme receives the overwhelming majority of citations, 82% within national and 72% within international networks, while the two programmes sponsored by the Foundation for EE receive more than 86% of citations as international networks. The Coast Watch programme is a distant third, with 4.2% nominations.

In spite of being cited as part of an EE international network programme, Eco-Schools projects still receive around 72% of Portuguese EE networks' citations (Figures 6 and 7), followed by the *PROSEPE* network<sup>5</sup> (12.7%), the *PREAA* programme (3.8%),<sup>6</sup> Young Reporters for the Environment (2.5%), Carbon Force (1.3%) and the *Ciência Viva* programme<sup>7</sup> (0.8%).

With regard to partnerships, municipalities and other local administration boards definitively appear as the partners that Portuguese schools have the most, as was already seen in the discussion above. Actually, they are cited as partners in 47.7% of the total EE/EDS projects surveyed.

According to Figure 8, it seems that partnerships with local bodies of the administration are slightly more numerous in schools of lower grades, that is to say, where the younger students are. While 49.5% of the schools in level 1 refer to municipalities as partners in their projects, the value tends to descend to 40.8% in level 3 schools. On the contrary, schools of the higher education grades

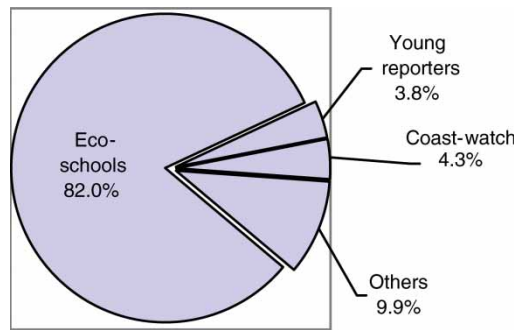


Figure 6. International networks of EE/EDS projects run in schools.

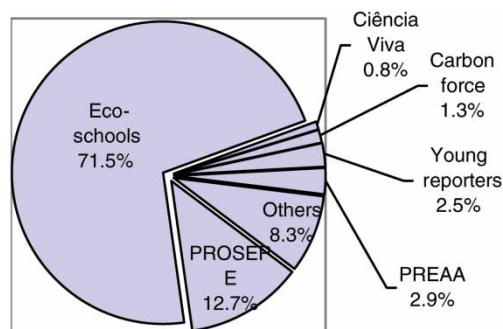


Figure 7. National networks of projects of EE/EDS run in schools.

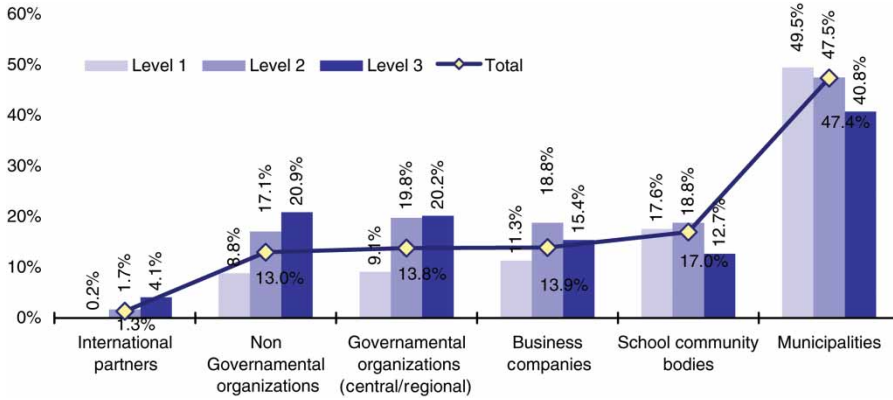


Figure 8. Partnerships of EE/ESD projects run in schools according to the level of education provided.

(levels 2 and 3) refer more to international partnerships, partnerships within civil society (NGOs and business companies) and partnerships with governmental organizations.

It seems, thus, that different education degrees determine different choices or different capacities to involve or get involved with partners. The exception is when partners come from inside the school community (director boards, student and teacher clubs, parent organizations and so on).

Figure 9 shows there is also a correlation between durability of the projects and the level of education provided in schools. That is, in the schools of level 3 (basically the secondary education), half the projects last longer than 1 year, whereas for

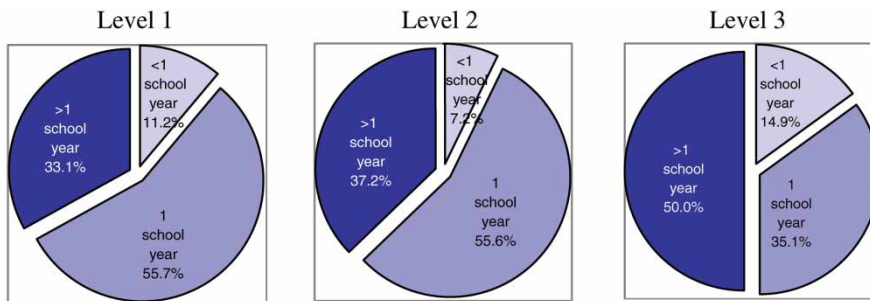


Figure 9. Duration EE/ESD projects run in schools according to level of education.

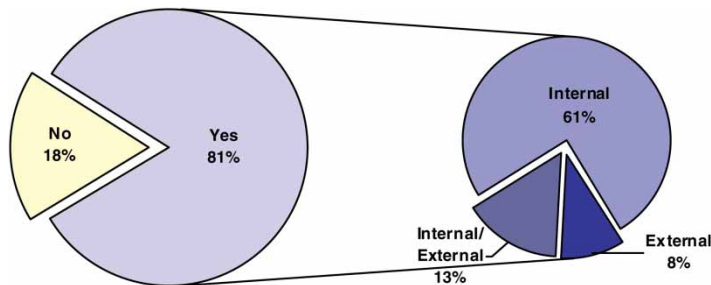


Figure 10. Assessment of EE/ESD projects run in schools.

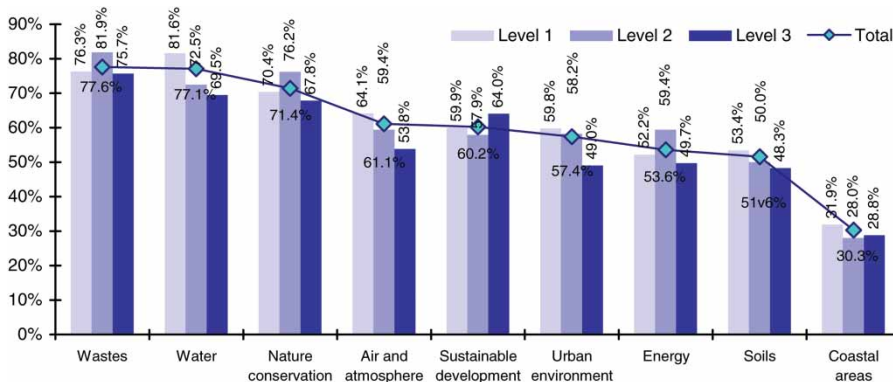
schools of level 2 (basically lower secondary education), the percentage decreases to 37.2% and in schools of level 1 (the primary and pre-primary education and kindergartens), it does not exceed 33.1%. One school year is the maximum duration of most projects in basic education schools (55.7% and 55.6%, respectively, for levels 1 and 2).

This means that EE/ESD programmes in Portuguese schools fail to survive more than one school year, presaging constant changes in the leadership teams. EE/EDS projects have not only to bear with the usual lack of resources, but also with the instability and changeover of teachers. As per Figure 10, the overwhelming majority of EE/EDS projects surveyed (82.5%) mention that all projects were subject to some kind of assessment process. A very high proportion of projects are subject to internal assessments (74.9%), and thus lack any kind of independent and objective indicators. The remaining 15.4% projects, according to the responses, had both internal and external assessments, while only 9.4% refer specifically to an external assessment, performed by an independent organization external to the school where the project was developed. Although a clear majority of schools claim they engage in assessment practices concerning their EE/ESD projects, they do so by very low and non-independent assessment standards. This may be related to the lack of EE/ESD external quality assessment referred by Wals (2009, p. 70). Probably in many other countries but, at least, in Portugal, much of the existing EE/ESD assessment schemes are supported and designed by distant, unsuitable and international bodies that do not resonate with Portuguese educational/cultural realities.

#### *EE/EDS Projects in Schools (II): The Topics*

Figure 11 shows that the topics of EE/EDS projects run by schools are chosen independently of the level of education provided. Exceptions are water, air and urban environment issues, which are slightly more present at higher grades, and energy and nature conservation issues, which are developed primarily in the second cycle of primary education and lower secondary education schools. Here again, the top three topics of non-school organizations' projects with percentages over 70% are waste, water and nature conservation.

Why is waste management at the top? Municipalities are simultaneously in charge of the urban solid waste collection and treatment, and are the most important partners of EE projects run by schools. Municipalities are also



**Figure 11.** Topics of EE/EDS projects run by schools according to the level of education provided.

committed to comply with and ensure that others comply with the recycling levels that Portugal must meet as agreed through EU directives. It is therefore not surprising that waste management comes first in the rank, but also that the 3Rs policy was the specific topic of almost half the projects (46%) included in the wastes main category (Figure 12). Composting and dangerous wastes are also referred to by 22% and 20% of responses within this group, while 12% of responses refer to wastes in general without further specification.

Figure 12 exhibits the details of the other most frequent topics. We have within the topic 'water' the problems of domestic consumption (27%), and pollution (25%) referred to by the highest proportion of projects, followed by rivers in general (21%), and oceans (13%). Finally, nature conservation is the third-most-frequent topic and, perhaps, the most diversified. It includes such sub-topics as forests (18%), fauna and flora (usually local fauna and flora) (17%), endangered species, nature reserves, parks and protected areas (16%), biodiversity issues (15%), organic agriculture (highlighting its role in the conservation of natural resources) (12%) and nature conservation issues in general (6%).

Figure 13 shows the details of the next topic categories. Air quality and especially climatic change issues received recently a growing wave of public attention.<sup>8</sup> This might explain the boost in the air and atmosphere as coming fourth in the survey, mentioned by 60% of projects surveyed.

This topic includes air quality issues reaching 36%, climatic change (22%), ozone layer depletion (18%), acid rain 15% and air in general (with no further specification) (9%). Air and atmosphere issues and the consequences of the

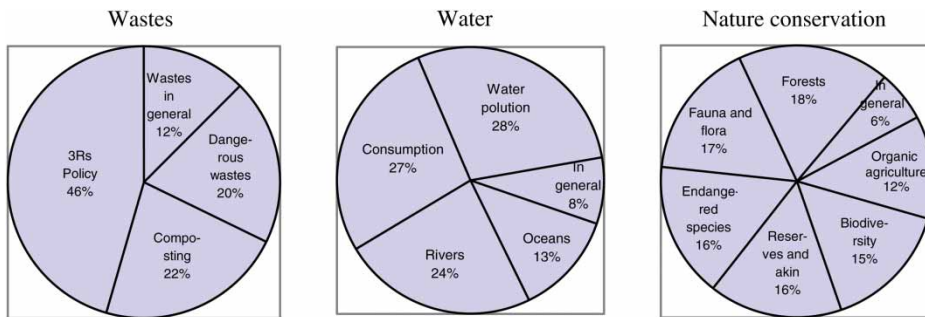


Figure 12. Wastes, water, and nature conservation topics in detail.

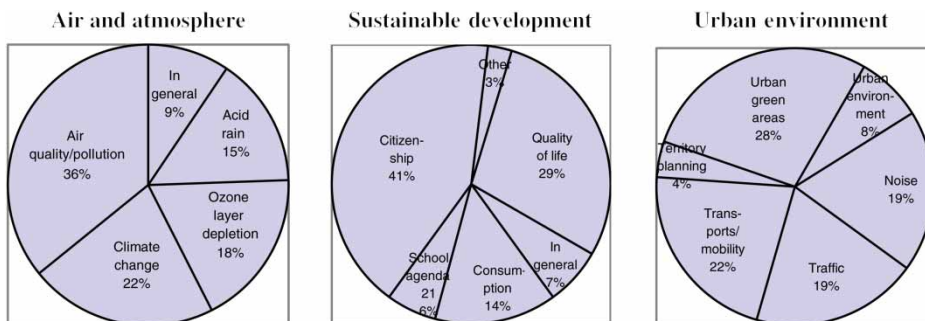


Figure 13. Air and atmosphere, sustainable development and urban environment topics in detail.

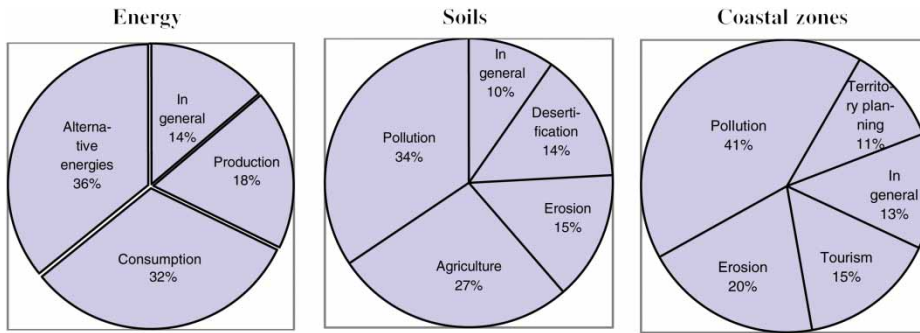


Figure 14. Energy, soils and coastal zones topics in detail.

degradation of their quality earn a major ranking in themes developed in schools. This is due more to the media attention over these topics than to local acuity and direct experience of environmental problems.

The sustainable development category covers primarily questions of citizenship, social responsibility and quality of life, which makes the concept appear as one-dimensional. Economic development issues are out of interest for EE/EDS citizenship, and quality-of-life issues reach 42% in the first category and 28% in the second. Consumption issues are 14% and, with slightly lower values, citations of sustainable development in general as topics of projects are down to 7% and school Agenda 21 only 6%.

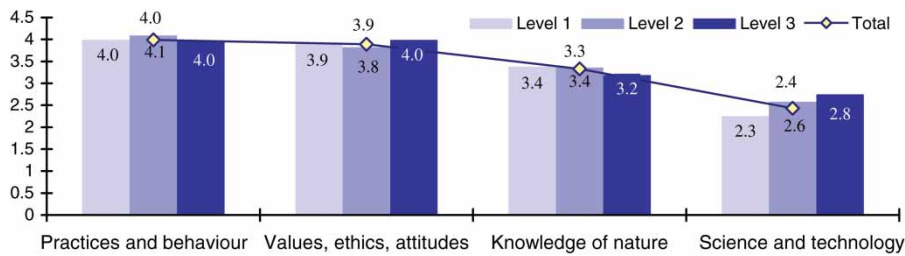
The urban environment as a main category (57.4% of total citations, Figure 11) covers urban green areas (28%), transport and mobility issues (22%), traffic and noise, both at 19%. Lagging behind, we find the urban environment in general (8%) and questions of land planning (4%) (Figure 13).

Less popular topics come logically at the bottom of the list of the EE/ESD projects surveyed, such as energy, soils and coastal zones, each one gathering together four to five sub-topics. Within the energy topics, alternative energies stand out with the larger proportion of citations (36%), followed by the particular features of consuming (32%) and producing (18%) energy. In their turn, soils gather together undifferentiated questions of soil pollution (34%), agricultural issues (27%), as well as soil erosion (15%) and desertification (14%). Finally, the environmental problems of coastal areas are the least frequently mentioned as topics of EE/EDS projects in schools (30.3%) (Figure 14). This topic covers mainly problems of coastal pollution (41%) and erosion (20%), as well as tourism (15%) and specific problems of territory planning by the sea (11%).

From Figure 15, it appears that promoters of EE/ESD projects aim at fostering environment friendly practices and behaviours as well as instilling environmental values and attitudes, in the wake of what Dunlap (2008) termed 'new ecological values'. According to these results, it seems that questions of scientific knowledge are relegated to a second level, be it the knowledge of nature, science or technology. This survey suggests that the environmental question is approached by EE/EDS more as a problem of ethics than a problem of science.

## Conclusions

EE/ESD in Portugal is more a vertical than a horizontal educative enterprise. EE/ESD takes place basically in schools and is seemingly confined within school



**Figure 15.** Emphasis on educational dimensions in EE/EDS projects run in schools according to the level of education provided.

walls. It rarely breaks through or involves the community, and EE/ESD projects encompassing the whole scholarly community (e.g. education assistants, teachers, students, student families) are very hard to find. The same is valid as to what concerns EE/ESD projects directly promoted or sponsored by non-school organizations. They also rarely include the neighbouring community or other non-school targets (Schmidt *et al.*, 2010a).

International literature sees partnerships as vital to reorienting formal education towards sustainability (Henderson & Tilbury, 2004). Unfortunately, it appears they have little importance within the Portuguese context of EE/ESD. In any case, when there are partners sponsoring EE/EDS activities, they are mainly recruited within the environmental sector of local and central administration. Other sectors socially relevant in communities, such as health and social security, are absent from these educational efforts. EE/ESD activities raise constraints to their own impact and reduce their potential and effectiveness. These self-imposed constraints also result in difficulties of operating within networks. In effect, an overwhelming majority of projects restrict their scope to schools and to the local context.

There is a bias towards a limited set of traditional environmental issues, such as waste policy issues and nature conservation. It seems as if nature conservation issues were moved into the field of EE/ESD, and just left to tick over. Urban wastes and the 3Rs policy are issues closely linked to the need to abide by European Union directives both at local and national levels. Thereby, waste recycling companies and municipalities are compelled to engage in EE projects, in order to improve recycling rates. Hence, their high participation as EE sponsors. They are also promoters of voluminous teaching materials.

Their perpetuation in the centre stage of EE/EDS activities acts to advantage particular environmental issues and policy actors. All this makes EE/ESD instrumental to agendas of some environmental policy sectors and activities, thereby restricting the impact of the wider ESD educative processes. To some extent, the persistence of these 'real-world' instrumental topics in EE/ESD projects makes them avoid the real 'real world', since a lot of momentous and exemplary topics hardly enthuse EE/EDS project promoters. The survey was carried out immediately after a particularly gruelling time of forest fires and severe draught in Portugal. However, only a few projects focused on these critical topics. Likewise, while pollution of rivers has reached the highest rates ever, as recognized by the National Water Plan (2000), water is still not a first-rank topic inspiring promoters of EE/ESD projects.

As a first conclusion, we see a bottleneck restricting action and articulation concerning other topics of great relevance for sustainable development, issues



connecting environmental problems to economic activities, social problems, health and quality of life, all of which are important dimensions of sustainability. The preponderance of purely ecological issues as main topics of EE/EDS projects acts to the disadvantage of addressing civic and citizenship questions. This means there is too much EE and not enough EDS in the schools of Portugal. This argues for the need to strengthen the link between ecological and social, citizenship and economic variables of sustainable development in educational projects centred upon environmental issues.

A second feature of EE/ESD in Portugal is related to the projects' target groups. Actually, the great majority of projects examined focus exclusively upon the school community, leaving an immense void in what concerns non-school people, such as families and other kinds of community actors, closer to school activity. Moreover, projects give preference to the younger students as targets, to the disadvantage of post-adolescent or pre-adult students, who are in theory more difficult to mobilize for environmental care. Despite some hints of growth in higher grade schools, there are still many more EE/EDS projects available for younger students and children. Since this tendency goes together with the preference for entertaining and recreational pedagogies in this kind of educative action, we see this as a symptom of 'infantilization' of EE/ESD in Portugal.

There is an obvious mismatch between a fundamentally curricular vision of educational processes from the Ministry of Education and the preference for more recreational-based activities by the Ministry of Environment and their NGO allies. The Ministry of Environment organizations promote EE to play a central role within the education system. In accordance to European Union directives, the Ministry of Education organizations make a good job in initiating the integration of environmental issues and topics of ecology into school curricula, although the majority of the projects and programmes surveyed suggest they are mainly developed independently, though complementary, to the national curriculum.<sup>9</sup> However, the organizations of both ministries rarely come together on the aims and practices of EE/EDS in Portugal. On the contrary, they abide by the tradition of separating Portuguese governmental arrangements. Hence, EE/ESD activities run mostly isolated and disengaged from more encompassing educative strategies that mobilize schools, families, communities and all educative agents. It seems, thus, that the endeavour of the mid-1990s in bringing EE into schools and scholar curricula ends up by creating a new, isolated, non-curricular area of studies—the environment. We call this the 'ghettoization' of the environmental question in Portuguese schools!

A third feature, which stems from the other two, is the 'ephemerality' of EE/ESD projects and initiatives. This can be seen in difficulties to give continuity to projects and activities. Only very few manage to last more than three years. On the contrary, activities of the majority of EE/EDS projects surveyed had started less than a year ago. In part, this 'ephemerality' is due to the difficulty of mobilizing people both within and outside schools, reflecting the more general dissociation between EE/EDS projects and the community. The involvement of the school community itself stems, in the first place, from the problem of appealing to, and involving teachers in, projects. Most promoters of EE/ESD complain that it is very difficult to get teachers interested in EE/EDS, since teacher mobility is very high and is a chronic problem of the Portuguese educational system. Thus, projects usually stop when a teacher leaves to go to another school.

The model of EE/EDS practice in Portugal—more EE than ESD, it must be assumed—seems to be at a turning point, if not a crisis. The integration within the regular educational process reveals enormous deficits of institutional and curricular coordination. This means that EE's meagre results are not only due to the customary lack of resources that environmental organizations always complain of, but also to the recognizable disconnectedness between organizations, absence of a strategic and long-term vision of EE/ESD and lack of continuity and high instability of EE/ESD activities.

Actually, the external impetus of the European Union environmental policy-making has always contrasted with persistent internal deadlocks in the implementation process of these commitments, particularly when policy initiatives are more dependent on internal resources. This is why EE seems to have reached a period of stagnation after the changes of the mid-1990s. This situation contributes to a perpetuation of two parallel but disconnected paths of EE/ESD, basically a playful and more instrumental approach by the organizations of the Ministry of Environment versus a strictly curricular view of EE/ESD by the Ministry of Education. These hold back EE/EDS to a peripheral niche inside the whole educative process in schools, and as regards environmental policy initiatives. In other words, existing EA/ESD efforts have a peripheral function as environmental policy, while it is also restrictive and marginal as education policy.

In most cases, the environmental complexity and their interactions with living and society are completely ignored, hence withdrawing crucial issues of citizenship, accountability and sustainable development. This adds to the persistent inability of EE as a whole to comply with the increasing spread, scale and social plea of contemporary environmental problems in Portugal and the world. The outcome is a more restrictive model of EE to the disadvantage of a more encompassing model of ESD. Essentially, there is also a lack of any meaningful strategy of education for sustainability which gives centrality to problems of environment and sustainable development reaching the school as a whole, transforming schools into laboratories of sustainability, including infrastructures, day-to-day logistics, scientific topics, the class, the methods of apprenticeship, learning and training, all educative agents, the families and community. The goal of sustainability to redefine the role of schools and their relationship with the community, and to shift 'the focus beyond "what to teach to students" and "how they are behaving" to seeing schools as a focal point where children, adults and the community interact and learn together' (Henderson & Tilbury 2004, p. 8), is simply not being met in Portugal. This new approach requires a new pedagogy which would be centred in developing skills and competencies for partnerships, participation and action in a whole new world of education and citizenship experience.

## Notes

1. With the financial support and patronage of the Commission of the European Communities, the *European Blue Flag Campaign* was launched in 1987, during the *European Year of the Environment*. This was also the beginning of the *Fourth Environmental Action Programme* (1987–1992), followed in May 1988 by the adoption of *European Resolution on EE*.
2. In an international review of whole-school sustainability programmes, Henderson and Tilbury (2004) found some evidence for a constellation of critical success factors: 'alignment with national government priorities; access to expertise in EE and/or education for sustainability during program design and implementation; significant and continuous funding; alignment with

educations for sustainability approaches; investment in professional development of program team as well as school partners; creating links with EE initiatives already in operation; establishment of multi-stakeholder partnerships' (Henderson & Tilbury 2004, p. 6).

3. Another survey using a different questionnaire—a first foray into the field—was applied by the authors to non-school promoters of EE/ESD from January to May of 2005 and firstly served to look at issues, problems and contradictions in case examples as a basis for the more comprehensive questionnaire that was subsequently applied to schools. In this case, more than 6500 non-school organizations were initially contacted (Schmidt et al., 2010a, 2010b).
4. Only 51% of the 15,000 schools that were contacted were included in the survey (they filled the section of the questionnaire about the general conditions of school buildings and surroundings). However, only 20% of them fulfilled the section concerning the EE/ESD projects in course, whose data form the analysis of this paper.
5. The *Projecto de Sensibilização e Educação Florestal da População Escolar* (PROSEPE), Project for the Promotion of Sensitiveness and Education of School Pupils on Forests, was an educative programme launched by a research centre of the University of Coimbra devoted to forest fires and targeted to all schools.
6. The *Programa Regional de Educação Ambiental pela Arte* (PREAA), Regional Programme for Environmental Education by Art, was launched by the Delegation of Algarve of the Ministry for Education for the schools of the region (Algarve), although it was extended to other regions in Southern Portugal (e.g. Alentejo) and Spain (e.g. Andalusia) through the cooperation of some municipalities. The programme promoted the use arts and artistic tools for EE activities.
7. These educative centres for the promotion of science, called *Ciência Viva* Centres, were created by the Agency for Scientific and Technological Culture to promote science and technology among the very young.
8. This is particularly the case of climate change, since the survey was applied at the peak of a world-wide attention on the issue. This culminated with the Al Gore book and movie *An Inconvenient Truth*. Gore also made a high profile visit to Portugal for a conference sponsored by a major bank.
9. Curriculum is an important component of the implementation and accreditation process. However, as Henderson and Tilbury (2004, p. 270) emphasize, 'the relationship between the national curricula and whole-school sustainability programmes differs as some are (a) based on and assist in implementing the national curriculum, (b) developed independently but complement to the national curriculum, and (c) value add and extend the national curriculum'. In spite of all efforts in the 1990s aiming the articulation of EE/ESD within national curricula, the Portuguese case is currently better described by situation (b).

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