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Turning off lights. How sustainable development becomes embedded in primary schools' everyday life

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Declaration

In accordance with University regulations, I hereby declare that this thesis has been composed solely by myself, that the work contained herein is my own except where explicitly stated otherwise in the text, and that this work has not been submitted for any other degree or personal qualification.

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Abstract

Focusing on the 'Sustainable schools' strategy, a programme launched in 2006 by the former United Kingdom government, this thesis examines the relationship between sustainable development and schools. It analyses how the abstract and contested concept of sustainable development (Scott & Gough 2003), is translated into education practices in state-funded primary schools in England and Portugal. The collection of data in two different countries is explained by the fact that it was in England that the 'Sustainable schools' policy was developed. Portugal was selected due to a requirement from my Portuguese sponsor, providing a valuable opportunity to explore the role of the context in the development of education for sustainable development (ESD) in primary schools.

Taking a sociological approach, this study explores the practices of education for sustainable development and the factors that shape those practices. It looks at the way schools make choices, what they prioritise, and what the key elements influencing the development of ESD are. 'What does one want ESD for?'; this is the underlying question behind the research, and so practices are contrasted with motivations, interests, agendas and expected outcomes.

There is no single definition of ESD, given the complexity involved, and so to accept the importance of the concept of sustainability for education is to accept something that constitutes a problem (Corcoran & Wals 2004). Sustainability itself is a normative ethical principle, not a scientific concept as such, and since it has both necessary and desirable characteristics, there is no single model of a sustainable society (Robinson 2001). By providing robust data on how schools interpret, organise, decide, and implement ESD, my research contributes to the discussion of the role of schools in the transition to a 'fairer and greener' world. Literature claims, policy ideas and school practices are compared and contrasted with the aim of 'demystify' ESD and question the intentions, the expectations and the projected ESD outcomes

The key research question of this study aims to identify the limitations of ESD in the shift to a 'greener and fairer' world. In order to do that, this thesis researched three other sub-questions: a) how is sustainability translated into practice in state-funded primary schools? b) how important is the promotion of ESD in primary schools' agendas? and c) how was the 'Sustainable schools' project designed to prepare pupils for current and future environmental and social challenges. On the search for answers, several dilemmas were identified: of teaching about sustainable development versus practising it; of promoting critical thinking versus promoting specific knowledge, values and behaviours; of accepting the sustainable

development concept or challenging it; of reducing the school's environmental impact or developing the curriculum. These must all be faced by those dealing with ESD.

Using a mixed methods approach, I explored these particular issues by researching five state-funded primary schools in England, some of which considered exemplary of the best practice of ESD. The case-studies research was followed by an online questionnaire sent to selected schools in England and Portugal. The questionnaire was used mainly to develop further the understanding of the results gathered with the case studies, providing a more robust image of ESD practices and its context.

My research concludes that schools value ESD and tend to deal with its complexity by dividing the main ideas within the concept of sustainable development, into specific themes and activities, such as recycling, turning off lights or growing vegetables. The development of the school's grounds, the investment in eco-features, and the activity-based projects are the most common practices found in the different schools. In this sense, there is a significant degree of standardisation in the projects developed, combined with a diverseness of specificities explained by the context, or the way the diverse factors, such as the location, the size, and the resources of the school, are used and combined. The limitations of ESD in the shift to a 'greener and fairer' world are plentiful, related to schools' internal and external constraints, revealing the need to adjust expectations and resources to the projects developed by schools.

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List of abbreviations

ASA	Association of the Social Anthropologists of the UK and the Commonwealth
DEA	Department of Environmental Affairs
DCSF	Department for Children, Schools and Families
DECC	Department of Energy & Climate Change
DEFRA	Department for Environment, Food and Rural Affairs
DFEE	Department for Education and Employment
DfES	Department for Education and Skills
DTI	Department of Trade and Industry
EEA	European Environment Agency
EL	Eco-Logica Ltd
EU	European Union
FACE	Farming and Countryside Education
GAP	Global Action Plan
GEO	Global Environmental Organisation
ICT	Information and Communications Technology
INSET	In-service-training
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature
NCB	National Children's Bureau
NCSL	National College for Teaching and Leadership
NGO	Non-Governmental Organisation
NHS	National Health Service
NMVOC	Non-Methane Volatile Organic Compounds
NOx	Mono-Nitrogen Oxides NO and NO2
NO2	Nitrogen Oxide
OECD	Organisation for Economic Co-operation and Development
OFSTED	Office for Standards in Education, Children's Services and Skills
PHSE	Personal Health and Social Education
PM10	Suspended Particulates
QCA	Qualifications and Curriculum Authority
RHS	Royal Horticultural Society
RSPB	Royal Society for the Protection of Birds
SATs	Standard Assessment Tests
SDC	Sustainable Development Commission
SDEP	Sustainable Development Education Panel
SEEd	Sustainability and Environmental Education
SEF	Self-Evaluation Form
SEI	Stockholm Environment Institute
UK	United Kingdom
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environment Programme

UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNICEF	United Nations Children's Fund
USA	United States of America
WCED	World Commission on Environment and Development
WRAP	Waste and Resources Action Programme
WWF	World Wildlife Fund

Introduction

My research looks at the relationship between sustainable development and primary schools. More precisely, it analyses the process in which sustainable development becomes embedded in primary schools' ethos and practices. The key argument of the present thesis is that there is the need to 'demystify' education for sustainable development (ESD) by questioning intentions behind ESD implementation and by identifying the factors playing a role in the development of ESD in schools that can enforce or constraint particular outcomes. The research focused on primary schools due to a personal interest, reinforced by the fact that ESD, an education that can be described as "a learning process (or approach to teaching) based on the ideals and principles that underlie sustainability" (United Nations Educational, Scientific and Cultural Organisation [UNESCO] 2006:3), is believed to be more developed in primary education than in secondary or higher education (Gayford 2009; Schmidt et al. 2010).

Education is more and more seen as a potential promoter of values and attitudes that can foster sustainable practices among students as future citizens (Gottlieb et al. 2012:193). However, since there is a difficulty in evidencing the causative relationship between ESD projects and outcomes (Liddicoat & Krasny 2013), my research looks instead at the limitations faced by schools. By exploring in detail the factors that play a role on the development of ESD in primary schools and by looking at the way those factors interact, my research presents evidence of concrete and specific activities developed by the schools, the intentions behind those activities and the different achievements brought by the activities developed.

The research arises from a personal interest in ESD and a strong will to contribute to the changes I would like to see in the world, inspired by the development of these interesting educational approaches in consequence of the growing concerns over the issue of sustainability, and reinforced by a gap in the sociological literature about the relationships between education for sustainable development and social outcomes. I believe that there is a need to provide evidence about the process of transformation of sustainable development ideas into policies and practices.

By providing robust data about how primary schools organise, interpret and develop ESD in their everyday lives, the thesis contributes to the current discussion about the role of schools in the promotion of a 'greener and fairer' society. The combination of contributions from Environmental Sociology, Sociology of Education, Environmental Education and Education for Sustainable Development literature, which is visible throughout the thesis, offered a broader understanding of the topic and the opportunity to explore the relationship between sustainable development and schools from different perspectives.

Focusing mostly on the connections between humans and nature, Environmental Sociology provided the background to understand how sustainable development and ESD emerged and why it became so pertinent in recent years. The human impact on the natural world, the way human beings react and understand those impacts, and the cultural and societal constraints shaping the alternative pathways of development discussed by environmental sociologists, were used to contextualise the need to educate for sustainable development in order to raise awareness about environmental and societal problems. Sociology of Education provided the understanding about the role of schools and education as socialisation agents and the evolution of that role over the time. By studying the way schools work, educational sociologists provided the basis of analysis of education as a vehicle for sustainable development. Environmental Education delivered the principles to understand the emergent field of ESD. The education for sustainable development literature, which places education and schools at the centre of the discussion concerning the shift towards 'sustainable' societies, was used to explore the connections between the way education and society are articulated and analysed and what the expectations and the purposes of ESD are.

The thesis is divided into seven chapters. The first chapter discusses the ecological footprint of primary schools in England, with the aim of analysing the schools' environmental impact and carbon emissions and the contribution of primary schools to the national ecological footprint. The ecological footprint is a quantitative tool that "uses material and energy flows to estimate the biophysical 'load' that human populations or industrial processes impose on ecosystems" (Rees 1992:125). In the present research the ecological footprint of schools is used as a sort of metric that highlights the environmental impact of schools' consumption and waste generation in relation to the broader national context.

Starting with an account of the most pressing environmental problems in the UK, (climate change, loss of biodiversity, pollution and waste) the chapter discusses the general trends of these problems and the specific measures that the country has been taking in order to deal with these issues. Several organisations such as World Wildlife Fund (WWF), United Nations Environment Programme (UNEP), European Environment Agency (EEA), and scholars (e.g. Dunlap 2010, Redclift 2005) report the extent of human impacts on the natural environment and the worsening of social inequalities. According to Bruges (2001) the increase of the world population and Western lifestyles are seen as major perpetrators in this scenario of depletion of natural resources, shortage of fresh water, reduction of earth's forest and marine environments, loss of biodiversity, degradation and destruction of habitats, and general disregard of the natural environment. Being considered challenges to sustainability (Bell 2009), these problems are used to justify the need of educational policies and investments in schools that could improve the building and grounds and provide the knowledge and skills to deal with these problems and to live 'more sustainably', setting an

example for today's children (Department for Children, Schools and Families [DCSF] 2009c).

By considering the ecological footprint of primary schools, one can assess which areas are the most problematic and what type of measures would be needed in order to reduce schools' environmental impact. This first chapter provides the background to contrast, later in the thesis, the priorities of schools considering ESD and how those practices are related to sustainable development goals, most pressing environmental problems, and schools environmental impact.

The second chapter explores the complexities in the relationship between schools and education for sustainable development. By doing a revision of the literature it discusses the main claims about ESD and the fragilities of believing that a certain type of education will promote sustainable development. It starts by discussing the abstract and contested concept of sustainable development, in order to understand what kind of challenges it can bring to ESD practices, followed by a discussion of the way

ESD is conceptualised in the literature. ESD is analysed by numerous authors and organisations that discuss about the characteristics ESD should have: innovative, holistic, future oriented, contextual, critical, inclusive, systemic (Sterling 2001); the knowledge it should provide (Huckle n/d); the skills it should promote; the attitudes and values that should instil and the way it should be implemented (Orr 2004). The third section of chapter two, looks at different projects around the world developed with the same idea – to provide an education which raises awareness about the need to look after the planet and society (United Nations Educational, Scientific and Cultural Organisation [UNESCO] 2002) – but focused on specific themes and concepts. These projects are good examples of how ESD can be adapted in different contexts to serve different purposes, according to the interests and resources of the different actors involved. Finally, the last section of the chapter discusses some of the problems concerning ESD. Key literature claims about ESD will be analysed and deconstructed looking at the problems that arise when those principles are practised in schools. The lack of evidence of the long-term effects of ESD and children's lack of opportunities to practice what they learn in schools are some of the issues considered and discussed at the end of the chapter.

The following chapter, chapter three, introduces and discusses the methodological choices of data collection and analysis. Undertake a research in schools and with children involved ethical considerations and practical aspects. According to my self-audit and based on the ethical review form of the University of Edinburgh, my research is a Level 2 (since it involves children) and so ethical considerations were present since the beginning. Some of the elements considered during the planning of my research were: the possibility of raising sensitive issues during the visits to the schools; negotiation of access to the schools with

gatekeepers and the dissemination of the results in such a way that no children or school could be identified in the final text (Alderson 2004).

In order to answer the main research question: what the limitations of ESD in the shift to a 'greener and fairer' world are, this thesis researched three other sub-questions: a) how is sustainability translated into practice in primary schools? b) how important is the promotion of ESD in primary schools' agendas? and c) how was the 'Sustainable schools' project designed to prepare pupils for current and future environmental and social challenges. Having these questions in mind, the research used a mixed method design to collect data, combining case studies with a questionnaire in a sequential way. Five primary schools in England, some of which are known as sustainability 'champions', were researched using multiple methods of data collection (observation, interviews, document analysis) and an online questionnaire was applied to selected schools in England, with the aim of developing further or clarifying some of the data collected in the case study schools; and in Portugal to assess the state of the art of ESD in primary schools and explore the role of the context in the development of ESD. The Portuguese data should be understood as a complementary case used to confirm/contrast the findings from the English case.

The five case study schools were chosen due to their singularity in terms of: location, number of pupils, interest in and importance of ESD to their ethos and practices. These different variables were then used to understand the importance of the context and of the different factors playing a role in the implementation of ESD in primary schools in England. The names of the schools were modified and the new names were chosen using one of its features that best describes its position concerning ESD.

The first school visited, Peace School, a state-funded primary school in North West of England, got its name because, by the time of my visit, the school had different projects concerning spirituality, religion, inclusion, peace, human rights. The headteacher of the school and different teachers stressed the importance of the links between spirituality, religion and the promotion of sustainable development in their school. The second school, Green School, a state-funded primary school in the North East was baptised by the staff I talked to, as 'Green School' and that was the name adopted in the thesis. Outdoor School located in the South West, was the third state-funded primary school I visited and got its name due to greater emphasis on outdoor education and forest school sessions, as confirm by the different members of the staff. The fourth primary school in the public sector, Energy School, located in the South West as well, had a strong focus on saving energy and was the topic more developed at the school by the time of my visit. Finally, Multicultural School, the last state-funded primary school I visited, located in Greater London, was the school where pupils' ethnicity was indeed multiple.

The questionnaire was used mainly to develop further the understanding of the results gathered with the case studies, providing a more robust image of ESD practices and its context. Because of that, the intention of using the questionnaire was never to generalise the results, but only to explore further some relevant findings from the case studies. The data gathered with the questionnaire, both in England and in Portugal should be seen as 'auxiliary data' that would provide some clarifications or additional information about the findings from the case studies.

The use of a mixed method design can then be explained by looking at the research as an exploratory study (Creswell & Clark 2007) which is mainly qualitative, since the complexity of the relationship between ESD and schools could be better understood by spending time in the schools, observing and talking to different people. The quantitative method, the questionnaire, was applied after this first stage and should be understood as an assistant method, which provided further insights that helped in the understanding of the complex research phenomenon.

The second part of the thesis starts with a review of the policy context, with the description and analysis of the 'Sustainable schools' programme, in chapter four, followed by the presentation and discussion of the main findings of the research, on chapters five and six.

The former UK government launched the 'Sustainable schools' programme in 2006 with the aim of converting schools into "sustainable places", stating that it "would like every school to be a sustainable school by 2020" (DCSF 2006). A 'sustainable school' was defined by the strategy as a place of caring (for oneself, for each other, and for the environment), where sustainability should be addressed as a driving force, which would guide the way schools, organise and deliver education. Eight doorways or sustainability themes were developed, and prescribed as necessary part of the curriculum, the campus and the community of schools: 1 – Food and drink; 2 – Energy and water; 3 – Travel and traffic; 4 - Purchasing and waste; 5 – Buildings and grounds; 6 – Participation and inclusion; 7 – Local well-being; 8 – Global dimension. According to Reynolds (2012)[1] the doorways were chosen considering the coverage of key social and environmental topics, and the possible relevance to school

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[1] When trying to find out more about the eight doorways and how they were selected I exchanged some emails with Dr Jack Reynolds, deputy director at Cambridge programme for sustainable leadership, since he was one of the key actors in the designing of the "Sustainable Schools" framework. This were his words:
"On the choice of the doorways, this was ultimately my decision based on a host of factors:
- coverage of key social and environmental topics
- relevance to school management and culture
- prior work from leading environmental and development NGOs with compelling visions of education.
The doorways should not be seen as the last word on sustainable schools. They are merely entry points into the ongoing debate." (19/05/12)

management and culture. The DCSF (2006) stated that the promotion of a healthy living, environmental awareness, community engagement and citizenship were the main goals of this programme.

Developed as part of the former government's national sustainable development strategy, set out in the document *Securing the Future* (Department for Environment, Food and Rural Affairs [DEFRA] 2005), the programme presented the role of education in supporting behavioural change, a large part of the Government's thinking on sustainable development that could be achieved through education and schools (DEFRA 2005). Several reports, documents and grants were made available to schools and a significant investment was done, especially in terms of educational material and resources, setting this policy as an important research subject, understudied, especially in terms of its social implications. A large number of Non-governmental organisations (NGOs) were also involved and a number of other projects were identified as supporting the government's strategy such as the 'Eco-schools' programme, as I will discuss in the chapter.

Having identified the main characteristics of ESD described by the literature and how the 'Sustainable schools' policy described and presented its goals, the last part of the chapter questions this policy by looking at the assumptions, processes, outcomes and assessment tools proposed. Questions such as: "why 8 doorways and why these 8?" (Scott 2007), or whether the policy wanted schools to be sustainable or less unsustainable, and whether schools could indeed address sustainability issues by being sustainable, will be raised and a reflection about ESD will be offered.

Chapter five gathered the data collected with the five case study primary schools and the questionnaire in England, and analysed the findings according to the research aims. The chapter is divided into five sections and aims, ultimately, to contribute to the clarification of the roles of schools and education in achieving broader sustainable development goals. Steered by the question 'what does one wants ESD for?', the chapter presents and analyses the way the concept of sustainable development is transformed into practices and what are the factors influencing this process. Looking at the material, social and educational ESD practices in schools, the chapter examines the intentions of the people involved, the expected outcomes and the limitations of ESD in attaining sustainable development.

Chapter six presents and analyses the data collected by the questionnaire applied to the selected public-funded primary Portuguese schools. Since my research was sponsored by the Portuguese government through the FCT (Foundation for Science and Technology), I was required to include relevant data about/for Portugal and so this chapter was developed with that particular aim, but it was also a way of broadening the findings about ESD practices and purposes. The data gathered with the Portuguese questionnaire allowed me to have a deeper understanding of the English case and vice-versa, and although the intention of the exercise

was not to compare the two countries, there was an inevitable comparison in some of the points (e.g. the hours spent with ESD, the most common eco-features) that provided an interesting insight about the way the context and available resources shape ESD in schools. This chapter should be understood as a sort of 'assistant case'. It aims to explore the role of the context in the development of ESD in primary schools, using the Portuguese case as a way of deepening the understanding of the complexity of factors and influences playing a role in the development of ESD in primary schools.

Finally the last chapter, chapter 7, contrasts the most influential literature, the 'Sustainable schools' policy and school practices as a way of 'making the bridge' between some of the most important literature claims and ideas, the implementation of ESD into an educational policy such as 'Sustainable schools' and the practices found in the schools. It will use some of the key research findings to discuss the main similarities and differences between literature, policy and schools, how those can be explained and what the implications of such findings are. This chapter is followed by the conclusions where the research questions are answered and a reflection about the implications of the research for future projects and policies is suggested.

In short, my research intended to study in detail the relationship between primary schools and sustainable development. In order to do that it looked at a) the way schools are expected to contribute to sustainable development goals (e.g. reducing CO_2 emissions) and how in turn sustainable development influences schools' lives; b) the way ESD is implemented in primary schools and the different factors shaping its development; and c) the differences and similarities between ESD literature, the 'Sustainable schools' policy and the practices found in the schools.

By questioning the intentions of developing ESD in schools, I am providing both evidence about the gap between policy prospects and schools practices and about the need to adjust expectations and resources to the projects developed by schools. 'Small' gestures such as turning off the lights are but a 'a drop in the ocean' compared with the possible actions that could be taken to save energy, but become one of the major symbols of sustainability and one of the key components of education for sustainable development. Implementing habits in the pupils, such as turning off lights is one of the arguments used by policy makers to develop future responsible citizens. As I am going to demonstrate throughout the thesis, it is not unusual to have different people, including the pupils, stating that they are 'saving the world', they are protecting the environment… whenever gestures such as turning off lights or recycling take place. However, and despite the incontestable merits of those actions, the long-term effects of education for sustainable development are not proven, neither is the effectiveness of the focus on individual behavioural change (Stevenson 2013; Zeyer &

Kelsey 2013). The willingness to live 'eco-friendly' competes with other needs and wants, and it is shaped by the available facilities that support or constrain the 'eco-practices'. An exclusive focus on individual behaviour misses the factors that limit and enforce particular choices (Shove 2003:39).

To date, the literature has focused on setting an agenda for the integration of sustainability into state education (Holdsworth, Thomas & Hegarty 2013) and describing the characteristics, principles and values that form the foundations of ESD. However, there is a lack of research on how those principles are implemented. By analysing the way ESD is described in the literature, employed in a policy, and applied in schools, my research can contribute to a better understanding of the process of transforming principles and ideas into actions and projects. The data gathered in the five schools, together with the questionnaire provides in-depth material not only about the role of ESD in schools, how it emerges, how it is developed, and who is involved in this process, but also about the social dimensions, including the factors that shape this process and the constraints on both its development and potential outcomes.

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Chapter 1

Rationale: the ecological footprint of schooling

This chapter looks at the contributions of schools to the national ecological footprint, an important aspect given the emphasis of recent policies and literature on the need to reduce carbon emissions, waste production and preserve the natural resources. The chapter will briefly highlight the contributions of the different economic sectors to national carbon emissions and other related problems, focusing mostly on the education sector and in particular on the ecological footprint of primary schools in England. The large number of schools around the world means schools are in a delicate position concerning the use of resources and carbon emissions and so, it is important to understand where schools are located in these more material aspects of sustainability, aspects that include saving money and making the school buildings more efficient and less wasteful.

The ecological footprint is, according to Gottlieb et al. (2012:195), based on assumptions that "different categories of human activity, such as energy and resource consumption and the emission of waste, require a certain amount of productive or absorptive land or water". The relevance of focusing the discussion on the ecological footprint of schools is related to the fact that there is an on-going debate in the ESD literature concerning the contribution of schools to the national ecological footprint, with a special focus on carbon emissions, and how these emissions can be diminished with the implementation of specific measures. The discussion, although apparently related to the physical attributes of schools (building, grounds, equipment, utilities, etc.) involves broader arguments concerning not only the focus, time and resources schools should devote to reduce its ecological footprint, but also the role of schools in modelling good practices, and how the improvement of the buildings and grounds can be used to teach and learn about ESD, arguments that will be developed over the next chapters.

As I am going to demonstrate, the 'Sustainable schools' strategy (DCSF 2006) placed quite a lot of effort on the need to improve buildings and grounds of schools in order to make them more efficient and reduce their carbon dioxide (CO_2) emissions, giving at the same time the opportunity to promote habits and attitudes in pupils and staff that could be followed up after school. However, it looked at schools almost as 'isolated' and autonomous places that could reduce their ecological footprint independently of the contextual and societal constraints. This chapter will then look at what contributes to the ecological footprints of schools taking into account the internal and external contexts that influence these footprints.

I will start by presenting the most pressing environmental problems in the UK since that will provide the background to understand the broader context where schools are situated and

what role schools are supposed to play in reducing those particular problems. I will then analyse primary schools' direct and indirect carbon emissions and how these are measured and understood. In the last section, I will discuss what the reduction of schools' environmental impact would imply.

1.1 Pressing environmental problems globally; from the perspective of the UK

In 1987, the Brundtland Commission identified a number of global issues, which might fit with the idea of sustainability, since it proposes a state where the natural environment, social equity and economic progress co-exist pacifically and none should grow at the expense of the others. Issues that can be seen as potential threats to development, sustainable development, and the progress towards a 'fairer and greener' world, included at that time: the debt of developing countries; the overuse of non-renewable resources and growing competition for water supplies; the reduction in biodiversity; the pollution of air, water and soil; the continuing growth of the world's population; the increase of national, political and religious extremism; and the pressure and unpredictable consequences of climate change (World Commission on Environment and Development [WCED] 1987).

Twenty-six years later, several of these problems persist and continue to worsen globally, according to several reports. The *Millennium ecosystem assessment* in 2005[2], stressed that "over the past 50 years, humans have changed ecosystems more rapidly and extensively than in any comparable period of time in human history". The Intergovernmental Panel on Climate Change (IPCC 2007) has found that global CO_2 emissions grew by 70% between 1970 and 2006. The *Human Development report* (United Nations Development Programme [UNDP] 2011) states that global inequalities are worsening; the *Living Planet report* (WWF 2010) suggests that humans have destroyed more than 30% of the world's natural wealth since 1970; the *Global Environmental Organisation (GEO) 2000 report* from UNEP states that 80% of the world's original forest cover has been cleared, degraded or fragmented and that species are being extinguished by humans at up to 1,000 times the normal rate (Huckle n/d). These numbers, even if extremely illustrative of the pressures human activities are having on the natural environment, do not fully demonstrate the spatial and social variations of unsustainable practices and more pressing problems affecting specific regions. Here I want to focus on Europe and specifically on the UK. I will try, whenever possible, to use data concerning England since our case studies are English schools, however most of the time the data available concerns the UK as a whole.

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[2] Retrieved from: http://www.maweb.org/documents/document.766.aspx.pdf

Continuing depletion of natural capital stocks, climate change, biodiversity loss, waste generation, water and air pollution are the most pressing environmental problems in Europe, according to a report by the European Environment Agency (EEA) in 2010. Despite the positive trend of progress within some of these problems, as summarised in the table below, namely climate change where data shows that the European Union (EU) has reduced its greenhouse gas (GHG) emissions and it is on track to meet its Kyoto Protocol commitments, or the decline of air and water pollution and the regulation to increase resource efficiency through a relative decoupling of resource use, emission and waste generation; a number of major challenges remain unsolved and there are negative trends in major areas, namely in the limitation of the increase of temperature to below 2°C, halting the loss of biodiversity and reducing waste generation. This picture is a reflection of the recent *Annual Environment Policy Reviews* by the European Commission in which up to two-thirds of the thirty environmental indicators selected, show a poor performance or worrying trend (EEA 2010). The following figure represents an indicative summary of the main trends and progress towards meeting environmental targets at an European-level over the past ten years.

Figure 1 – EU-27 environmental performance

Environmental Issue	EU-27 Target/Objective	EU-27 – on Track? – Trend?
Climate change	To limit increases to below 2C	**X** ↑
	To reduce GHG emissions by 20% by 2020	√ ↓
Nature and biodiversity	To halt the loss of biodiversity	x ↓
	To prevent further soil degradation and preserve its functions	x ↑
Waste	To substantially reduce waste generation	x ↑
	Recycling targets for specific waste streams	√ ↑
Pollution	To comply with bathing water quality, urban wastewater treatment	√ ↓
	To attain levels of air quality that do not give rise to negative health impacts	x →

Legend: **x** – not on track; ↑ - negative development, increasing trend; ↓ - negative development, decreasing trend; √ - on track; ↑ - positive development, increasing trend; ↓ - positive development, decreasing trend; → - stable.
Source: EEA (2010)

These problems can be seen as serious threats to future economic growth and social equity, being potential challenges to sustainability (Bell 2009). Moreover, and more importantly to this research, they can be used to justify the implementation of educational policies,

curriculum and investments that are believed to have the potential to change the course of history.

> Earth is the only place in the universe known to sustain life. Yet human activities are progressively reducing the planet's life-supporting capacity at a time when rising human numbers and consumption are making increasingly heavy demands on it. The combined destructive impacts of a poor majority struggling to stay alive and an affluent minority consuming most of the world's resources are undermining the very means by which all people can survive and flourish. (International Union for Conservation of Nature [IUCN] 1980:17)

As Dunlap (2010) highlights, the nature of the problems has changed. The scale has grown from localised problems to regional or global problems; the frequency has increased, together with the risk and the impacts, which can be difficult to detect, predict and may be irreversible.

The *2010 European Environment report* (EEA) stated that the average global air temperature in 2009 had risen by 0.7^{o}c to 0.8^{o}c since the pre-industrial times and current projections suggest global mean temperatures could rise by as much as 1.8^{o}c to 6.4^{o}c over the course of this century if global actions to limit GHG emissions are unsuccessful. Some of the consequences could be the "arctic sea-ice loss, dieback of Amazon rainforest and Boreal forest, melt of Greenland ice-sheet and potential chaotic shifts in monsoons" (p.40). Biodiversity loss is connected with over-exploitation of natural resources which can lead to degradation of natural ecosystems, species extinction and undermining of human well-being, e.g. collapse of commercial fish stocks through overfishing; the decline of pollinators due to intensive agriculture and reduced water retention; or increased flooding risks due to the destruction of moorland (EEA 2010:47).

Now looking specifically at the UK, the report called: *OECD Environmental Performance Review. The UK's progress,* (DEFRA 2006), recognised the UK's commitment to environmental protection and gives credit for achievements, but drew attention to issues such as waste, diffuse pollution, enforcement and the condition of protected areas, where further progress is needed.

The quality of air in the UK has improved, especially in urban areas and the emissions of air pollutants (e.g. mono-nitrogen oxides NO and NO2 [NOx], non-methane volatile organic compounds [NMVOC], nitrogen oxide [NO2], suspended particles [PM10]), have continued to fall over the last few years through measures introduced to control emissions from transport and industrial sources. The 2003 *UK Energy White Paper* (Department of Trade and Industry [DTI] 2003), which sets out how to integrate atmospheric management concerns into energy policies, places the UK on a path to a low carbon economy with the aim of cutting CO_2 emissions by 60% by 2050.

The quality of water is also improving, but there are remaining challenges, namely to reduce diffuse water pollution from agriculture, to increase the number of designated sensitive areas and complete urban waste treatment infrastructure, to reduce and improve nitrate vulnerable zones, and to develop the river basin approach to water management. Waste management has seen many developments, with greater efforts to reduce the rate of waste growth. According to DEFRA, the UK generates approximately 290 million tonnes of waste each year, and 50% of local authority collected waste generated in the UK was sent to landfill in 2010/11, compared to the EU-27 average of 40%. Recycling has increased. The household waste recycling rate reached 43.2% in England in 2012/13, compared to 11% in 2000/01[3].

In terms of biodiversity, the *Lost life* report published by Natural England (2010) asserts that nearly 500 species have been lost in England in the last twenty years. However, this figure does not represent an accurate total, since many other species groups (like fungi, algae and marine invertebrates) are not included and there is no information about the full extent of those that exist and those that have disappeared. The report states that 24% of native butterflies, 22% of amphibians, 15% of dolphins and whales, 14% of stoneworts, 12% of terrestrial mammals and 12% of stoneflies have been lost from England. In addition, a significant number of England's remaining species are under threat, with a total of 943 species identified in 2008 as priorities for conservation action under the *England Biodiversity Strategy* and *UK Biodiversity Action Plan* (p.3).

Being a global environmental problem, climate change is also taking place at UK levels. Several organisations, as described by Natural England (2008), review the changes occurring in the UK that can be attributed to climate change: the rise of $1^{o}c$ temperature in Central England since 1950; the rate of warming increasing in all regions; the widespread reduction in the number of frost days in mid-latitudes and the increase in the number of warm extremes and decreased of cold extremes; the increased frequency and magnitude of heat-waves; the decrease summer rainfall; and the sea-level raise approximately 1millimetre/year.

According to WWF, about two-thirds of GHG gas pollution come from the CO_2 emitted from human usage of fossil fuels such as coal, gas and oil. The leading sources of CO_2 are now energy and transport (WWF 2008).

The UK has both international (*Kyoto Protocol* – to cut greenhouse gas emissions by 12.5% below 1990 levels by 2008-2012 - United Nations [UN] 1998), and domestic (*UK Climate Change Act 2008* - to cut emissions of greenhouse gas emissions by 80% below 1990 levels by 2050 - Department of Energy and Climate Change [DECC] 2008) targets to reduce greenhouse gas emissions and become a low-carbon economy. The Department of Energy and Climate Change published in 2012 provisional figures on the performance of the UK

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[3] Retrieved from: www.defra.gov.uk/environment/waste

against emissions reduction targets. According to these figures, emissions on a carbon budgets basis were estimated to be 545.4 million tonnes of CO_2 in annual emissions ($MtCO_2$) in 2011, which is 29.6% below the baseline (excluding emissions trading). The greenhouse gas inventory is retrospectively revised for all years back to 1990. For the UK carbon budgets, the baseline is revised annually to take account of these revisions. However, the United Nations Framework Convention on Climate Change (UNFCCC) have specified that the baseline used for the Kyoto Protocol target is fixed (DECC 2012). The table below summarises the UK's progress towards meeting the *Kyoto Protocol* (682.4 $MtCO_2$).

Figure 2 – UK CO_2 emissions (2008-2011)

Assigned Amount		Actual emissions *including EU ETS*					
Total emissions (2008-12)	Equivalent average emissions p.a.	2008	2009	2010	2011 (p)	Cumulative emissions to date (2008-11)	Average emissions p.a. (2008-11)
3412	682	607	586	598	574	2365	591

Legend: ETS – Emissions trading
Source: DECC (2012)

Figure 3 – Evolution of the UK's GHG emissions towards the Kyoto 2012 target (1990-2011)
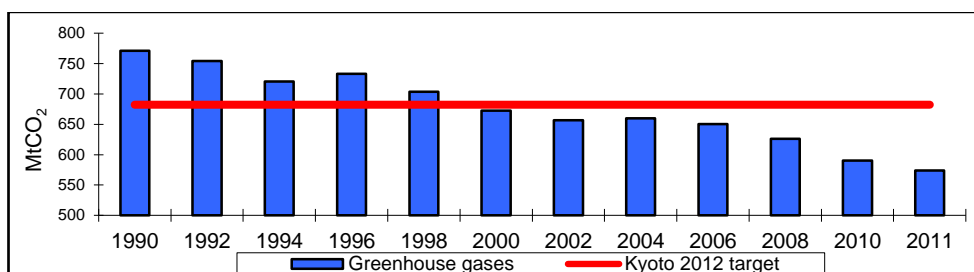
Source: Harvey (2012)

Now, looking at the contributions from the different sectors, in 2011 an estimated 40% of CO_2 emissions came from the energy supply sector, 26% from transport, and 15% from each of the business and residential sector (DECC 2012). The graphic below illustrates the evolution of CO_2 emissions by sector in $MtCO_2$, showing a general decrease trend. Some sectors such as energy supply, industrial process or business show a decrease trend, mainly due to technological changes. Other sectors, such as residential, show a decrease between 2010 and 2011, which was highly influenced by external temperatures, since 2011 was

warmer than an average year (DECC 2012:6). Some other sectors, such as agriculture, remain mostly unchanged.

Figure 4 – GHG emissions from the different sectors in the UK (1990-2011)
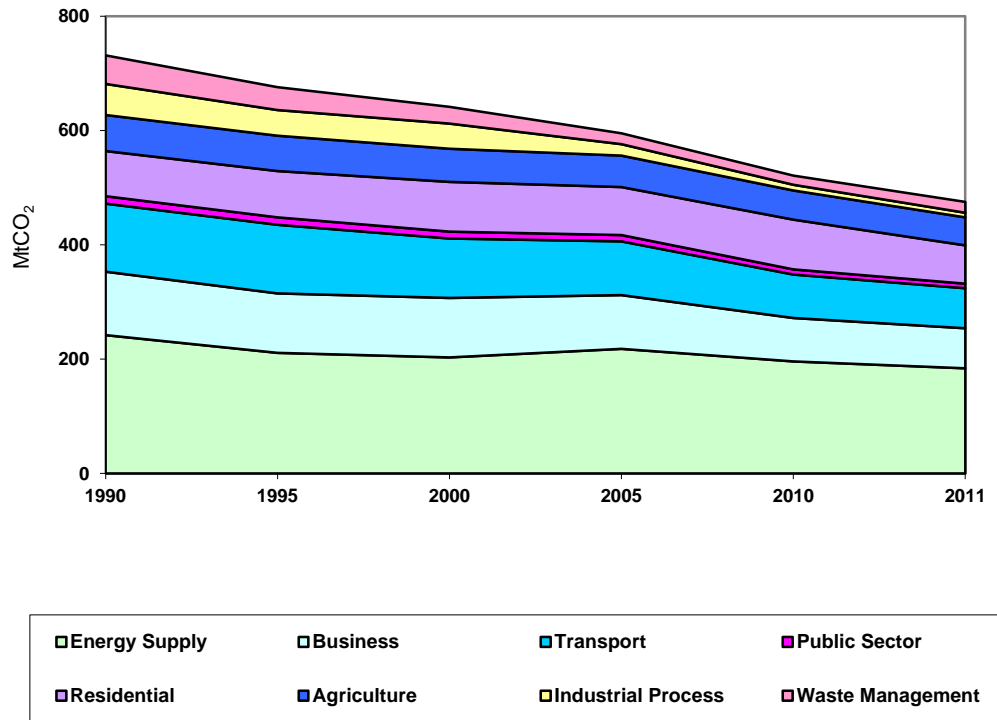
Source: DECC (2012); Harvey (2012)

Despite the emphasis on positive trends and improvements in CO_2 emissions that many official reports broadcast regularly, if one looks at all the goods that the UK does not produce any more but continues to consume, the so called 'outsourced carbon emissions' have been continuously rising and the carbon footprint associated with the imported products, mainly from China, grew 20% between 1990 and 2008[4]. From 2009 to 2011, the CO_2 emissions have decreased slightly, as shown in the figure below.

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[4] Retrieved from: www.bbc.co.uk/news/uk-politics-17743589

Figure 5 – CO2 emissions associated with UK consumption (1997 to 2011)
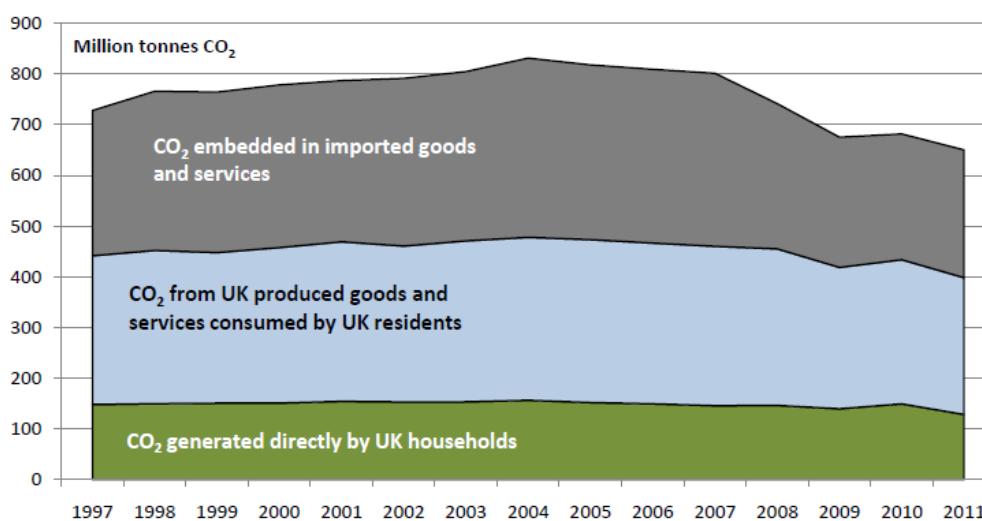
Source: Defra Official Statistics (2013)

So, if the carbon 'embedded' in imported goods is taken into account, the UK carbon footprint is approximately twice as large as that calculated from emissions alone, just over 700 million tonnes of CO_2 as opposed to around 400 million tonnes[5].

The way carbon emissions are usually measured, in a compartmentalised way and looking only to the emissions that are directly linked with the organisation or country in question, contrasts with the nature of the greenhouse gases which is fluid and connected with the different goods and activities that are traded between countries and organisations. The same can be said about schools. If one focuses only on the direct emissions, then eco-buildings, energy saving light bulbs, and efficient equipment may be the answer, but if one considers the emissions associated with all the services and goods that the school uses or provides then the story is different.

1.2 Environmental impact of English schools

The ecological footprint represents the national capital requirements of a defined population in terms of the corresponding biologically productive areas (Wackernagel et al. 1997). This includes the "land required to provide the defined population with all its food and material as well as absorb all its waste (particularly carbon dioxide emissions)" (Barrett 2001:108).

The ecological footprint has been applied to various levels, from nations to small organisations and households (Barrett 2001:109). In this study, I am focusing on this concept

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[5] Retrieved from : www.carbonbrief.org/blog/2012/03/defra-the-uk-outsources-emissions

to explore the kind of impact schools have in terms of carbon emissions, waste production and resource consumption.

Due to the increasing concerns about global climate change and carbon emissions as a causal factor, many organisations and governments are focusing on carbon footprint projects to estimate the different contributions to the climate change phenomenon (Matthews et al. 2008).

The importance of looking at the carbon footprint of schools is related to the 'Sustainable schools' policy's emphasis on school's carbon emissions and on the measures to reduce the environmental impact of schools. As I am going to demonstrate, there is a tendency to focus on the direct CO_2 emissions and on targeting specific behaviours and features without paying too much attention to the indirect emissions or to projects that could reduce those emissions more efficiently. This is important in my research because it provides the evidence of the gap between the existing 'problem' and the 'solution' proposed, or between the projects developed by the schools and the expectations of the 'Sustainable schools' policy.

A carbon footprint is most commonly defined as:

> The total set of greenhouse gas emissions caused directly and indirectly by an individual, organisation, event or product. It is labelled a carbon footprint as commonly the total GHG emissions are converted to CO_2 equivalent emissions (DCSF 2010b:7).

DCSF stated that schools have a special role in reducing emissions, "a role that goes beyond reducing national emissions", since schools can set an example for today's children through the curriculum and practices. Schools account for around 3% of UK GHG emissions, which amount to 15% of the country's public sector emissions, a sector that in total contributes to 19% of national CO_2 emissions. Schools' emissions come from four main sources (DCSF 2010b:10): the use of energy in school buildings, pupil and staff travel to and from school, emissions produced by companies that supply goods and services to school, and emissions from waste produced by schools.

In 1990, schools' carbon footprint totalled around 6.5 million tonnes of CO_2 and in 2006, 7.3 million tonnes, increasing 12% overall (DCSF 2010b), with primary schools contributing around 3.6 million tonnes of CO_2. Recent research by the University of Cambridge and Shinawatra University (Godoy-Shimizu et al. 2011) revealed that GHG emissions from English schools continue to rise. Location, heating, ventilation and air conditioning, and size of the building are characteristics that influence performance of schools in energy use. The research concluded that there has been a considerable reduction in fossil-thermal energy consumption over the last decade, but a significant increase in electricity consumption as well, which results in rising typical emissions across the schools. The analysis shows that the CO_2 emissions have actually increased in recent years, on both a per-square-metre and a per-

pupil basis and may continue to rise due to the increasing use of information and communications technology (ICT), the increasing length of school time and extra-curricular activities[6], and the increase in the proportion of children travelling by car[7].

Around 1.3 million tonnes of CO_2 are produced in the UK directly attributable to the transport of children to schools by parents. Research by the Department for Transport has shown that one in five vehicles on the road at peak traffic times is transporting a child to school, and that 68% of all journeys are less than 5 miles (Terry 2008).

In a report by the Scottish Executive Central Research Unit (Granville et al. 2002) the reasons why parents drive children to school are scrutinised and the main reasons identified are related to physical limitations. Since there is parental freedom to choose the school, greater in England than in Scotland, the distance between the house and the school chosen tend to increase resulting in choosing the car after walking long distances. According to the report by Granville et al. (2002), all parents participating in the research prioritised standards of education over all other factors when choosing a school. Another reason is the restrictions imposed by some schools where young children have to be released at the end of the day into the care of an appropriate adult, meaning that the children cannot leave the school unaccompanied by a known adult, increasing the parking and congestion around the school area. Concerns over safety related to 'stranger danger', unsafe neighbourhoods or traffic volumes, potential dangers that children have to face when walking or taking the bus alone, are other aspects motivating the use of the car. These reasons highlight the complexity of the issue and the limitations of projects that aim to reduce the use of cars only by increasing the awareness about the importance of walking and/or cycling.

In the UK, the emissions from total energy use in school buildings increased by 24% between 1990 and 2006, and where emissions from oil and coal rose more slowly, by 10%, emissions from electricity use increased by 31%. Emissions from school travel and transport increased by 59% and this is the largest percentage increase within the carbon footprint, however school travel remains only a relatively small proportion of the overall total (DCSF 2009d). The graphic below illustrates the contributions of the different areas in schools to CO_2 emissions,

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[6] Which rose the overall use of energy by schools but reduced at the same time the use of energy by parents, for example.
[7] Which rose by 12% between 1992 and 2009, from 30% to 42%. (National Children's Bureau 2011)

Figure 6 – Distribution of the CO$_2$ emissions from UK schools' activities
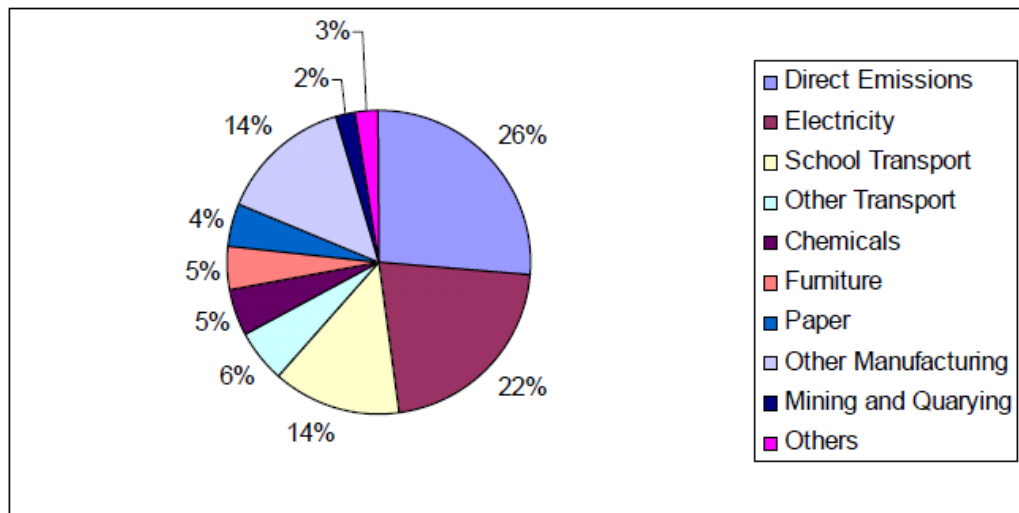
Source: Global Action Plan, Stockholm Environment Institute and Eco-Logica Ltd (2006)

According to the Building Research Establishment, energy costs for primary schools are an average of £6300 per annum. In total, some £4000 million per annum (2007 figures) is spent in the UK on heating and powering school buildings. One school may spend up to four times as much per pupil in energy costs as another similar school. This cannot be put down solely to the inefficiency of particular buildings, but also to the way different equipment and utilities are used (DCSF 2010a), or as expressed by Dixon (2009:4): "someone said to me once that saving energy is 20% a technical solution and 80% a behavioural solution". Energy costs are second only to staff costs and exceed the cost of supplies and books (Terry 2008). Although DCSF (2006) had the target of reducing carbon emissions from schools by 10%, and the government aimed for schools to be carbon-neutral by 2020, energy efficiency, monitoring and improvement of buildings' energy consumption are not current practices in many schools (DCSF 2010b:8). According to Terry (2008:24), this can be explained by different reasons: the perception in schools that energy is not a major budget item; the idea that schools cannot save much by being energy smart; or that energy improvements in existing buildings require a major financial outlay.

The carbon footprint of schools should also consider indirect emissions, just as stated in the document prepared in 2006 for the Sustainable Development Commission (SDC) by Global Action Plan (GAP), Stockholm Environment Institute (SEI) and Eco-Logica Ltd (EL) and illustrated in the graphic below. "The importance of including transport and embodied emissions is particularly relevant for service industries such as education/schools, which are often heavily reliant on products from primary and secondary production sectors in their service provision." (p. 21). The education sector emits about 5.7 MtCO$_2$ directly through the

operation of school building and equipment, and another 10 $MtCO_2$ is created by the provision of services and goods to schools. Therefore, if carbon footprints of schools focus only on direct emissions, a substantial amount of CO_2 emissions is neglected and a significant reduction in the carbon footprint of schools may be achieved only if all emissions associated with their services are considered (GAP, SEI and EL 2006).

Figure 7 – Direct and indirect CO$_2$ emissions from schools
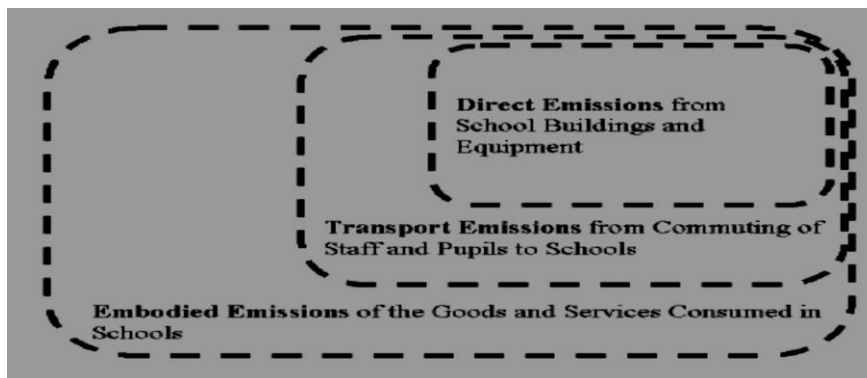
Source: GAP, SEI, EL (2006)

The contributions of schools to the national ecological footprint do not end with carbon emissions, since other aspects such as waste generated and water consumption are also important elements to consider if one wants to underline the relationship between schools and pressing environmental problems. An ecological footprint is commonly defined as "biophysical 'load' that human populations or industrial processes impose on ecosystem" (Rees 1992:125), and so I am interested here in understanding what kind of impact schools' activities have on the broader national context in terms of use of resources and waste generation.

According to the organisation *Recycle Now,* an average primary school produces 45kg of waste per pupil each academic year, and an estimated 186,500 tonnes of waste are generated by primary schools per year in England, mostly food waste, paper and card[8]. The graphic below breaks down the types of waste produced in primary schools.

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[8] Retrieved from:
www.recyclenow.com/schools/recycle_at_school_guide/start_recycling/how_much_does_your.html

Figure 8 – Percentage of the types of waste produced in primary schools in England

Primary		
Paper and card	30%	
Food waste	46%	
Dense plastic	5%	
Garden waste	5%	
Plastic film	4%	
Miscellaneous	3%	
Fines	3%	
Metals	2%	
Glass	1%	
Textiles	1%	

186,500 tonnes per year
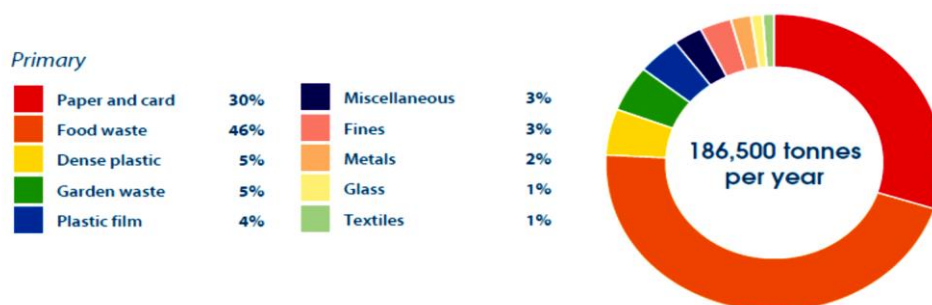
Source: Waste and Resources Action Programme (WRAP) 2008

According to DCSF (2009e), schools in the UK spend £70 million annually on the provision of fresh water and the treatment of waste water. A typical primary school can have an annual water bill of more than £2,000. However, the majority of schools are unlikely to undertake weekly analyses of their water consumption and few schools have any form of water-saving measures (DCSF 2009e).

1.3 Reducing schools' environmental impact

Five of the eight doorways of the 'Sustainable schools' strategy focused on the building and grounds of schools, providing guidance and guidelines to reduce energy and water consumption, have greener grounds and healthier food. According to DCSF (2006) overall more than 20% of energy is wasted and yet simple good housekeeping could reduce fuel bills by 10%. DCSF (2006) suggests a number of measures that could help schools minimise consumption, such as upgrading heating controls, using energy efficient lighting, installing smart meters and water conservation devices, managing the use of ICT, and switching off all equipment after use. The table below illustrates the differences between schools' consumption of water and electricity; it provides an example of the disparities between the top consuming schools and the bottom ones (with differences of about £35 for energy and £12 for water per pupil).

Figure 9 – Schools' consumption of water and electricity

	Energy per pupil	Water per pupil
Highest 10%	£51.87	£15.93
Highest 25%	£38.98	£11.36
Average	£29.08	£7.98
Lowest 25%	£21.93	£5.67
Lowest 10%	£16.46	£3.97

Source: DCSF (2006)

The age of the building, state of repair, occupancy hours, amount and type of electrical equipment installed and monitoring, maintenance and the way staff and pupils use the equipment are the main factors influencing these differences in performance (Terry 2008).

The 'Sustainable schools' strategy is part of a broader set of policy initiatives. During 2005/06 the Government invested £5.5 billion in school buildings with the programme *Building Schools for the Future*, aiming to renew or rebuild every secondary school in England within fifteen years (DCSF 2007a). The aim was to build buildings "to make the greatest possible contribution to mitigating climate change, in construction and in use", and improve the carbon footprint of new schools by reducing CO_2 emissions by 60%. A number of suggestions were presented, including: taking advantage of natural lighting, heating and cooling; having good insulation in roofs and walls; installing green roofs and energy efficient boilers; using a flexible design and flexible materials; harvesting rainwater; and assessing the impact on biodiversity (DCSF 2007a). This project, together with other initiatives (e.g. the 'Sustainable schools' programme) is a good example of the interest of the government in the buildings and grounds of schools, making resources available for the construction of more efficient buildings and the reduction of national carbon emissions.

An example of a school which was designed taking into account these requirements is Kingsmead primary school in Northwich, Cheshire (England), opened in September 2004. It has a building designed and built as an "exemplar learning environment and sustainable school for the 21st Century, with the aim to minimise their footprint on the environment."[9] The school states that it generates only one sixth of the CO_2 emissions compared with an average existing primary school. Data collected in 2002 from 1,971 schools for the Department for Education and Skills (DfES) Asset Management plans, shows that the best school produced 34 kilograms of CO_2 per square meter, a typical school 49kg, the worst 67kg and Kingsmead only 9kg/sqm.

Kingsmead primary school shows a significant difference in emissions compared with a typical school, due to the implementation of sustainable materials, solar panels, a biomass boiler, rainwater collection, and awareness among staff and pupils. However, these achievements and improvements should be taken with caution since, as shown before, a significant amount of CO_2 emissions from schools are from indirect sources and will not be improved with eco-buildings alone, but with a concerted action between schools, government and suppliers. As stressed by Terry (2008),

> Quite often schools are locked into purchasing unsustainably despite the best intentions being expressed by leadership teams. This occurs partly because of the

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[9] Retrieved from:
http://clc2.uniservity.com/GroupRenderCustomPage.asp?GroupID=176912&ResourceId=2226306

infrastructure or because of apparently restricted choice, but it most often flows from habits, routines, and dominant values. (Terry 2008: 68)

School procurement plays an important role on the impact of schools on the environment. The SDC (2009) has calculated that 42% of carbon emissions from the school sector come from procurement, the day-to-day buying choices and decisions made by each school.

Another aspect worth looking at is the potential of old buildings and problems of eco-features. Bunn (2008), a consultant specialist in building performance, took three schools from different eras: one Victorian, another from 1970s and a third one from 2004 and tried to answer the question: which is the best at fighting off the greenhouse effect? The results show that the one built in 1970s performed particularly poorly, since schools by then "were neither built to last nor with green issues in mind" (Bunn 2008). The school that performed the best was the one built in 2004, having been built in an attempt to create an exemplar of low energy design and construction. However, there were no significant differences between this school and the Victorian one. According to the article by Bunn (2008), the carbon footprint of the 1970s school was difficult to determine, since the school does not monitor its energy meters and the billing was sporadic and inaccurate, so the carbon footprint was between 66-71 kg of CO_2/square meter per annum. The Victorian school is poorly insulated and not very airtight and its carbon footprint has been calculated at 51kg/sqm. The 2004 school has a carbon footprint of 48kg/sqm, so only slightly better than a school built more than 100 years ago with no concerns with eco-features. Bunn (2008) explains these findings saying that the bio-fuel boilers, solar water heating and rainwater recovery systems are proving more demanding than expected and can put "school administrators on a management and maintenance treadmill that they are neither trained for nor expecting". The woodchip boiler, for example, proved the most difficult to get working properly and contributed to a much higher consumption of gas compared to the back-up boiler taken for granted by the design team.

The implications of this kind of studies for future investments in renewable energy and eco-buildings in general, reveal that schools do not become immediately greener with the purchase and use of solar panels, wind turbines or woodchip boilers. These specific equipment need to be operated and maintained by someone who has the skills to do it, and the results may only be achieved in the long-term run.

The fact that schools contribute to 3% of UK GHG emissions, together with the arguments presented above about the importance of the indirect emissions and the difficulty of managing some of the eco-features, could be easily used against the recent investments in buildings and grounds of schools in order to reduce their carbon footprint and save money, if it were not for the fact that schools are also role models and are expected to 'teach what they preach'. This brings us to the broader discussion of the role of schools and how to place

sustainable development in this query. Scott (2009a) shows this problem by raising the following questions:

> Why isn't it enough for a school to address sustainability in its work with young people through imaginative and engaging teaching, and stimulating opportunities for learning? Just why does a school need to live sustainability out in practice – to be sustainable as an institution in order for young people to learn? Given that the contribution of the school sector to the nation's carbon/ecological footprint is visibly small, why allow an obsession with being sustainable divert energy and resource away from stimulating young people's learning? After all, just what are schools for?

Contrary to this view, that schools being primarily educational spaces, should focus on providing opportunities for learning and practising ESD, there are authors and school staff stressing the fact that schools cannot teach about sustainability if pupils do not see sustainable practices in the school; that students need a role model and to practise what they are learning; that if schools teach something and practise something different that may create a 'hypocritical image', since schools and adults are suggesting pupils do something that they are not themselves doing. These dilemmas contribute, partially, to understand the need to ask the question 'what does one want ESD for' by exposing the need to make clear decisions about where to invest inside the schools, in the building or in the curriculum, in the physical performance of the schools or in the values and the knowledge promoted. However, this is only part of the problem since the question is aimed at schools, but also at policy makers, academics and the society in general. It is important to understand what kinds of projects are being developed by schools, but it is equally important to understand what we, as a society, want to achieve with those projects, given the current societal model.

In sum, there is a strong emphasis, in the literature and the 'Sustainable schools' policy, on the need to reduce the ecological footprint of schools, leading by example. However, it seems that most of the projects and policies do not acknowledge the complexity of the task. There is the need to consider the resources and knowledge need to make full use of the 'eco-features' such as solar panels; the need to consider the direct as well and the indirect schools' carbon emissions; and the limitations that arise from the different, and sometimes conflicting, roles schools are expected to perform.

This chapter aimed at introducing the broader context of schools' ecological footprints by discussing the importance of understanding the main environmental/societal problems that the UK is facing, how schools contribute to those problems, and what the role of schools in this problematic is. Therefore, it highlighted that:

(i) The most pressing environmental/societal problems found in the UK are climate change, loss of biodiversity, pollution and waste;

(ii) The schools contribute to these problems in several ways: GHG emissions from English schools continue to rise, contributing to 3% of UK GHG total emissions; generating a total of 186,500 tonnes of waste per year; and spending around £70 million annually on the provision of fresh water and the treatment of waste water;

(iii) The investment in eco-buildings may not have the expected results due to several reasons: a large amount of CO_2 emissions is due to indirect emissions, which will not be tackled with the improvement of school buildings alone; the fact that a school has an eco-building does not immediately lower the school energy and consumption, since the equipment needs someone that knows how to operate it;

(iv) The ecological footprint of schools is the starting point to understand why there is an emphasis on transforming the schools into 'greener' places, and how that imperative is transformed into policies and practices.

This initial chapter presented and discussed the more material reasons to develop ESD in schools, and how are schools contributing to the national environmental footprint. The next task is to understand how ESD is presented in the literature and what sort of projects and practices schools should develop, according to different scholars and official discourses. Therefore, in the following chapter I will do a review of the key definitions of ESD in relation to the problems involving the concept of sustainable development. Given that schools are mainly places to teach and learn and that the eco-features may not have the expected results in targeting climate change or reducing GHG national emissions, it is important to understand what schools are asked to do in terms of sustainable development goals and what sort of constraints do schools encounter in their way.

Chapter 2

Review: exploring complexities in the relationship between schools and education for sustainable development

The main objective of this chapter is to explore the ways ESD is defined and interpreted in the literature. By looking at the way ESD is discussed by some of the most influential authors, I am aiming at identifying the key characteristics and purposes of developing ESD in schools according to the literature analysed. This exercise is intended to explore the complexities emerging from the interactions between sustainable development and schools.

Education has several roles and purposes and serves different interests that change over time and place, from preparing children/young people to live in society, to achieving individual goals and to contributing to the economic growth of the country, and/or to promoting community engagement, environmental awareness, social cohesion and global citizenship (Carlsson & Jensen 2006). However, never before has it been so relevant to explore how these different roles can be articulated together in order to place schools at the heart of the shift towards a 'greener and fairer' world. Different agents (the academic literature, policies, NGOs, schools) tend to naturally attribute to schools the role of teaching to live 'sustainably' and so my interest here is to analyse how ESD is described and presented, what kind of purposes is supposed to serve and what kind of constraints it may have to face. Constraints related to the contested nature of sustainable development and to the current Western social, economic, educational model.

'What do we want ESD for'? Is the question that comes to mind when one tries to assess the possible outcomes of ESD and how a certain type of education is assumed to lead to a 'sustainable society'. Do we want ESD to change the world? In that case, what world are we talking about? The Western world, the whole world, because the needs and problems are significantly different from one region to another; or do we want ESD to change some things in our societies? Maybe we want people to pollute less, recycle more and consume healthier food and, in that case, we want ESD to do 'business as usual but greener and fairer'. Or, do we want to reduce expenses with ESD? Expenses in health services because people would have healthier lifestyles, or expenses on energy and water costs because people would use the resources more efficiently; Or do we want ESD to soothe our conscience?

For some authors, (e.g. Orr 1992, 2004, Fien 1993, Sterling 2001, Bowers 2000) the existing formal education is perceived as part of the problem concerning our unsustainable development model, since it seems to contribute to our fragmented view of the world, our emphasis on individual achievements, our disconnection from the natural world, our apathy towards environmental/social problems, our lifestyle and consumption models. We have a "competitive school" model that seems to contribute to our unsustainable world; an "indoor

school" model that alienates us from the natural world; and a "segmented school" model that disables us in understanding the interconnectedness of the world (Carlsson & Jensen 2006).

There is an argument, according to the same authors, that we need a new type of education, which is systemic, action-oriented, problem-solving, with outdoor activities, which brings the community to the school and the school to the community (Fien 1993). Research on schools and children shows that participation, regular contact with the environment and the instilling of best practices can have a greater impact on changing attitudes and on the awareness of roles and responsibilities towards others and the environment, than the typical knowledge transmission inside the classroom (e.g. Porritt el al. 2009; Birney & Reed 2009; Gayford 2009). The idea behind ESD is constructed taking on board this model of education which is interdisciplinary, problem oriented, experimental, and lifelong and so would create responsible citizens adapted to change, the respect of other cultures and a peaceful sustainable society (UNESCO 2006:16).

Several authors (e.g. Orr 1992; Huckle & Sterling 1996; Sterling 2001; Tilbury 2011) have written about ESD and its characteristics, however, since the concepts of sustainable development and sustainability are contested and problematic, one faces some dilemmas when one tries to implement an education for a type of development that is yet to be fully understood. Moreover, there is also the need to reflect about the depth of those changes and the centrality of ESD in schools and education in general. Consequently, one also needs to consider how ESD practices in schools can coexist (if they can) with unsustainable school practices and societal opposite conducts. In short, ESD faces several challenges that will guide our discussion through this chapter:

a) 'Birth' challenges – the use of the words 'education' 'for' 'sustainable' 'development' in the same concept brings potential problems not only related to the difficult and the broad definition of each of these words but also, and more importantly, with the different and sometimes conflicting ideas about them;

b) Essence challenges – it is agreed in the literature that ESD, by nature, is a type of education that is holistic, multidisciplinary, connective, process-oriented, which contrasts and conflicts with the most common and conventional ways of teaching and so can be difficult for both to co-exist;

c) Location challenges – the place ESD should occupy in the school, curriculum and agendas is another important point, especially due the lack of a clear position for it in the education sector in general;

d) Contextual challenges – the values, morals, ethics and messages of ESD contrast with the values and messages from other social actors that can have the same, or even a bigger role in the socialisation of children/young people given the current Western development model based on consumption and individual competition.

Sustainable development, and therefore education for sustainable development exhibit elements of "wickedness", in the sense that these concepts are highly complex, involving a great degree of uncertainty about the outcomes and do not have consensual definitions (Balint et al. 2011). The concept of "wicked problem" was defined by Rittel & Webber in 1973 as a problem that is difficult to solve because of incomplete, contradictory and altering requirements that are often difficult to identify.

> The formulation of a wicked problem is the problem. One cannot understand the problem without knowing about its context; one cannot meaningfully search for information without the orientation of a solution concept; one cannot first understand, then solve (Rittel & Webber 1973:162)

Sustainable development and ESD are ill-defined concepts emerged in a complex network of interdependencies. Many times, the effort to solve one aspect of the problem may create other problems, "with wicked problems any solution, after being implemented, will generate waves of consequences over an extended period of time" (Rittel & Webber 1973:163).

Given the difficulties involving ESD, and mentioned above, there is need to analyse several points in this chapter: (1) the ways in which sustainable development is defined and interpreted by different scholars and what kind of problems this concept may bring to ESD practices, which will be the first section of the chapter; (2) the second section looks at the concept of ESD and presents its characteristics according to the literature; (3) the third section presents some projects developed by schools around the world with the purpose of exploring some of the facets ESD can turn into, according to the interests, agendas, motivations and interpretations of the different actors[10]; (4) finally, the last section explores the key paradoxes of ESD by presenting some of the main claims existing in the literature about ESD and discussing the problems with those claims.

2.1 ESD and the problematical nature of sustainable development

This section reviews the ways the key literature describes sustainable development and what kind of problems these discussions may bring to the development of ESD in schools. ESD is bounded to the concept of sustainable development, and so it is not possible to discuss and analyse the purposes and practices of ESD, without analysing the problems concerning the concept of sustainable development.

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[10] The programmes presented in this section were selected with the purpose of highlighting the different projects that can be developed under the concept of ESD, focusing more on the environmental aspects of the buildings and grounds (e.g. green schools) or on social aspects and social values of the curriculum (e.g. solidarity schools).

To accept the importance of the concept of sustainability for education is to accept something that constitutes a problem (Corcoran & Wals 2004). Sustainability itself is a normative ethical principle, not a scientific concept as such, and since it has both necessary and desirable characteristics, there is no single model of a sustainable society (Robinson 2001). The range of meanings attached to sustainable development reflects the contested issue of what development itself means (Forsyth 2005:109). Howard (1978:18) describes development as a "slippery value word" that can be used by politicians to push people in a certain direction. Advocates for particular ends in development, make explicit use of this slipperiness of the word to promote their objectives (Adams 2009:28).

Education for sustainable development is inevitably connected to the meanings of sustainable development and its practicability. When one tries to promote an education for sustainable development it is necessary to have in mind what exactly we want to sustain, how we are going to do that, where we should start and what we want to achieve. Or as O'Neil et al. (2008:156) place it, "sustainability: of what? for whom? for how long? and why?" How do we organise our society so that the quality of life is available to all? How can we do so in a way that protects our wonderfully rich but fragile natural world? How is it possible to maintain the economic and social development without "compromising the ability of future generations to meet their own needs?" (Brundtland Commission, World Commission on Environment and Development [WCED] 1987).

Especially since the *United Nations Conference on Environment and Development* in Rio (1992), the concept of sustainable development has become an internationally accepted keyword for political discourse committed to quality of life, the conservation of natural resources and a sense of obligation to future generations (Becker & Jahn 1999:88). Some say that is the late twenty-century expression for progress, emerging in the 1980s as a field of discourse from the conjugation between developmentalism and environmentalism (Sachs 2010:265).

There is a pressure from different national and international organisations to reduce CO_2 emissions, increase the awareness about resource scarcity and the need to use them more efficiently, by reducing, re-using and recycling. The aim is to achieve a more 'sustainable' society. But what does it mean to 'become sustainable'? As Scott and Gough (2003:14) stressed, sustainable development and sustainability are difficult and nebulous concepts for the majority of people, due to their complexity.

Many definitions are rhetoric and vague (Lélé 1991:56). Dobson (1996) have recorded over 300 definitions of the term, most of the times related to and/or overlapping with other terms. Differences emerge from the goals that it may achieve: economic development, better environment, special attention to poverty, citizenship (Hanley & Atkinson 2003:84); the context where it is used (academic, business or environmental); and the different type of

users (policy makers, academics, NGOs, citizens). These interpretative aspects of sustainable development influence greatly the possible routes and outcomes, and bring us back to the question: 'what does one want ESD for'?

Education for sustainable development will be influenced by the choices made here. How governments and international organisations define, apply and measure sustainable development will impact on what schools will be asked to contribute to. Within the 'Sustainable schools' programme, sustainable development is defined as:

> A way of thinking about how to organise our lives and work – including our education system – so that we don't destroy our most precious resource, the planet. It means much more than recycling bottles or giving money to charity. It is about thinking and working in a profoundly different way (DCSF 2006)[11].

The definition above highlights the need to change, change our values, our life, and our society in order to avoid the destruction of our life support, the Earth. Sustainable development is about helping pupils to develop knowledge, understanding, values and skills. In this sense, the curriculum, the approaches to teaching and the learning experiences are key elements of an effective sustainable development. This definition strongly emphasises the need for change that should be taken in a holistic way, incorporating all the aspects into our lives, but it does not specify in any way how, where, when, and for how long should this change occur.

Whereas the definitions I have presented above, give some initial details about sustainable development, there is the need to look into more detail at the different aspects the concept of sustainable development may enclose, in order to have a better understanding of the concept of ESD. Therefore, next I am going to summarise the most relevant elements in varied definitions of the concept provided by different scholars.

(a) Sustainable development as development that can reduce poverty, protect the environment and support economic growth.

A common way to define sustainable development is by highlighting the need of equilibrium between three elements: the environment, the economy and the society, looking at environmental protection, economic growth and social equity. Garcia (2006:16) stresses that sustainable development means in practice a peaceful coexistence between these three elements. In an ideal world, environment, economy and society's wellbeing should sustain themselves mutually and none of them should develop in a way that jeopardises the development of the other two.

In this sense, there are three main characteristics of sustainability that emerged from the contributions of different authors. Firstly, on an analytical level, societal development can no

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[11] Retrieved from: www.teachernet.gov.uk/sustainableschools/about/faqs.cfm?id=1

longer be viewed without considering its natural prerequisites. Secondly, there is a hierarchical interdependence between the economy, the society and the natural environment, since "while societies are possible without a market economy, neither can exist without a natural environment" (Becker, Jahn & Stiess 1999:15). Or, as Pearce et al. (1990) demonstrate, in order to understand sustainable development it is fundamental to perceive that the economy is not separate from the environment in which we live, that there is an interdependence between them, both because the way we manage the economy impacts on the environment and because environmental quality impacts on the performance of the economy. And thirdly, there should be a commitment to action in order to reshape the relations between human beings and their environment (Becker, Jahn & Stiess 1999).

(b) Sustainable development as a policy goal;

Interest in sustainable development has risen gradually over the last 40 years, together with the increase of public awareness of the need to identify solutions to environmental and social issues that the world is facing. The history of sustainable development policy probably begins with the 1972 *Stockholm Conference on the Human Environment*, leading to the Stockholm Declaration and to the establishment of the issue of environmental management on the global political agenda (Scott & Gough 2003:23). According to Palmer (1998:26) the idea of sustainable development was first used in an International Forum in *the World Conservation Strategy* (IUCN 1980). Seven years later, a report called *Our Common Future* (WCED 1987), or the *Brundtland Report* as it became known, defined sustainable development, in a very concise summary, as: "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (p.43). One of the critiques that arise from this approach is that it is descriptive, that provides an agenda, a desirable policy objective, rather than a blueprint for action, with concrete measures and penalties (Sarre & Smith 1991). In addition, when the declaration refers to the idea of needs, the focus is only on human needs, and not on those of ecosystems and animals (Yearley 1996:132). Another problem is stressed by Redclift (2005:201): needs change over time, therefore it is unlikely that the needs of future generations will be the same as those of the present ones, since future needs cannot be predicted. Furthermore, the idea we have about the environment and our perspectives of the value of nature change over time and place (O'Neil et al. 2008:99) and our perception and the importance we give to some problems rather than others is influenced by societal institutions, like science, the mass media and politics. (Hannigan 1995:125)

In 1991, the IUCN together with UNEP and WWF published a revised version of the *World Conservation Strategy* entitled *Caring for the Earth: A Strategy for Sustainable Living,* whose aim was to help improve the condition of people by defining two requirements: a commitment to an ethic for sustainable living and the integration of conservation and

development. One year later, in June 1992, the United Nations convened its Conference on Environment and Development in Rio de Janeiro, the so-called *Earth-Summit*. This Conference produced five major documents, including the *Rio Declaration of Environment and Development* (with 27 principles that define the rights and responsibilities of nations as they pursue human development and well-being) and *Agenda 21* (an agenda for global actions to effect the transition to sustainable development). Given hardening evidence of anthropogenic climate change, the subsequent World Summit on Sustainable Development in Johannesburg (2002) was dominated by the debate about how best to manage the accelerating impacts of human activities on destabilizing and degrading environmental systems (Hanley & Atkinson 2003:102). Twenty years later, in Rio+20 Summit 2012, the focus was mainly on greening the economy and poverty eradication.

The Rio+20 declaration was highly criticised by the civil society, several scientists and groups concerned with the rights of indigenous people, women's rights and nature rights. The declaration was seen as "lacking ambition" and concrete measures to implement the ideas projected, as it proposed a "shopping list of wants, rather than a call to action." (Association for Women's Rights in Development 2012)[12].

In the UK, sustainable development started to be addressed with the publication of the White paper *This Common Inheritance: Britain's Environmental Strategy* in 1990. It marks the Conservative Party's first real engagement with the agenda of the Green movement (Kearns 1991:66). Its core focus was the political containment of environmentalism, and it took "the steam out of the environment as a political issue." (Lafferty & Meadwcroft 2000:78)[13].

(c) Sustainable development as an urgent need;

To understand the meanings of sustainability one has to assess what it is about our world that is unsustainable. Unsustainability is not just about the natural environment, it is about social conditions, politics and the economy as well (Webster 2004:12). In the last 200 years, there has been an unprecedented pressure on the Earth's physical, chemical and biological systems, essentials for the continuity of life on Earth, as stressed in chapter one. Scientific evidence demonstrates that environmental limits are being reached, with uncertain results for the future well-being of people and nature (Hanley & Atkinson 2003:80). "How long can we keep doing what we are doing?" is the essential question of sustainability (Bell 2009:97). Loss of biodiversity (according to IUCN, 17,291 species out of 47,677 assessed species are threatened with extinction), global warming (eleven of the last twelve years are among the twelve hottest ever recorded), ozone depletion (by 1996, a 'hole' three times the size of the USA has developed over the Antarctic), resource depletion (one billion of people already

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[12] Retrieved from: http://www.awid.org/News-Analysis/Rio-20-Special-Focus/Women-s-groups-statements-and-reactions-Folder/%28offset%29/10
[13] The development of sustainable development in UK policies will be addressed in more detail in chapter four.

suffer a shortage of fresh water), population growth (between 1950 and 1990, the world's population more than double – from 2,6 to 5,3 billion), pollution (land, water, air) inequality and environmental justice (those with the least power get the most pollution), the rights and beauty of habitats (sustainability concerns not only the conditions of human life but also the conditions of the lives of nonhumans) are some of the serious problems that we are facing today and also potential challenges to achieve sustainability (Bell 2009).

(d) Sustainable development as a process;

Sustainable development can also be considered as a "process of conscious collective evolution" (Harrison et al. 2000) and not a matter of a few quick fixes and business as usual or pursuit of a single social value. It is continuous principled vigilance.

(e) Sustainable development as a desirable pathway;

At the top of the different interpretations of the concept and purposes it may serve, there are also differences on how it should be pursued. For some authors, there are two main and opposite approaches to sustainability. One is called technological pathway, close to the idea of ecological modernisation (Mol & Sonnenfeld 2000), whose defenders believe that there is no need for drastic changes or for a new paradigm, since the answer to the problems is in the development of better technologies and the continuation of economic growth, by greening the economy and the consumption. On the other hand, the ecological pathway requires a change of paradigm, a change that requires rethinking about our lifestyles, our values, our agriculture, energy, urban design, forestry… There is a need to find alternative routes from those that have created the problems we are facing today (Orr 1992).

So, summing up, sustainable development is mainly described as: (a) A development that can reduce poverty, protect the environment and support economic growth; (b) A policy goal; (c) An urgent need; (d) A process; (e) A desirable pathway. Sustainable development appears as the twenty-first century 'life buoy', capable of combining the continuity of improvement in the quality of life and the respect for the carrying capacity of supporting ecosystems, a kind of development that provides improvements in the quality of human life and at the same time conserves the vitality and diversity of the Earth. UNESCO (2002:201), for instance, talks about sustainable development as a "catalytic vision rather than a neatly defined, technical concept".

The difficulties arise when ideas have to be put into practice, when sustainable development needs to be measured, when pathways have to be defined in order to target our evolution towards a more 'sustainable' society. The different meanings and definitions of the concept and the lack of an objective definition and precise goals, combined with the difficulties of placing these measures in practice are at the base of the controversies and the critiques of the concept and its feasibility (Bonnett 2002:158).

Perhaps an universal definition and universal goals are the first problem concerning sustainable development, or the maladjustment between the goals of the North and the problems from the global South, or the lack of funding to develop green economies, or the different lobbies and economic interests of big corporations, or the fact that so far, the major problems concerning climate change are happening in countries such as Uganda, Sudan, India, or Pakistan. As Redclift (2005:125) argues, sustainable development needs to address the environmental costs passing on from one group of people to another, "the North dumps much of its toxic waste, and poorer technology on poorer countries, and sources many of its 'needs' for energy, food and minerals, from the South". The conflict in Democratic Republic of Congo is a good example of how our hi-tech way of living feeds the war and devastation of the country, which is rich in minerals (e.g. gold, tin and coltan) that, once transformed into metals, are, among other things, essential components of mobile-phones, I-Phones, laptops and many other electronic equipment, essential to our modern lives (Eichstaedt 2011:187). This illustrates the complexity of the task and how measures to achieve sustainable development in the Western nations can, in turn, worsen the living conditions and the environment of developing countries, left to deal with the 'dirtiness' of the transformation process.

This section described briefly the history of the concept and the main problems associated with sustainable development by discussing the contributions of different authors. These problems help us to understand why it is particularly important to explore the different purposes ESD may serve, since sustainable development can also be used to fulfil different interests, and why it is so problematic to see education and schools as vehicles to achieve sustainable development.

Together with these 'internal' problems related to the conceptualisations, motivations and interests shaping sustainable development, there are other problems which will also impact ESD and its outcomes. Problems related to the role of education and the contrasts between what ESD proposes and how the current development model works, as I am going to discuss along the chapter.

The next section will look more specifically at ESD with the purpose of identifying its key characteristics according to the different authors cited. Given the complexity involving the concept of sustainable development, it is important to question ESD and understand not only the type of education we are talking about, but also, and more importantly, what do we expect to achieve with it.

2.2 Questioning education for sustainable development

In this section I am mainly drawing on polices from UNESCO, DfEE and the UK National Commission for UNESCO, and especially authors such as Sterling, Huckle, Tilbury, Fien, Webster & Johnson, and Orr, due to their relevance in the field of ESD. This section reviews the most significant definitions of ESD presented by some of the most influential organisations and authors in the UK context and what kind of 'formula' these same authors propose in order to develop ESD in schools. Only by understanding the way ESD is constructed in policies and literature is it possible to reflect about the practices found in the schools and how those differ or resemble the way ESD is theorised.

The literature was selected with the intention of analysing the way the different authors described ESD, what kind of characteristics it should have, and what type of attitudes, values and knowledge it should promote and how. Despite the closeness of ESD with the environmental education field and its literature, I will argue that the selected authors distance themselves from this field, by presenting ESD as an autonomous field with its own reasoning and arguments.

Education *for* sustainable development or education *for* sustainability demonstrates a particular intention expressed in the use of the word 'for'. Ross (2011:7) argues that *education for* something means, ultimately, change. Change to produce a different future, a type of education that "it is not reinforcing the present". Jickling (1992) argues that education *for* any cause is not "true education", since education should prepare minds to create new ideas and not to follow a doctrine. The skills, knowledge, values, behaviours promoted by any type of 'education for' are ethically driven and aim to achieve different type of outcomes. Sterling (2004:50) declares that sustainable development provides a "gateway to a different view of pedagogy", and these transformative views of pedagogy have informed other adjectival educational movements such as peace education; environmental education; global education; and environmental education (Lavery & Smyth 2003). Schnack (2008:181) argues that ESD can be understood as a "denoting initiative and effort that is driven by a shared ideal of improving the world we live in now, and for the future". As such, ESD can be described as "adjectival education" which intends to bring about social change.

Education for sustainable development differs from education about sustainable development or education on sustainable development (Sterling 2001:56). The emphasis is on "learning for change" and according to Sterling (2001), most of the current changes in schools concerning sustainability, such as the greening of schools movement, are located here. Education about sustainable development is described as an adoptive answer, as "learning as maintenance", while education *for* sustainable development is described as an adaptative

response which includes some reformation of the existing educational paradigm to reflect more thoroughly the idea of sustainability.

2.2.1 Definitions of ESD

The UNESCO definition is of particular importance since the *Decade of Education for Sustainable Development* (2005-2014) shaped the way different policies around the world were designed and contributed to a greater emphasis on ESD. These are the key features of ESD presented by UNESCO (2002, 2006):

a) Subjects and knowledge required – there is a description of the topics that ESD should cover and those are climate change; disaster risk reduction; biodiversity; poverty reduction and sustainable consumption; peace and human security; human rights; citizenship; natural resources management; energy; waste; water; globalisation and consumerism; ethical trade;

b) Methods – it should be participative, using methods that "motivate and empower learners to change their behaviour and take action for sustainable development" (p.19); interdisciplinary and holistic; values driven; multi-methods approach; participatory; applicable to daily life and locally relevant;

c) Role – it should be seen not as a particular programme or project, but rather as an umbrella for many types of education;

d) Characteristics – it should be about learning to: (1) respect, value and preserve the achievements of the past; (2) appreciate the wonders and the peoples of the Earth; (3) live in a world where all people have sufficient food for a healthy and productive life; (4) assess, care for and restore the state of our planet; (5) be caring citizens who exercise their rights and responsibilities locally, nationally and globally;

e) Values – respect for others, for difference, for diversity, for the environment and for the resources, should be at the centre of ESD;

f) Outcomes – such as critical thinking, collaborative decision-making and the ability to imagine possible future scenarios[14].

It is noticeable that UNESCO does not really provide an ESD definition, but rather information about its nature, characteristics, subjects that should be included and the potential outcomes. There is an emphasis on the importance of seeing ESD as an umbrella rather than another subject and there is also a focus on the need to promote certain skills and values concerning not only the protection of the environment but also solidarity values and

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[14] Retrieved from: www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development/

social justice. Although this way of describing ESD could be seen as open enough to be developed by different schools in different contexts, it is also vague and problematic. First, it only mentions briefly the need to use methods and teach subjects that are locally relevant, a characteristic that it is extremely important if one wants to link education with contextual realities; second the way it is described and the subjects it should cover can be almost seen as if ESD is everything, running the risk of turning into 'nothing'; and third it does not provide guidance on how to implement these ideas in practice.

Several other definitions have been given by different scholars, organisations and governments. Here I am only focusing on some of those most relevant to the UK context. *Agenda 21* (1992), chapter 36 talks about education for "equitable sustainability",

> We consider that environmental education for equitable sustainability is a continuous learning process based on respect for life. Such education affirms values and actions which contribute to human and social transformation and ecological preservation.

In its earlier stages, ESD was generally called Environmental Education (Lavery & Smyth 2003), and the quote above demonstrates the links that started to emerge between Environmental Education and sustainability.

Sterling in a report published by UNEP-UK (1992) describes education for sustainability as a process which: (a) enables people to understand the interdependence of all life on this planet; (b) increases people's awareness of the different forces (economic, political, social, cultural, technological, environmental) which foster or impede sustainable development; (c) develops people's awareness, competence, attitudes and values enabling them to effectively participate in sustainable development at local, national and international levels; (d) affirms the validity of the different approaches contributed by environmental education and development education (Huckle n/d).

In 1998, the Department for Education and Employment (DfEE) and the Qualifications and Curriculum Authority (QCA) published a report called *Education for sustainable development in the schools sector* (the "Holland Report") where ESD is defined as follows,

> The learning needed to maintain and improve our quality of life and quality of life of generations to come. It is about equipping individuals, communities, groups, businesses and governments to live and act sustainably; as well as giving them an understanding of the environmental, social and economic issues involved (…) Education for sustainable development enables people to develop the knowledge, values and skills to participate in decisions about the way we do things, individually and collectively, both locally and globally, that will improve the quality of life now without damaging the planet for the future. (p. 32)

This definition appears to draw heavily on the Brundtland definition of sustainable development, giving to education, the role of leading humanity towards a more sustainable

future. A type of education that seeks to promote a particular kind of development, able to ensure the durability of our societies with a better use of natural resources (Ricard 2012:203). Quality of life should be maintained and improved, both now and in the future, without damaging further, or irreversibly, the planet.

As an attempt to summarise the most important contributions to the shaping of ESD in the UK, I will describe briefly the inputs of different authors, which in my view represent well my general impression of the wider ESD literature. By analysing systematically the way the different authors define and interpret ESD, I concluded that the literature focus on the characteristics ESD should have, the knowledge it should stimulate, the skills it should develop and the attitudes and values it should promote.

a) Characteristics - Sterling (2001:15) argues that ESD should be extended (ethical, innovative, holistic, future oriented); connective (contextual, critical, systemic, relational); and integrative (inclusive, diverse, process-oriented, synergic);

b) Knowledge - Huckle (n/d) states that ESD should provide knowledge about the bio-physical systems, the technology societies use to exploit these bio-physical systems; the economic systems that shape investment in this technology and allocate the costs and benefits of the social use of bio-physical systems; the political systems which regulate the social use of these systems; the social and cultural systems; the alternative forms of technology, economics, politics, society and culture which "may allow societies to live in ways which are more ecologically, economically, socially, culturally and personally sustainable" and the social and political movements able to realise such alternatives. Terry (2008:7) argues that the National Curriculum already provides significant opportunities to develop understanding and awareness of sustainable development across all key stages and proposes ideas to the different curriculum subjects: in English, the study of texts from different cultures and traditions can broaden global understanding; in Mathematics, ESD can be addressed by using relevant data e.g. carbon footprinting, global travelling, quality-of-life indicators; in Science, the students can explore values and ethics in the application of science and technology and explore the key concepts of diversity and interdependence; Geography, according to the author and generally accepted, has a major role in developing ESD by fostering understanding of key concepts, developing critical thinking and exploring attitudes to the use of resources and globalisation; in History, the evolution of choices and values about the environment can be observed through time; in Physical Education, healthy lifestyles can be promoted; in Art and Design, sustainable environments can be explored; and in Modern Foreign Languages, the linking with schools across the world can raise awareness about diversity of lifestyles;

c) Skills - including communication, numeracy, problem solving, information technology (IT), and the technological, economic, political, social and psychological skills needed to live more sustainably (Huckle n/d);

d) Attitudes and values - are described as commitments to the well-being of human and other living things, to human rights, social justice and democracy, to tolerance, rationality and to work with others to bring about more sustainable futures (Huckle n/d).

2.2.2 Paths to develop ESD

Other authors focus on how ESD might be implemented and suggest different stages of development. Orr (2004:45) highlights that the journey to a "truly sustainable school" could be long and difficult, including a building with zero carbon impact, developing critical thinking skills and practical application in schools of principles enabling the transition to a low carbon economy.

Webster & Johnson (2008:123) propose four stages of implementation of ESD in schools: Stage 1, which is exploratory and where there are small-scale activities and projects developed with few resources and money available. This stage tends to be uncritical and it reinforces the "do with less", recycle, "do your bit". It is a moral agenda focussed on individual behaviour change; Stage 2, which is assimilatory, follows the principle of "business as usual but greener and fairer". There are initiatives to save money and make the building more efficient. In the community, more permanent features emerge, such as shared gardens, and reuse and recycling schemes. The curriculum investigates the social and economic aspects of issues and well as choices about commitment to action; Stage 3, which is strategic, focuses on schools making use of capital projects to obtain major cuts in carbon emissions. The overall sense in the school is about discussing the transition to a low carbon future "learning for change"; and Stage 4, which is described by the authors as "eco-restorative" where schools evolve and perhaps downsize and relocate to suit a low carbon economy. Systems thinking represents a preferred worldview and the school building and campus are possibly eco-restorative, producing more energy than is used and enhance biodiversity and social capital. The curriculum focuses on learning to change and is highly personalised, learning spaces are responsive and flexible.

The stages of implementation of sustainability proposed by the authors above represent an enormous challenge to schools and society because achieving a 'full' sustainable performance means that the institutions would have to change the way the use of resources is understood and move from consumers and polluters to producers of energy, biodiversity habitats and creative, responsible, flexible, caring citizens. At the current stage, where sustainability in schools is perceived mostly as 'do more with less', focusing on reducing the

use of resources but not necessarily changing the way the building operates or the way the curriculum is designed, the focus remains on stage 1 and 2 and those are already considered a great success.

Tilbury (2011) summarises the education shifts proposed by ESD where one goes from passing knowledge to understanding and getting to the root of issues; from teaching attitudes and values to encouraging values clarification; from seeing people as the problem to seeing people as facilitators of change; from sending messages to dialogue, negotiation and action; from behaving as expert to acting as partner; from raising awareness and changing behaviour to changing the mental models which influence decisions and actions, focusing on structural and institutional changes. These particular shifts concern changes in the way education is organised, transmitted and visualised, focusing on structural changes of education and proposing critical thinking skills, exploration of different views, depth of knowledge and the changing of mental models.

The collection of definitions and characteristics of ESD presented above reveals a certain consistency and convergence of ideas about what ESD should be and what it involves. ESD is, most of the time, based on straightforward assumptions about education and social change (Fien 1993).

Most of the authors described ESD as a process, a type of education which should promote a certain type of development. ESD is usual seen as a 'framework', which promotes knowledge, skills and values to implement 'sustainable' societies. This way of approaching ESD can be understood as instrumental and prescriptive, since it aims to provide the schools with a kind of instruction book on how to become sustainable, giving little attention to the contested concept of sustainable development, placing most of the attention on individual responsibilities and choices, overlooking the importance of the social context. A prescriptive ESD does not necessarily advocate a change in the development model, but rather an adaptation of the existing model in order to damage less our natural resources. "ESD seen primarily as an adjunct and reinforcement to a school's environmental management policy is not what most people had in mind when they considered an education for sustainability." (Webster & Johnson 2008:97)

A way of overcoming these problems is to understand ESD as a 'mindset', which does not necessarily impose certain values and knowledge but seeks to promote thinking skills and interdisciplinary approaches. Education *as* sustainability (Foster 2001) sees "learning as change" being essentially a creative, reflexive and participative process, however, and as stressed by Foster (2001),

> We are still very clearly being invited to focus critical and exploratory thought principally on patterns of practice held to be *un*sustainable, with the notion of sustainable pathways ('viable alternatives') as something guiding the exploration. (Foster 2001:155)

As highlighted by Palmer (1998:24) whilst there can be little doubt about the urgent need for promoting change in attitudes and behaviour to adopt more environmentally responsible approaches, debate continues on how to best achieve these goals and what the most successful ways of approaching ESD in practice are. More recently, Jickling & Wals (2008), reflected about the variety of perspectives about ESD and argued that the way educators respond to these varied perspectives will depend on how they think about education and the role education plays in society.

With my research, I intend to demonstrate not only that there are divergences about how ESD should be addressed and implemented, but also why it should be developed. Even when schools adopt all the suggestions and ESD is seen as the key element in the transition to a 'more sustainable' world, there are limitations and serious problems in seeing schools and ESD as the vehicle to get us from here to there, being here the unsustainable way of living and there the most sustainable one.

The following point will provide some examples of projects developed in different parts of the world and that integrate several characteristics described in this section, concerning ESD. These examples are used to illustrate the different ways ESD is placed into practice and what kind of outcomes schools are expected to achieve. My intention is to demonstrate that ESD has several potential interpretations and numerous potential ways of being developed, highlighting the need to question the intentions of developing this specific education since its embryonic state.

2.3 Schools for a 'greener and fairer' world

In the past few years, one has witnessed the development of new and interesting educational approaches related to the growing concern with the issue of sustainability. New buildings, new designs, the use of renewable energy, recycling, inclusion and participation are some of the key words that characterise these recent educational projects. The *Decade of Education for Sustainable Development* (2005-2014), led by UNESCO, reinforced the idea of 'new' and alternative visions for education, emphasising concepts such as citizenship, empowerment, participation, ecological education and green schools; consequently, new types of schools and new methods of learning and teaching have started to take shape.

Different motivations have come together to place education at the centre of the changes needed in society. For example, the increase in child obesity rates, with roughly three in ten boys and girls aged 2 to 12 classed as either overweight or obese in UK in 2010. The

decrease in the purchase of fruit, which in 2010 was 11.6% lower than in 2007 and a significant upward trend in expenditure on eggs, butter, beverages, sugar and preserves (National Health Service Information Centre 2012), can go some way in explaining the amount of attention given to the diets of children in schools, with the prohibition of certain types of food and drinks and the attention given to healthy lifestyles and healthy diets (through awareness in classes, letters to parents/carers, meetings and assemblies). It can also help to explain the growing of vegetables on the school grounds, or activities to promote walking and cycling, and the provision of healthy meals.

In NGOs that work closely with schools (e.g. Food for Life Partnership which aims to 'revolutionise' school meals; Soil Association; Garden Organic; Garden with Kids). In Government policies, the concern over healthy meals and lifestyles is also visible, with the establishment of the nutritional standards for school meals in 2001, and the document *Every Child Matters* (DfES 2003). *The Children's Plan* (DCSF 2007b), and the 'Sustainable Schools' strategy and its first doorway on 'food and drink' are another example of the emphasis on the diet and well-being of children.

One of the key messages of the 'Sustainable schools' strategy was the commitment to care "for oneself, for each other, and for the environment" (DCSF 2006). The focusing on children's diet can then be understood both as a way of having "healthier pupils offering healthy food and drink" that take care of themselves and also as a way of taking care of the environment by "sourcing sustainable, ethically produced and local food and drink" (DCSF 2009a).

> The quality of the food and drink our children and young people consume at school, and the manner in which it is bought, delivered and served, should be key priorities for schools, local authorities, pupils and their families alike. An unhealthy diet contributes to obesity and poor pupil concentration. Healthy, ethically sourced food can offer nutritional benefits while protecting the environment and supporting local producers and suppliers. (DCSF 2009a:5)

Besides the attention given to children's diets, there are also concerns over the carbon emissions and the contribution of schools to the national emissions. There is also an emphasis on the need to improve buildings and grounds of schools, in order to reduce the environmental impact of schools. This idea is manifested in different documents and initiatives, being the most important one the report *Securing the future* (DEFRA 2005), the UK's Sustainable development strategy.

Beyond these different agendas, that seem to be interested in achieving specific outcomes (e.g. healthier diets = healthier children = less money spend on health care), Burke & Grosvenor (2003) reveal that pupils are also interested in having a more environmental school and greater interactions with the outdoors and the wildlife. In his study, children

demonstrate discontentment with existing buildings and grounds and talk about their desire of studying in an eco-friendly school.

> My ideal school would be very eco-friendly. On the roof there would be solar panels and wind turbines in the grounds of the school. This would enable the school to generate its own electricity. Also, there would be a recycling area for all the school's paper and bottles. (Burke & Grosvenor 2003:24)

Saving energy and water and recycling are two of the core messages in schools when ESD is addressed, so it is not surprising that children have similar concerns and interests. The grounds are another area that seems very important to children and for some it would be good to have more natural features, such as water, wildlife and different kinds of animals,

> The school I dream of has a wildlife garden, a wood as well as a fantastic adventure playground with a wooden pirate ship.
> In my dream school there would be animals such as rabbits, hamsters, goats, perhaps a pig or two and some cows and sheep. (Burke & Grosvenor 2003:45)

Hicks (2002), in a survey carried out with ninety students, reinforces these results by identifying twelve key themes concerning the students' preferred futures in 2020. The survey reports that 74% of the participants would like to have a 'greener future' with clear air and water, wildlife, flowers, no cars, no pollution. So, one can conclude that, in general, there is a strong will and motivation from the different actors involved in the implementation and development of ESD in schools, however the motivations and interests behind this development vary greatly, influencing the projects and practices developed and the potential outcomes.

The following projects are examples of the different ways schools, in different parts of the world, are interpreting and developing ESD. They are relevant for my research because they exemplify that different stakeholders develop ESD for different purposes, highlighting the diversity of programmes and activities that can be developed under the name of ESD. These projects help to visualise what kind of practices have been developed in schools and how those practices should be understood in terms of the broader goals of sustainable development.

2.3.1 Sustainable Schools Project

The 'Sustainable schools' project appeared in different parts of the world during the last eight years or so. In the United States of America, there is a project called 'Sustainable Schools Project' (SSP), which started in 2005 and is described as a dynamic new model for improvement and civic engagement. It was designed to help schools using sustainability as

an integrating context for curriculum, community partnership and campus practises[15]. In Australia, around 350 schools took part in the 'Australian Sustainable Schools Initiative' (AuSSI) from 2002 to 2004, and since then the government has provided funding for a roll-out of sustainable schools across Australia[16]. Currently, there is a partnership of the Australian Government, the States and Territories that support schools to work towards a sustainable future. Sustainability is explored through four themes: school grounds and biodiversity; energy; waste; and water. The aim is to "build resilience and optimism, use action-oriented teaching and learning approaches, and have a focus on the future, in a transformative educational process." (Davis & Cooke 2007:12). Brazil, has developed the 'Sustainable Schools Programme' in 2008, a programme designed by the Institute of Permaculture and Eco-villages of Cerrado with the main objective of delivering educational experiences through courses, events, tours and programmes related to sustainability. The aim is to teach children about how to live with less, how to use the resources in a more rational way[17]. Recently the interest in these sustainable schools has increased and so, in 2013, the Brazilian government has invested R$100 million to involve around 10 thousand schools in the project.

In the UK, there are different projects related to ESD, from 'Healthy Schools' programme, to 'Extended Schools', 'Eco-Schools' programme and the 'Sustainable Schools' strategy. Schools can develop different aspects of their agenda by applying for different programmes together or individually, separately or simultaneously. The following chapter will look in detail to the 'Sustainable Schools Strategy' in England with the aim of analysing the way ESD was translated into an educational policy, what kind of resources were made available, how this programme resembles or differs from other programmes in place, and what kind of contributions were expected from schools in tackling 'unsustainable' habits and lifestyles.

2.3.2 Green Schools Project

'Green schools' is another project available to schools concerned with the transformation of society and the transmission of different values and knowledge. The rationale behind these schools is similar to the one of sustainable schools, however this rationale is clearly more related to the environment. The idea behind this project is based on the four pillars framework (see picture below) that integrates efforts to reduce schools' ecological footprints, to make school's environments healthier, and to get the whole community thinking about

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[15] Retrieved from: www.sustainableschoolsproject.org/
[16] Retrieved from: www.sustainableschools.com.au
[17] Retrieved from: www.ecocentro.org/vida-sustentavel/habitats/

solutions to the problems. "The pillars cover everything from new construction to maintenance, food service to the gardens, and office supplies to classroom curricula."[18]

Figure 10 – The four pillars of the "Green Schools" project
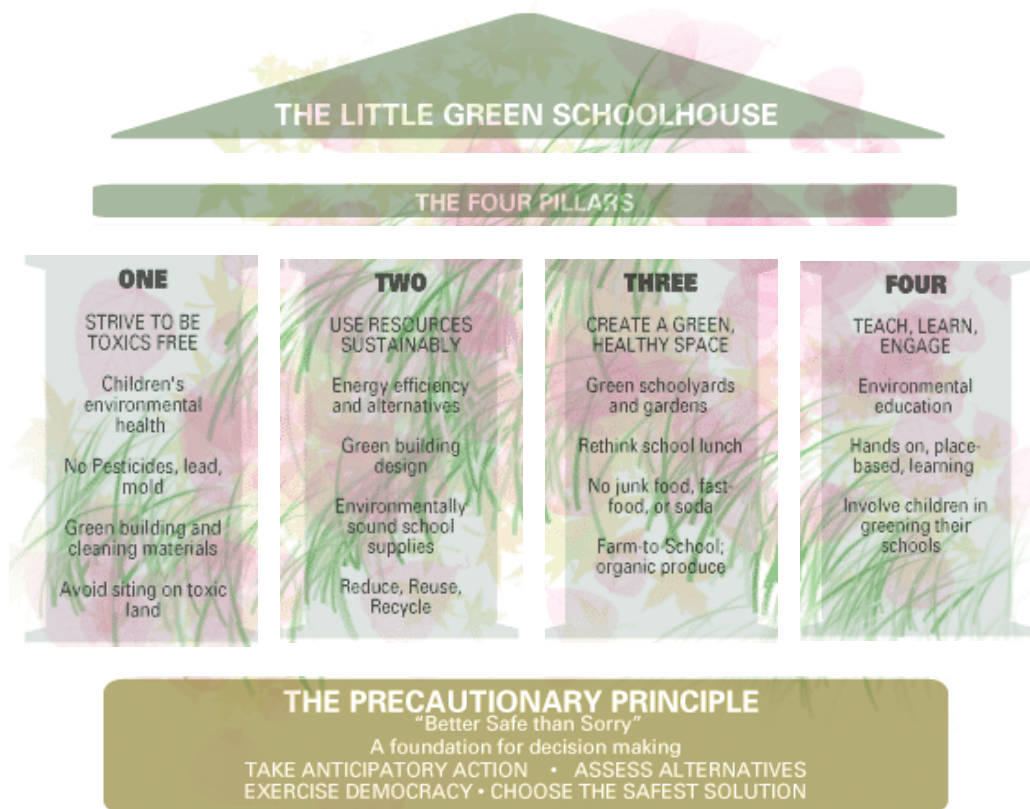
Source: Greenschools.net

An example of a green school is the 'Green School' in Bali, Indonesia. The main objective of the school is to "deliver a generation of global citizens who are knowledgeable about and inspired to take responsibility for the sustainability of the world"[19]. This 'Green school' is described as having a holistic education, a carbon neutral campus and a building with sustainable materials. It uses sustainable energy solutions like micro-hydro power, solar power, bio-diesel and predominantly natural air-conditioning; sustainable materials like Indonesian bamboo (see photo 1 in the appendices), local grass, traditional mud walls, and mud bricks; organic permaculture system, where students are engage in farming; alternative transportation to the campus by a cooperative bicycle programme and trail network;

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[18] "The Green Schools Initiative was founded in 2004 by parent-environmentalists who were shocked by how un-environmental their kids' schools were and mobilized to improve the environmental health and ecological sustainability of schools in the U.S". Retrieved from: www.greenschools.net

[19] Retrieved from: www.greenschool.org/

involvement of the community in the school and the school in the community; and the existence of a green lab where pilot environmental projects can be developed and sponsored. Unlike other 'green schools', the school in Indonesia was built with the purpose of delivering an education which revolved around environmental principles and ideas, and so the curriculum and the building were not adapted to ESD but rather the opposite. The key subjects were designed using ESD as the main driving force.

2.3.3 Environmental Schools Project

Close to the idea of the 'Green schools' projects, there is the 'Environmental schools' project. In Brazil, there are several examples of environmental schools such as the *Environmental School Municipal Nelson Barreto da Silva* which works as a training centre for other schools since 2006, on the themes of lifelong learning and global warming. Pupils learn in an interactive way about the importance of using the resources in a more rational way, about the importance of preserving species, ecosystems and biodiversity. The purpose is to educate children to become responsible citizens that care about the environment and the community[20]. Another example is the *Environmental School Nature Learners* which aims to "develop an efficient and critical environmental consciousness in pupils" exploring themes such as recycling, citizenship, ethics, and historical, cultural and environmental heritage of the local community[21].

2.3.4 Caring and Solidarity Schools Project

Other projects focus mostly on the social aspect of sustainable development, like the 'Caring and Safe Schools' in South Africa, which encapsulate United Nations Children's Fund (UNICEF) global child-friendly schools framework. This project was implemented by the National Department of Education in partnership with UNICEF in 2008, and attempts to define the provision of quality education in a holistic and integrated manner. According to this project, schools should be "effective, rights based, gender responsive, health seeking and promoting, safe and secure, and partnership oriented"[22]. Similarly, the 'Solidarity Schools Stamp' in Brazil recognises primary schools that prioritise their relationships with the local community through activities and voluntary projects. It identifies all schools committed to an education based on the ideals of solidarity, participation, and social responsibility. This

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[20] Retrieved from: www.itaquaweb.com.br/regional/9-itaqua/479-escola-ambiental-amplia-atividades-educativas
[21] Retrieved from: http://aprendizesdanatureza.blogspot.com/2010/06/conheca-escola-ambiental-aprendizes-da.html
[22] Retrieved from: www.nelsonmandela.org

'Solidarity Stamp' was developed by educators from different institutions who believe in this cause, to recognise the commitment of schools working to build a better world[23].

All the initiatives above provide examples on how ESD is translated into practices and how it can focus on different dimensions, according to the emphasis over the environmental or social aspect of it. It is rather common to perceive ESD as an education that promotes habits and knowledge to protect the environment (Jackson 2007), however, and as these examples demonstrate the purpose of the different projects are not only diverse but also ambitious in what they expect to achieve.

The next and final section of this chapter will provide a discussion about the ambiguities, the dilemmas, the paradoxes of ESD, taking into account the arguments presented along the chapter. By looking at some of the key ESD claims, this final section will identify the problems with those statements and discuss some of the consequences of teaching and learning ESD in an adverse and unsustainable world.

2.4 The ambiguities of ESD

In this section, I use some of the most relevant ESD claims and arguments from selected influential authors[24] to discuss the problems arising from such claims and to identify the sort of ambiguities that can be identified between those claims and the way schools and societies are organised. It is not my intention to argue that there is no awareness of uncertainties in the ESD literature, related to, for example, with the long-term effects of ESD. I am arguing instead, that these uncertainties are, in general, less discussed and less accounted for when ESD projects are designed or outcomes are proposed.

> Coming here today, I have no hidden agenda. I am fighting for my future… At school you teach us to behave in the world. You teach us not to fight with others, to work things out, to respect others, to clean up our mess, not to hurt other creatures, to share and not be greedy. Then why do you go out and do those things you teach us not to do? (Severn Cullis-Suzuki, age 12, addressing the Rio Earth Summit, 1992, Blewitt, J. 2004:176)

The quote above summarises one of the key problems schools face in addressing sustainable development: the contrast between what is taught and practised in schools and what is seen and promoted outside the schools. Several authors discussed the contradictions between what is taught and what is done; between what adults preach in schools and what adults do outside

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[23] Retrieved from: www.facaparte.org.br
[24] The authors used in this section were selected based on their contribution to the field of ESD and their importance on shaping both core literature of the field and related educational policies. Authors mention in this section, such as Sterling, Fien, Orr, Stevenson, Huckle, Porrit, are unavoidable names whenever ESD is debated and so are used here to discuss some of the most common claims found in different books/articles about the role of ESD concerning sustainable development.

the school gates; between the emphasis in the discourse of reducing, reusing and recycling in schools and the emphasis, outside the schools, on consumption, disposal and purchase of new products as individual achievements. Even the more committed schools, those seen as examples of good practices concerning ESD, are not free of external influences and the children are still exposed to the same things as others. I believe that ignoring the importance of social practices, consumption patterns, dominant social values, and economic and social pressures on the construction of pupils' identities, it is not only a mistake, but also a potentially risky thing to do, as I am going to explain.

2.4.1 Assumptions about ESD

There are some claims[25] in the main ESD literature that are worth exploring since they could provide a better understanding on the expected role of schools and education for sustainable development.

1st Claim – There is a problem with education

For authors such as Fien (1993), Sterling (1996), Webster (2004), Orr (2004), Huckle (2008), education has played a central role in continuing unsustainable practices. Sterling (1996:76) stresses that "education is proclaimed at high level as the key to a more sustainable society, and yet it daily plays a part in reproducing an unsustainable society".
The current Western educational model is described as fragmentary, disconnected, targets based, indoors, competitive, segmented, standardised, reductionist (Sterling 2001). These characteristics tend to contribute, to our fragmented view of the world and our focus on individual achievements and lead to disconnections from the natural world.

> The modern school became an institution that reflected modern reductionism and dualism. Students fail to understand how knowledge connects, how processes in the social world might combine with those in the biophysical world to produce sustainable development, and how people's local knowledge can combine with academic knowledge to foster such development. (Huckle 2004:89)

The world has never had so many literate people, with diplomas and specialised knowledge, and at the same time, so many problems of inequalities, environmental degradation and social integration (Almeida & Vieira, 2006:5). Orr (1992) makes the connection between formal education and environmental damage, stating that are usually those with higher degrees of knowledge and education that create a greater damage on the environment,

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[25] These claims arose from my detailed and systematic analysis of the ESD literature and the identification of the most significant and recurrent themes presented by some of the most influential authors of the field.

It is worth noting that (the destruction of the world) is not the work of ignorant people. Rather, it is largely the work by people with BAs, LLBs, MBAs, and PhDs (Orr 1992:5)

Bowers (2000) argues that the language of schooling and the emphasis on consumerism and technological solutions may work against the possibilities of the school as a place to promote sustainability and eco-justice. According to these arguments, most education reinforces unsustainable values and practices in society, and formal education is partially blamed for the 'destruction' of the world.

Education in England, according to Huckle (2008:12), has become not only more standardised and competitive, but has also been shaped constantly by the market and economic demands, transforming education into a vehicle of economic productivity and global competitiveness. This vocational and instrumental role of schools, serving mainly as agents of economic and cultural reproduction is at the basis of the problem for those who claim that formal education has been a key player in perpetuating unsustainable environmental practices (Fien 1993:65) and it is important to understand why there is an emphasis in changing education in order to address sustainability.

Stevenson (1987) states that schools as we know today evolved in the early nineteenth century as institutions for mass education with the intended purpose of transmitting basic knowledge and the skills of reading, writing and arithmetic, as well as to transmit a certain understanding of society and the pupil's role in it.

Historically then, schools were not intended to develop critical thinkers, social inquirers and problem solvers, or active participants in environmental and political (or even educational) decision making. Put simply, their intended function was not to promote social change or reconstruction. (Stevenson 1987:73)

Robinson (2001) compares the school organisation with factory lines with "ringing bells, separated facilities, specialised into separated subjects" (p.4), modelled by and serving the interest of the industrialism.

The vocational function of education became the main focus of education in England with the New Vocationalism expanded after 1979 with Margaret Thatcher and the Conservative Party, as an effort to reduce the high youth unemployment, which brought significant changes to the education system especially through the implementation of the *1988 Education Reform Act*. Smyth and Shacklock (1998:66), argue that the influence of neo-liberal and neo-conservative thinking has dominated educational thinking and practice, "bringing in a narrowly-cast vocationalism at the cost of more liberal and humanistic interpretations of the role and nature of education".

With the introduction of the National Curriculum schools were pushed to teach certain core subjects and could no longer choose what to teach. Assessments at the Key stages 1 to 4 in the form of Standard Assessment Tests (SATS) were introduced, and league tables, showing the performance of each school, started to be used. This ranking system enhanced competition between schools with the better ones attracting more pupils and resources, pushing schools overall to focus mainly on subjects that are externally assessed and that determine the position of the school in the national context (Huckle n/d).

2nd Claim – Schools cannot be part of the solution with the same kind of education that helped in the creation of the problem

According to Schumacher (2001:3) "the volume of education has increased and continues to increase,, yet so do pollution, exhaustion of resources, and the dangers of ecological catastrophe. If still more education is to save us, it would have to be education of a different kind: an education that takes us into the depth of things." More education is not the answer to this crisis – or at least, not more of the same.

The increase in complexity, uncertainty, unsustainability and information overload, characteristics of the world in the twenty-first century (Bruges 2001), together with the claim that education itself is part of the problem of environmental degradation and social injustice (Orr 2004) are reasons used to justify the need for change: changes in the content, methods and places of teaching and learning.

Re-structured and repackaged to respond to market needs in the last twenty years or so (Sterling 2001), formal education is now asked to not only prepare young people for the competitive market and to achieve individual success, but also to develop responsible citizens, that are aware of the needs of the community and the natural environment (UNESCO 2006). This is not to say that this is a particularly new function of schools, since schools as agents of socialisation were always seen as important mediators in the transmission of principles and values, however, what is new is the emphasis placed on the contribution of schools to a 'sustainable' world.

3rd Claim – Education should be redesigned

The idea behind education for sustainable development, which existed already in the rhetoric of environmental education, contrasts with the traditional purpose of schools, when it places its emphasis on the interdisciplinarity of the curriculum, on real practical problems and on the development of a critical type of thinking. This contrast underlines some of major contradictions between ESD and schooling (Stevenson 1987:74), and so calls for a

"transformed educational paradigm" that would turn transmissive learning into transformative learning (Sterling 2001:61).

In general, there is a sense that education should be redesigned in order to teach how to live in the world for, according to these views, current education needs to be rethought in order to start teaching subjects, values, habits in a way that promotes a more harmonious relationship between humans and nature. Orr (2004) argues that the need to rethink education has to do with the issues of human survival, which will direct the world during this century.

> Those now being educated will have to do what we, the present generation, have been unable or unwilling to do: stabilise world population; stabilise and then reduce the emission of greenhouse gases; protect biological diversity; reverse the destruction of forest everywhere; and conserve soils (…) No generation has ever faced a more intimidating agenda. (Orr 2004:27)

For Orr (2004), the current model of education does not take into account the twenty-first century challenges. Orr stresses that the skills, aptitudes, and attitudes necessary to "industrialise the earth, are not necessarily the same as those that will be needed to heal the earth" (p.30). This means educating the next generation to understand what they will need to do if they want to achieve sustainability for the world (Terry 2008:18). This task will require more than specialised knowledge and instrumental intelligence. Therefore, Orr argues that changes have to occur in four different parts of the education process: (a) in the substance and the process of education contained in the curriculum; (b) how education institutions work; (c) the architecture within which education occurs; and (d) the purpose of learning. In short, schools have to practice what they preach.

So, contrasting with the fragmented way of seeing the world, which is described by Sterling, in a report for WWF (2005:13), as "thinking in boxes" where problems are largely seen as separate, contained and solvable, in the same way knowledge is transmitted in the classroom, there is the "linking thinking", which is systemic, relational, ecological, holistic and integrative, better adapted to the increasing complexity of the world and the need to review our 'unsustainable' practices (WWF 2005). Capra (1982:23) underlines the fact that living systems are nonlinear and embedded in patterns of relationships, so understanding of the principles of ecology requires "a new way of seeing the world and of thinking in terms of relationships, connectedness, and context". This implies a shift from the parts to the whole, from objects to relationships, from objective knowledge to contextual knowledge, from quantity to quality, from structure to process, and from contents to patterns.

Figure 11 – The differences between the two "thinking" paradigms

"Thinking in boxes"	"Linking thinking"
To every problem there is a solution	Some solutions just produce more problems
We can understand something by breaking it down into its component parts	We need to look at the whole and the larger context
Objectivity is both possible and necessary to understand the issues	Most events/issues are related to other events/issues
Most processes are linear	We need to look at the "start" and all the knock-on effects at the "finish" and any feedback loops
If we know the state of something now, we can usually predict future outcomes	In human and most natural systems it is impossible to predict outcomes
We can understand things better through a rational response	The so-called opposites are in relationships

Source: WWF (2005)

Robottom (1987) argues that a shift towards an ecological paradigm for education does not simply mean more environmental education in schools, but involves changes in our total worldview, stating that the current educational model provides a "structured misrepresentation of reality, nature and human nature" (p.109). Porrit (1984) thinks that a radical reform in education is necessary. Education should be holistic, with pluralistic values and community-oriented, an "education for life on Earth" (p.95). Huckle (2006:25) stresses the challenges posed by sustainable development to industrialised societies and states that education may need to reorient itself radically,

> It may need to shift its emphasis from the past, industrialism, modernity and the nation state, to the future, post-industrialism, postmodernity, and global society. It may need to embrace new forms of knowledge, new ways of organising knowledge, new ways of teaching and learning (Huckle 2006:6)

So, according to these views, the re-orientation of the relationship human-environment/human-human demands a change in our mentalities, a different ecological consciousness, a new ethical conduct, placing schools at the centre of this agenda and ESD as the key vehicle for this change. 'Healthier schools', 'extended schools', 'connected schools', 'greener schools', 'low-carbon schools' (Porrit 2008:5) reflect this idea and emphasise the argument that better schools are the key to better societies. Education is described as the foundation for 'greener and fairer' societies and as a crucial element for achieving sustainable development, poverty eradication, equity and inclusiveness (UNESCO 2002:16). The report from UNESCO (2002:17) stresses that "years of schooling alone do not guarantee that students will receive an education relevant for their lives".

> In green societies, education needs to be grounded on the values of peace, non-discrimination, equality, justice, non-violence, tolerance and respect for human dignity. (UNESCO 2002:17)

Summing up, there is a call for education that transforms rather than replicates existing unsustainable patterns, injustice and unhealthy lifestyles and environments (Davis & Cooke 2007:33). Huckle & Sterling (1996) argue that societies will have to make unprecedented changes in a relatively short period of time if they are to achieve sustainability, education will have to play a key role in such transition, and will itself be transformed in the process. Educators, it is said, have an opportunity to be at the forefront of social change, informing students about the dangers of environmental pollution, climate change, population growth, destruction of rainforests, and initiating students into holistic practices that "will contribute to the post-modern global consciousness essential for ecological sustainability." (Slattery 2006:11)

2.4.2 Looking beyond assumptions

The claims discussed above identified some of the main problems related with the current educational model and proposed different ways of teaching and learning that might be more appropriate to deal with the present and future social and environmental problems. There is, however, the need to look at the social and economic context of education and children, and to all the other mechanisms, motivations and limitations that play a role in our daily decisions and that will influence the extent and scope of ESD outcomes.

The problems examined in this section represent my interpretation of the analysed ESD literature and the contradictions that arose from some of the theoretical claims and the context where ESD is developed. More precisely, I intended to demonstrate that ESD is surrounded by a 'hostile' environment, an educational, social, economic and cultural models that not only constraint the potentials of ESD, but might also pervade its outcomes.

1st Problem– Waiting for the next generation to 'fix the world'

We are placing all our hopes in education and in future generations to 'change the world' without really taking into account that schools are but one of many socialisation agents (even if a very important one). As stressed by Swift (1969),

> The education system is only one setting for the development of self-concept, valued aims, achievement motivation and cognitive skills (…) For education to have a chance to become a 'prime mover' in social change it needs to be widespread throughout the population, persistent in influencing the individual and it must be linked with the occupational structure in a more than subordinate fashion. (Swift 1969:56)

Sterling (2001:24) also argues that the idea of environmental education changing people is taken for granted, therefore society ignores three fundamental realities: (1) that education for change is often outweighed by the education system which is vocational and directed to

the market; (2) the social system affects and shapes the educational system more than the other way around; (3) the social-cultural environment affects people and influences values in a more efficient way than formal education programmes do. External factors limit the influence of schools on working towards a 'greener and fairer' world. All formal education takes place within a dominant cultural, social, economic and political context and so any discussion about ESD, and education for change, has to recognise first the great influence of this paradigm, which takes little or no account of the sustainability challenge (Huckle & Sterling 1996:55). The United Nations Conference on Environment and Development (UNCED) Secretariat in 1992 stated that "environmental education is increasingly seen as an instrument of social change that will assure a sustainable future". This belief, as stressed by Sterling (1993:85), is at best an act of faith, and at worst an oversimplification that ignores all the external factors and can delay urgent policy and societal changes "while we wait for the hoped-for effects of education".

2nd Problem – 'Do as I say, not as I do'

Schools express the values we cherish and reinforce those values. "Schools are educational churches, and our gods, judging from the altars we build, are economy and efficiency" (Eisner 1973:107). For Eisner, what schools teach is largely unintentional, they teach "in the fashion that the culture itself teaches". Once all education takes place within a dominant culture and in a specific social, economic and political context, there is the need to recognise the greater influence of the dominant social paradigm upon education (Sterling 1996), whenever ESD is discussed.

With ESD, one runs the risk of giving the message to young people that we have the right to use the natural resources as much as we want, that we have the right to develop our societies ignoring the needs of the global South, and the non-human animals, but they (the children) have the duty to preserve and re-use and consume less and act greener. Orr (2004) asks questions that may illustrate this problem:

> How in fact, do we equip the young to value health in a fast-food culture in which obesity is epidemic? How do we teach the value of peace when our culture glorifies violence and our government spends more than $400 billion each year on the military? How do we teach them to love the land and the community when our society values such things far less than it does individualism and consumption? (p.109)

Waters (2005:100) talks about the values fast-food passes on to children: that food is cheap and abundant and this abundance is permanent; that resources are infinite, so it is perfectly fine to waste; where food comes from, or how fresh it is, it does not matter, it is all about

taste, fastness and affordable prices. These messages are in total opposition to what is taught in schools and what children are expected to do in the future.

Palmer (2006:25), in the provocative book *Toxic childhood,* highlights numerous dangers to which children are exposed in our modern world and recognises the difficulties of avoiding those dangers since they are intrinsically connected with our way of living. For example, also about fast food, Palmer (2006) states that, despite the awareness of the high levels of salt, fat and sugar existing in this type of food, it is still extremely popular in our society and particularly among children and it is very difficult to keep children away from unhealthy food for long, because it is everywhere: television adverts, magazines, vending machines, supermarkets, cafes, displays, posters.

> When parents are conditioned by marketeers to feel that allowing choice shows love for their children, and children are persuaded by those marketeers to choose certain products, it can be extraordinarily difficult to resist the pressure. (Palmer 2006:26)

An important aspect to retain is the opposite messages children get from ESD and the surrounding world. We are not only teaching something that contradicts our way of living, but we are also passing on the message that, in the future we will need to live with less, while in the present Western society, to own and to buy and to consume are the main socially-recognised ways to achieve status, well-being, happiness, appreciation. Webster (2004:12) discusses the idea of consumerism and states that is possibly the greatest challenge of all the challenges facing sustainability. "Less=worse and worse=less happiness", who will vote for it? Expecting that people will change their consumption patterns "for the love of the planet or the community" is, for Webster (2004), unrealistic. He argues that, solid research suggests that only about 5% will follow that path. Palmer (2006:63) stresses the increasing importance brands have in children; brands are seen as a way to establishing children's status. An eleven-year old interviewed in the book *BRANDchilds* (Lindstrom & Seybold 2003) puts it this way "I love brands. Brands not only tell me who I am but also protect me from problems with the others in my class".

It is then easy to have the feeling that what is taught in school concerning ESD is at odds with everything else that is learned outside.

Despite the scientific knowledge, the statistics, the experiences in real life, and the reports about the increase in frequency, scale and seriousness of the environmental and social problems, that are not diminishing with the economic growth, most of us is still living like nothing is happening (Dunlap 2010:30). Our habits, lifestyles, values, attitudes and behaviours are not changing according to the evidence that we have now, that the continuity of life on Earth may be seriously threatened if the destruction continues at this pace. The change is difficult. Not only because it means that we should think, produce, consume and live differently, but also because some of the more elementary habits that we have today are

in contradiction with a more sustainable lifestyle. "The cultural and social dimensions of consumptions practice, including values such as comfort, care and cleanliness conflict strongly with the sustainability mantra to reduce, re-use and recycle" (Berkhout et al. 2003:285).

This is not to say that schools cannot have an important role and a special place in the transition to a more 'sustainable' society, but if what they teach contradicts with everything else in the outside world what consequences will that have? Webster & Johnson (2008) assert that this will only lead us to 'business as usual, but greener and fairer' with a main consequence of ESD as recycling.

3rd Problem – Unintended outcomes

The increase of awareness about social and environmental problems might have unintended consequences for pupils and create feelings such as disempowerment, frustration, inability, disappointment, angriness, disenchantment about the state of the world if there is not a concerted action and possible alternatives already in place. In a research report published in 2011, when discussing about the findings about pupil's outcomes, Hamish states that ESD outcomes were difficult to research and that there were some accounts of intended and unintended outcomes.

Unintended outcomes are often seen as a consequence of "messy" or "wicked" problems. As stressed before, "the consequences of the solution may yield utterly undesirable repercussions which outweigh the intended advantages" (Rittel & Webber 1973:63). The teaching and learning of ESD in schools, that are part of a society adverse to sustainability practices, may have unintended consequences for pupils and teachers.

Zeyer & Kelsey (2013:206) describe this problem as a "cultural clash" between students' life culture and the culture of ESD promoted in schools, which may lead to unintended and unforeseen consequences like environmental depression and ecological passivity. The authors stressed that in research with a class of high school students, it was possible to identify in students' statements similarities with the medical diagnosis of depression: "the bleak picture of the future; the pessimistic mood; the motive of guilt; the lack of feeling of control" (p. 208).

According to the authors, the students' tend to either feel guilt and overwhelmed by environmental problems or indifferent in the sense that they 'normalise' the environmental crisis by assuming that as individuals, there is little they can do and that 'unsustainability' is a necessary 'evil'.

4th Problem – Lack of evidence of ESD outcomes

There is some research that focus on the outcomes of ESD in pupils, schools and communities (e.g. Office for Standards in Education, Children's Services and Skills [Ofsted] 2009; Porrit et al. 2009; Birney & Reed 2009; Gayford 2009; Barrat & Barrat 2009) stressing the benefits these types of education can bring to the people involved and to the surrounding environment. However, these reports stress specific aspects that may improve with the contact with the natural world or with the promotion of inclusion and healthy meals in schools and not the long-term benefits or changes that some of the literature claimed.

Waite (2007) argues that there is substantial literature about how the outdoors provides "good memories" (e.g. Chawla 1990; Berryman 2000), however, other factors such as values and interpretations of parents and peers may also be influential and modify memory. Fien (1993:77) stresses that much of the writing about ESD is based on "unproblematic assumptions about education and social change", placing an unrealistic expectation on schools and teachers and neglecting the importance of individual lifestyles determinants and existing power structures.

There is no evidence that the children of today will be the 'responsible citizens' of tomorrow. There is hope that the change in schools will have an impact on the future of the pupils, but due to all the internal and external constraints I have discussed, one can only assume that ESD alone is not enough to change the world, if that is what we want.

Summing up, this chapter tried to encapsulate the different aspects that are relevant to understand the complexity of building schools for a 'greener and fairer world' by:

(a) Discussing the way ESD and sustainable development are connected by looking at the definitions of, and problems with the concept of sustainable development and how those can have an impact on ESD;

(b) Compiling the different definitions of ESD in order to have an understanding of what kind of education we are talking about and what the resources and changes needed to implement it are;

(c) Exploring the question 'what do we want ESD for' by providing different examples of projects (e.g. 'Green schools', 'Sustainable schools', 'Environmental schools') developed around the world, which exemplify how ESD is translated into practice and what the interests and motivations behind it are;

(d) Presenting the core claims about ESD in the academic literature to explore the problems arising from those assumptions.

The problems discussed above, lead, frequently, to an underuse of ESD possibilities, compromising the best intentions of schools to establish environmental awareness in their students. Given the complexity involving ESD, the 'wickedness' and 'messiness' involving the concept of sustainable development, the adversity faced by schools and ESD educators working on a difficult social context to develop sustainable practices and values, and the uncertainty surrounding the future outcomes of these practices, there is the need to analyse and discuss what schools are doing, what schools want to achieve, what factors influence (positively and negatively) ESD practices, and what schools cannot do.

The next chapter will present and discuss the methodological choices. As mentioned before, the research used a mixed-method research design, five case-studies, followed by the questionnaire. After exploring the issues involving the concept of ESD in the present and previous chapters, it becomes easier to understand the need to use a variety of research methods and locations in order to be able to research the limitations of ESD in the shift to a 'greener and fairer' world.

Chapter 3

Methodology

This chapter will describe the choices concerning the data collection and analysis. In doing so it will describe the places, the cases, the material, the methods, the impressions, and the problems encountered before, during and after fieldwork.

3.1 - Research design

As discussed in chapter two, sustainable development and therefore education for sustainable development are complex concepts, exhibiting elements of "wickedness" (Balint et al. 2011) and 'messiness'. These particular characteristics shaped the way the research design of this thesis was planned and developed. ESD and its relationship with the concept of sustainable development are involved in an intricate web of influences, agendas, purposes, interests from the different actors, and I believe that the use of different research methods and a specific comparison between schools and countries offered a more comprehensive image of the ESD practices developed by primary schools, and provided the research with robust data to answer the key research question – what are the limitations of ESD in the shift to a 'greener and fairer' world – and the respective sub-questions.

The research used a mixed methods design, combining five case studies with two questionnaires in a sequential way. Mixed methods research means "adopting a research strategy employing more than one type of research method" (Brannen n/d:10). According to Bryman (2006), research that involves the integration of quantitative and qualitative research has become increasingly common in recent years. Ellis et al. (2006) stress that using mixed methods is frequently seen as a valuable research strategy, providing a fuller understanding of a particular phenomenon. Greene et al. (1989) proposed five justifications for the use of mixed-methods: (i) triangulation, where the emphasis is placed on seeking corroboration between quantitative and qualitative data; (ii) complementarity, seeking clarification of the results from one method with the results from another; (iii) development, seeking to use the results from one method to inform the other method; (iv) initiation, seeking to recast questions or results from one method with results from the other method; and (v) expansion, which seeks to extend the range of enquiry by using different methods. In this sense, my research used a mixed methods design for completeness, since the use of both qualitative and quantitative methods can provide a more comprehensive account of the researched area; and for explanation as well, since one of the methods (quantitative) was used to help explaining the findings generated by the qualitative research. A design was used that was close to the

exploratory sequential design proposed by Creswell & Clark[26] (2007), which is a two phase mixed methods design where the qualitative data is collected first in order to provide a preliminary and detailed understanding of the phenomenon, being sequential and mainly qualitative, using the questionnaire as an assistant method, to explore further some of the findings and results.

> "The methods are not triangulated or even combined. Each is used in the service of a particular research strategy in order to develop an understanding of the phenomenon and to assist the researcher in presenting a case for a particular answer to a research question" (Blaikie 2000:241)

The use of a mixed methods design, instead of exclusively qualitative or quantitative approaches, is explained by looking at the research aims and at the nature of the research problem. The combinations of questions I am aiming at answering, include looking at the key elements influencing the development of ESD in schools. Researching these elements and the relationship between them, is a highly complex task that could only be achieved using a sophisticated research design, using a multiple methods approach, rather than restricted choices (Johnson & Onwuegbuzie 2004). The nature of the research and the 'messiness' involved in the concept of sustainable development demanded an inclusive and creative form of enquiry, in order to decode and acknowledge that 'messiness'. This is to say that 'sustainability' education policy would not usefully be treated as a 'given' for the aims of this project. With such a complex policy field, the project needed to negotiate some relationship between a range of possible meanings of 'sustainability' policy, in qualitative interviews, and attempt to establish to what extent such meanings were widely held, in questionnaires. With mixed methods it was possible to encircle the messy subject of sustainability in schools rather than asserting an interpretation of it (by using questionnaires alone) or relying on the interpretation of a small number of actors (by using interviews alone).

Mixed methods also improves rigour. The qualitative methods used (observation, interviews) provided detailed information about the problem, however they did not provide enough information about relevant aspects for the research, such as the role of the context in the development of ESD or the frequency with which certain practices and features were found

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[26] Creswell & Clark (2007) propose four main types of research design which combine qualitative and quantitative research: (i) triangulation design which aims to obtain complementary quantitative and qualitative data on the same topic and so the methods have equal weight and are use simultaneously; (ii) embedded design where one data set plays a supportive secondary role in a study primarily on the other data type, and so the weight of each method is different and it can be either sequential or simultaneous; (iii) explanatory design that is a two-phase mixed methods design, where qualitative data helps to explain initial quantitative results, and so is mainly quantitative and sequential; and (iv) exploratory design that is also a two phase mixed methods design, but the qualitative data is collected first in order to provide a deeper understanding of the phenomenon, being sequential and mainly qualitative.

in the schools. On the other hand, the use of a quantitative method, the questionnaire, complemented the information gathered with the case study schools and explored further some of the findings that emerged. It provided additional clarity on the role of ESD in schools and the factors playing a role in its development. It showed, specifically, the regularity of themes and projects developed by the schools concerning ESD, but on its own would not be sufficient to reveal the small details and richness of ESD practices. The use of multiple research methods and the combination of qualitative and quantitative methods of data collection, provided evidence that was therefore more robust. The case studies supplied the research with in-depth information about how schools interacted with ESD, while the questionnaire provided information on the incidence of those practices in a larger number of schools. The two combined allowed the research to provide evidence of the more 'objective' features and practices found in the schools, and of the more 'subjective' influences and interactions of the different elements shaping ESD.

Mixed methods also permits access to different kinds of perspectives. For example, in order to address the key research question, the identification of the limitations of ESD in the shift to a 'greener and fairer' world, I needed to gather information about the features and practices most commonly found in the schools (with the questionnaire), and, more importantly, about the process in which ideas and motivations are translated into ESD, how those features and practices are developed in schools and what schools aim to achieve with it (with the case studies). Motivations, interests, agendas, and practices are complex concepts better captured using some sort of qualitative research, however, the use of a complementary quantitative method, the questionnaire, was essential to expand the breadth of my understanding of the problem (Onwuegbuzie & Leech, 2004).

As with any other research design, the mixed method design has strengths and weaknesses. (Johnson & Onwuegbuzie 2004:21) stress that a mixed method research design "can answer a broader and more complete range of research questions", can provide stronger evidence for a conclusion through convergence and corroboration of findings, and produce more complete knowledge. The principal weakness is that it is more time consuming and demands additional analytical consideration about how to use multiple methods and on how to mix them appropriately. In terms of policy impact there is always some trade-off: the larger the quantitative or qualitative dataset the more easily policy-makers can be persuaded to take the results seriously; and yet with limited resources some sacrifice is required of both qualitative and quantitative size in order to improve rigour in researching complex contexts with necessarily mixed methods.

3.2 - Ethical considerations

Methodologically, there are special concerns when researching children as "appropriate research strategies, in both methodological and ethical senses, need to be thought through very carefully." (Sibley 1991:270).

To respect the individuality of every child as well as enabling them to exercise rights to participate, to give children choices and ensure that their views and understandings are properly captured (Masson 2004), were the main concerns during the collection of data with children and during subsequent analysis. Involving children in the research had the main purpose of having their own views about aspects that are directly related to them taken into account, but it also required that their views and understandings were properly captured, and that no harm arose from their participation in the research and that they were respected as individuals. These principles derived from the ethical guidelines of the Social Research Association, where it states that:

> Social research must strive to protect subjects from undue harm arising as of their participation in research. This requires that subjects' participation should be voluntary and as fully informed as possible and no group should be disadvantaged by routinely being excluded from considerations[27].

Similar to other social research areas, ethical considerations in childhood studies mainly concern three aspects: informed consent, anonymity, and confidentiality (Gallagher 2009). Informed consent may be particularly difficult when doing research with children. In order to deal with this issue I asked for the help of the teachers. I asked the teachers to explain to the children what the research was about and that they had the freedom to not participate in the research and to ask any question about it. Even if informed consent is a challenge, the fact that I spent time in the schools gave me more opportunities to talk to the children and to understand better their ideas and feelings about my presence and my questions. This helped to confirm their consent on a daily basis, "consent in research is a process, not a one-off event, and may require renegotiation over time"[28] (Association of the Social Anthropologists of the UK and the Commonwealth [ASA]).

The principle of anonymity implies that individual participants should not be identifiable in research results and this can be achieved with the omission of names and information that can be used to identify the participants. The principle of confidentiality means that the data that could lead to the identification of respondents should not be shared with other parties without the explicit consent of the participants. All the photos and documents where people or names could have been identified were covered. There is no mention in any part of the

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[27] Retrieved from: www.the-sra.org.uk/ethicl.htm
[28] Retrieved from: http://www.theasa.org/downloads/ASA%20ethics%20guidelines%202011.pdf

thesis of names or places that could be used to identify the schools or the people involved in the research.

The anonymity measures were taken for several reasons. First, because if the schools cannot be identified, there is no risk of exposing any kind of opinions or comments made by the staff or pupils. Second, because it also gave me more freedom to assess the schools' performance and analyse their assumptions and development concerning ESD, without running the risk of being 'unfair' by expressing my views about their own work that could be different from their own views; or by divulging opinions and ideas that could unsettle or expose particular staff members or pupils. And third, because the use of the real names of the schools would not add any particular benefit to the research, since the objective was to research the practices, motivations, problems and achievements related to ESD in schools and not the schools themselves.

The choices I made and/or that were imposed on me, such as the schools that gave me permission to visit them, the time I spent there, the people I talked with, the classes I had the chance to assist, the pupils I talked to, the activities I participated in, have consequences in the way I perceive each school and ESD practices in general. My choices left out some aspects that could have been explored with different options, for example: the effects of ESD in pupils, more than some insights collected in schools, if a long-term observation of pupils behaviours and attitudes inside and outside the school gates and in the transition to the secondary school would have been possible; a better understanding of the impact of a policy such as the 'Sustainable schools' initiative if it had not been discontinued a year after the start of my research; an evaluation of the extent to which ESD is influenced by different interests and agendas, etc.

The "Hawthorne Effect", being commonly used to explain the behavioural change due to an awareness of being observed (Wickstrom & Bendix 2000), with the possibility of leading to an active compliance with the objectives of the researcher, should also be contemplated when doing fieldwork and observation.

Despite the effect that the researcher exerts over the observed, which is unavoidable, I believed that the length of time spent in the schools, the use of multiple methods of data collection, the use of multi-case studies and the testimonies from different people, are factors that have the potential of reducing the bias coming from this external influence. I was introduced in the schools as a student, a doctoral researcher from Sociology who was interested in observing and learning more about the way primary schools were developing ESD. I also presented myself as someone that was interested in their own views on the topic, in their own experiences, in their problems. I was, usually, directed to the people that had more contact with ESD, but I often also had the freedom to observe the routines of schools, talk to some people that was not fully aware of my research interests and observe several

classes and activities that were part of the schools' everyday lives. After the visit to the schools I kept in touch with some members of the staff and ask them for feedback on my analysis and for further development on some aspects that were not clear at the time of the data analysis.

I believe that, despite what was left outside, the influence of my presence in the school, and the consequences of spending only some days in the schools and contacting a few people, the richness of contexts and experiences allowed me to provide a forceful answer to my research questions and gave me opportunities to clarify some under-researched topics in the area. Being mainly an exploratory study it offers the possibility of future research in some of the findings presented.

3.3 - Data collection

The collection of data was done in several stages and used different research methods. In this section, I am going to describe, explain and justify the methods chosen and the units of analysis selected. I will organise the chapter according to the chronological order in which the research was developed. I started with the analysis of the documents produced by the 'Sustainable schools' strategy; followed by the selection of case studies; the contact with the selected schools; the collection of data in the schools; the design and submission of the questionnaires. Subsequently, in the following section I will clarify the way the data was analysed, coded and summarised.

3.3.1 - Stages of data collection

My research involved several different things: the 'Sustainable schools' policy analysis; five English primary schools studied in detail; and two questionnaires sent to the selected primary schools in the public sector, both in England and in Portugal. Given the complexity of the task, the data collection was done in stages.

The first stage was the analysis of the documents produced by the 'Sustainable schools' strategy[29]. With this analysis, I looked at the content and the purpose of the documents. This task was not an easy one. The strategy, a milestone for ESD in England sponsored by the Labour Party between 2006 and 2010, was discontinued by the Coalition Government and was relegated to an NGO. This change had some important consequences for my research. Firstly because all the documents and reports concerning the strategy were archived and the online access was disabled for several months; secondly because when I started my research

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[29] A summary of the documents analysed will presented on chapter four. These documents include aspects from an introduction to the 'Sustainable schools' strategy to details about how to develop the eight doorways or how to assess the progress of schools.

(January 2010) the strategy was presented, nationally and internationally, as a nationwide effort to transform the schools into sustainable places, a novelty due to the scale, ambition and extensiveness of the project; and thirdly because the strategy placed ESD at the centre of attention, setting specific targets to schools, which my research wanted to look at. With the abandonment of the strategy, not only did the measurement of outcomes became more difficult and less relevant, but, and more importantly, the information about how well schools were doing concerning ESD, information previously gathered by DCSF, disappeared, the access to schools became harder and ESD's popularity decreased. These factors influenced the way data was collected and analysed and provided a unique opportunity to observe the effects of a political decision concerning an ESD policy.

The second stage was the selection of the case study schools. A case study can be defined as an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident (Yin 2009:18). The use of multiple case studies as opposed to a single case, makes research findings more robust (Yin 2009).

The use of multiple-case studies has strengths and weaknesses, as with any other research design. The evidence from multiple cases is often seen as being more compelling and stronger (Herriott & Firestone 1983), since it allows the possibility of both comparisons between cases, and direct replication. Case studies also facilitate a holistic analysis (Creswell & Clark 2007). In the case of my research, each individual case (school) deepened and improved my knowledge of the other cases. Although my findings are not generalizable in quantitative terms, my multiple cases did strengthen my findings in qualitative terms. Multiple case studies provide "analytical generalisations", in the sense that each case's conclusion is then considered to be the information needing replication by other cases (Yin 2009:78).

The initial plan was to research six to eight English state-funded primary schools: three/four schools that were considered by the 'Sustainable school' strategy as an example of good practices and three/four other schools in the same area and with similar characteristics (number of pupils, percentage of pupils eligible for free school meals, etc.), to determine whether in fact there were significant differences between them in relation to ESD. Soon, this plan proved unsuitable, mostly because it was relatively easy to find schools committed to the strategy and happy to collaborate with my research, but it was extremely difficult to find available 'pair' schools, that is, available schools with similar characteristics, in the same area and where sustainability was not a priority, available to be part of the research.

Given the changes in the governmental ESD policies and after some time trying to find 'pair' schools without significant success, my research adopted a different strategy.[30]

The selection of the cases is crucial (Yin 2009:54). Since the time and the access to cases are limited, one of the criteria to select the cases should be to maximize what we can learn (Stake 1995:4). As stressed by Yin (2009:91), the screening of the candidate cases may involve the collection of information about each candidate, having a defined set of criteria "whereby candidates will be deemed qualified to serve as cases".

Having decided that the research would investigate primary schools[31], there was the need to select the schools to investigate. My aim was to research schools with one thing in common: an interest and successful work on ESD, and as diverse as possible in everything else such as geographical location, number of pupils, size, etc. Hence, I could analyse the influence all these factors have in the development or blocking of ESD in the studied schools.

The first activity was to identify the 'top' schools concerning ESD according to the DCSF. A list of the different schools and the activities developed by these schools, in terms of ESD, were available in the 'Sustainable schools' website and so accessing this list was the first step. This list presented the activities developed by the different schools according to the eight doorways of the 'Sustainable schools' strategy. Using this list, I started by identifying those schools that were developing some work on at least four of the doorways as described by the strategy, and I did some research about these schools as well. I checked their website and looked for information about their work concerning ESD[32].

After an analysis of the different schools I identified seven schools that were potential case studies for my research. The schools were selected mainly due of their past and current work on ESD. This would allow me to have a clearer picture about sustainability practices from its implementation until a more mature stage, and all the constraints and benefits encountered on the way. These particular schools were located in different geographical and social contexts, and this gave me the opportunity to assess the influence of the context in their practices. I contacted the seven schools, but only three of them gave me permission to carry out the research there. These three schools are Peace, Green and Outdoor[33] schools.

The second activity in the selection of case studies encompassed the searching and contacting of comparable 'pair' schools in the same area where the three 'sustainable schools' were located, so a comparison could be established. After some time I realised that

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[30] However, I did find a fifth school which, was not used as a 'pair' school, but had no particular ESD angle beyond multiculturalism.

[31] As explained in the introduction, the research focused on primary schools due to a personal interest reinforced by the fact that ESD, is believed to be more developed in primary education than in secondary or higher education (Gayford 2009; Schmidt at al. 2010).

[32] I looked at, for example, location, size, ESD activities, people involved, awards and grants received, and the ethos of the school concerning ESD.

[33] As stressed in the introduction of the thesis, the names assigned to the schools are pseudonyms based on their most visible/relevant characteristics according to my analysis.

this idea would not work in practice, so I started to look at other schools with specific characteristics in different parts of England, in order to contrast the information gathered.

The first three schools (Peace, Green and Outdoor Schools) were selected owing to their internal commitment towards ESD and their external recognition visible in the awards, grants and news about their work. These three case study schools were used to "replicate the results" (Yin 2009:54), given the importance of ESD in these three schools. These three schools had been developing ESD activities for a long time and have a history related to this topic. These similar characteristics provided the ideal environment to research the objectives, ESD practices and expected outcomes and to understand the role of the context in the development or inhibition of ESD.

The last two schools (Energy and Multicultural Schools) were selected for different reasons, and should be seen as 'auxiliary' cases. Energy school was selected because it is located in the same area as Outdoor School and where there is a strong interest in sustainability and ESD but with a deficit in progress in the building and in the curriculum of the school. The purpose was to use this school to observe the difficulties in implementing ESD, since the school was in the first stages of the process, according to the guidelines provided by the 'Sustainable schools' strategy. The idea was to research the main problems in implementing sustainability, how the choices of implementation were made, what were the priorities in this process and how those priorities were decided and by whom. Multicultural School was selected because the former headteacher of Green School had moved to this school while I was doing fieldwork and the school was itself a very interesting case: it was located in a big city; ESD had never been a priority before the arriving of the new headteacher; it was large, multicultural and with a high percentage of pupils eligible for free school meals, which could influence the way ESD was planned and delivered. This school was also used to see how sustainable development was implemented and promoted in its initial stages, with important differences from the Energy School (e.g. location, size, networks, etc.). These two schools were then used to "contrast results" (Yin 2009:54) gathered previously with the first three case studies and explore further the importance of certain factors involving the development of ESD. Therefore, this diversity of characteristics (the geographical location, the size of the schools, the number of pupils, the academic results, etc.) provided a rich environment to analyse the factors that influence the development of ESD in primary schools in the public sector.

The next step comprised the visit to the schools. Gaining access to the schools selected was a crucial point. My participation in conferences and workshops related directly to the 'Sustainable schools' strategy, such as the *National Sustainable Schools Conference 2010,* held in London 18th June 2010 or the *Eco-School Training Day,* held in Manchester 27th May 2010, was very important because I could make direct contact with teachers, headteachers,

NGOs and policy makers involved in the strategy. I also contacted the DCSF, the SEEd and the Head of Centre, Adviser Education for Sustainable Development, in order to have some support and advice in the access to schools.

The research also included a questionnaire (see appendix 5). Between the visit to the first three schools and the last two I designed the questionnaire, piloted it among different primary schools (see below) and made it available online (using the Bristol survey programme). I then sent an email request to the headteachers of a sample of schools. The questionnaire comprised mostly closed-ended questions (e.g. yes/no) and some open-ended ones, when further explanation was needed. This was the second phase of the research, the collection of data about the stage of development and understanding of ESD in primary schools located in both England and in Portugal.

As stressed before, the questionnaire was used essentially to develop further the understanding of the results gathered with the case studies, providing stronger evidence of the role of the different factors and the context in the development of ESD in primary schools. The questionnaire should be understood as an assistant method, which provided further insights that helped in the understanding of this complex research phenomenon.

The collection of data used a standardised process, however it was adapted to the different schools. The research intended to link together practices with policies, agendas, perceptions, values, ideas, and concepts of ESD, in order to understand the factors influencing the development of ESD in primary schools and the limitations of this type of education in the shift to a 'greener and fairer' world.

I used several research methods to collect information: direct observation, document analysis, interviews, and a questionnaire. I will now explain in more detail how these different methods were designed and applied in the schools.

3.3.2 – Piloting the research methods

Piloting has a role of ensuring that the research instruments function well, providing a greater sense of confidence (Bryman 2001). Piloting is an important tool in order to "avoid methodological surprises", increasing the reliability and the validity of the research, testing the adequacy of research instruments and gaining general feedback on the clarity and appropriateness of the methods (Gudmundsdottir & Brock-Utne 2010:360). All the methods used in this research were systematically checked and trialled. I designed and piloted four interview guidelines: a) for the headteacher of each school; b) for the different teachers; c) for parents; d) for the pupils; and the questionnaire.

The headteachers' interview guideline was piloted with two different people: a staff member of the University of Edinburgh, which is a former headteacher of primary schools, and a

person from the Children's Commissioner. The teachers' interview was piloted with two teachers from a primary school, whom I had got to know from my attendance at the 'Sustainable schools' annual conference. For the piloting of the parents' interview, I contacted some colleagues and friends who had children in primary schools and gathered their opinions about the questions and the clarity of the query. The pictures used in the group interviews with the pupil were produced by a NGO that works with children in schools and publishes regularly documents about ESD and Environmental Education. To select the pictures and the questions, I used the eight doorways of the 'Sustainable schools' strategy, trying to cover different aspects of ESD (e.g. healthy/unhealthy food, transportation, renewable energy, recycling, waste, inclusion, etc.), and had some advice from this organisation and my previous informants about the adequacy and clarity of the pictures selected, as well as on the questions I was planning on asking the pupils.

The questionnaire was piloted in these schools in England: two of the case study schools (Peace and Outdoor Schools) and three other schools I contacted during my attendance at the 'Sustainable Schools' annual conference. These contacts gave me feedback about the precision of the questions and the organisation and length of the questionnaire. Consequently, their contribution to my research was extremely valuable to the achievement of my goals. The Portuguese questionnaire was also piloted in five different Portuguese schools, schools that I had some previous contact with. The design of the questionnaire was a long and difficult process. The questionnaire underwent several modifications before it was made available to the schools, and so the information gathered with the case studies and the piloting activity were vital contributions to the final version of the questionnaire.

As stressed by Yin (2009), the piloting process can cover both substantive and methodological issues and in general, convenience, access, and geographical proximity can be the main criteria for selecting a pilot case. The trialling activity produced advice on the clarity, the order of the questions, and the length of the interviews and the questionnaire. After this piloting exercise, the number of questions diminished, some clarifications were added, the order of the questions was changed to improve the fluidity, and some questions were erased or altered.

3.3.3 - Methods of data collection

3.3.3.1- Qualitative data collection

After sending a letter asking for permission to do research in the schools I visited the schools and met with the headteachers or the teachers coordinating ESD in order to present my research and agree about the best period to spend some time in the school. As my visit to the different schools depended on the availability and timetable of schools, the research had to

adapt to it. Once in the schools I used different methods of data collection: direct observation, document analysis, individual and group interviews.

a) Direct observation

The ultimate goal of direct observation is to 'capture' the point of view of the observed, the way they construct their reality and interpret their experiences Burgess (1993). It seems more appropriate to use this method in order to "explore what people do, as well as what they say" (Gallagher 2009:98). I also believe that the method of direct observation was less disruptive and more inclusive. As Costa (1986:99) argues "observation is the art of getting answers without asking questions". Direct observations, as argued by Yin (2009:102) cover events in real time and provide the context of the case study.

Following this reasoning, and trying not to interfere too much, I spent time in the classrooms during the lessons, in the playground, lunch time, and during/after school clubs. However, the children were curious about me and my presence was noticed and questioned. After the first initial days the children started to notice me less and less, and after some time I was seen as another teacher assistant or just as another adult in the school.

My role in the schools and the kind of observer I was, changed according to the context, activities and people I was with. When I was in the classroom, I was merely observing what the class was about and how the children responded to the teacher's questions and suggestions; in the playground, although I tried not to interfere in the activities, some pupils that knew me from the classroom wanted to include me in the games they were playing and others wanted me to help them with some kind of problem (e.g. a ball that went to the other side of the fence, a girl that was not being nice to them, a boy that fell and needed some assistance, etc.). During lunch time, I was usually with the teachers in the staff room and I had the chance, sometimes, to hear their opinions about my research interests; at other times the conversation was about random topics. During the activities at the clubs, I was sometimes a participant helping baking scones, feeding the chickens or getting rid of the weeds in the garden.

I used a field diary to register information about the space, the agents and dialogues, but also about thoughts, ideas and problems that I had during the observation (see Appendix 3). This field diary was designed using the suggestions presented by Burgess (1993) and so at the same time I described the people and their interactions, the space and its characteristics, the events and its features, I also tried to reflect on the meanings and questions arising from that observation and what I needed to look at in more detail or if something else needed clarification or confirmation. As stressed by Burgess (1993:92) note-taking is a personal activity that depends upon the research context, the objectives and the relationships with informants. However, there are a series of basic principles that should be followed: to have a

regular time and place for writing field notes; all field notes should contain the date, time, location and details of the main informants; and the researcher needs to consider what is to be recorded and what is to be omitted from field notes. It involves the simultaneous collection and analysis of data, so it is important to include brief indicators about topics that can be developed, themes that can be explored and details of analysis.

The field diary was used during the lessons to describe the content, the activities, the children's reactions, the behaviour, the interests, the way the lesson was conducted and whether ESD was addressed and how that was done. During my time in the schools I attended different lessons, from English to Music. I also attended lessons on Personal Health and Social Education (PHSE) where, in some schools (e.g. Peace School), topics related to sustainable development were most frequently discussed. The field diary was also used during breaks and lunch times. During these periods my focus was on the way the outside space was used, the interactions between children, and other details concerning my topic, such as: whether there was garbage on the floor, whether pupils and staff used the recycling bins, what type of food was served in the canteen, etc.

The connections I established in schools were not too deep or prolonged since I only spent some days there, however, I did stay full time in the schools – from 8am until 6pm - and had the chance to participate in their daily routines, talk to different people, and to some extent experience the way the schools were organised and how ESD was managed in different contexts.

The time I spent in the different schools allowed me to talk with the different actors, but also to see some of their daily activities, to capture some of their ideas, and to understand better the current projects, tensions, problems and benefits between ESD and schools. In an ideal situation, I would have chosen to spend more time in the schools but that was not possible. The time I spent in each school was hard to negotiate. Schools were reluctant to accept a long stay there given their tight schedules and lack of available staff. Therefore, the time I spent in each school was relatively short, but it was very rich in experiences and interactions.

The use of observation can also be problematic mainly because of the close relationship developed between the researcher and the observed. The bias, which may arise from spending more time with people I know already, are more available or I sympathise with, may be more difficult to control. Additionally, some children and adults may not feel comfortable with the observation. That is why is important to think about alternative methods and ways of dealing with bias in the interpretation of the data. At the same time, the researcher when observing is also being observed and when participating in the daily life of the participants his/her vision of the reality is being influenced.

> The researcher is inside to understand, but at the same time has to be outside to rationalise the experience and build a legitimate scientific object. The researcher has to think about herself at the same time that she is trying to understand the other[34]. (Caria 2002:12)

In a school, this is particularly relevant. It was very easy to get distracted by all the activities around me or to spend a lot of time just explaining to different people what I wanted to do in the school. The interactions with pupils and staff were a large part of my time in the school and those interactions shaped, to a certain extent, the way I interpreted my experience, the data I gathered and the access I got to different aspects of the school life. Other methods, such as document analysis and interviews, were also employed in order to complement and clarify some of the data I got with this initial observation.

b) Document analysis

My observations were accompanied by other methods. I undertook a document analysis of schools' documents, schools' websites, worksheets, and pupils' work in order to see how lessons were prepared, and how schools organised ESD activities throughout the academic year.

In order to reduce the "biased selectivity" (Yin 2009:102) that can derive from the incompleteness of the documents analysed, I tried to do a systematic analysis of different type of documents. I checked the website of the five case study schools and looked for information about the characteristics of the schools and about ESD. I also checked several documents from the schools: the schools' development plans, where I looked at the plans schools had, concerning ESD, for the academic year[35]; analysed the policies of the different subjects (History, Geography, Literacy, etc.) and searched for ESD-related content; checked schools' newsletters and different documents where ESD activities were proposed or advertised; and I also analysed some of the pupils' work[36]. Finally, I also examined the schools' reports published by Ofsted and looked at the way ESD in these schools were described and analysed by Ofsted.

c) Individual and group interviews

As stressed by Blaikie (2000:254), contemporary social science is more likely "to use some form of unstructured or semi-structured interviewing to collect qualitative data", where behaviour and social interaction will be reported rather than observed. In my research, I used

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[34] Translated by me from the Portuguese original source.

[35] For example in the development plan of Peace School, for 2011, one of the actions was this one: "Member of staff to train as a 'Forest School' practitioner. Knowledge and skills acquired to be used to enhance our 'Outdoor Curriculum'".

[36] Some examples of the type of documents analysed can be found in Appendix 2.

the interviews as a way of complementing the information gathered with the time spent in the schools and to clarify some of the documents I read or the impressions I got. Yin (2009:102) argues that interviews can prove insightful about causal inferences and explanations, being valuable instruments to ask respondents about facts as well as their opinions about events.

I designed and piloted four interview guidelines (see Appendix 4 for the different interview guidelines). The first one was designed for the headteacher of each school and this interview had specific aims, namely: to contextualise the case study (e.g. where the school was located, number of staff, number of pupils, etc.); to see what role the headteacher had in the development of ESD in the school and what did ESD meant to him/her; to talk about the importance of ESD in the school, main projects, examples of activities, people involved, assessment; and finally to evaluate if the 'Sustainable schools' initiative was important to the school and in what sense.

The second interview was designed for the teachers and aimed to provide additional information on specific activities developed in the different year groups, but also on the interviewees' views of the school and the importance of ESD (e.g. whether they supported it or not, how the implementation of projects was carried out, how they coordinate ESD with other curricular activities, whether leadership support was important, and whether they thought children benefited from it and why).

The teachers interviewed in each school were selected using different criteria: a) those in charge of ESD due to a privileged position and knowledge about the topic; b) teachers from the years groups I was interested in (Years group 5 and 6) due to their familiarity about the work develop with the pupils; c) other teachers or teaching assistants suggested by the headteacher or the teachers I interviewed. Sometimes I also interviewed other people (some of the other members of the staff, for example the site manager or the school's chef) since they could give me some information about other things more related to the management of the schools. These last interviews took the form of conversations, rather than structured interviews.

The third interview was designed for the parents/carers and intended to find out their relationship with the school and if sustainability was an important aspect for them and for their sons/daughters. Finally, the fourth interview was designed to have first-hand information from the pupils. This interview was designed as a group interview with the children and included questions and images (see Appendix 2, photo 20 onwards). Traditional social science research methods have been denounced as problematic because they rarely involve children in the research process (Young & Barrett 2000:142). In response, attempts have been made to make research techniques more child-friendly and participatory. Recently

a diverse range of child-centred methods have been developed across the social sciences, covering oral, written and visual activities.

In the first part I handed, arbitrarily, three pictures to each pupil and asked them to talk about them, to say anything they wanted about them. After that, there was a short discussion about the school, their opinion about the school, what they liked/disliked about it, their familiarity with topics such as saving energy, recycling, natural resources, or inclusion. The objective was to assess their understanding of the topics and their opinion about the school's work and activities concerning ESD.

This approach was followed in all the schools I visited, but adapted to the context, time and availability of staff, and improved with things I learned from my visit to previous schools.

3.3.3.2 - Case study schools

The five case study schools are all public, primary, English schools. They have in common an interest in ESD and vary in many other aspects, such as location, size and age. The next table provides a summary with the key characteristics of the five studied schools.

Figure 12 - Characterisation of the five case study primary schools

	1 - Peace School	2 - Green School	3 - Outdoor School	4 - Energy School	5-Multicultural School
Location	Greater Manchester	Nottinghamshire	Somerset	Dorset	Greater London
Area	Suburban	Urban	Rural	Rural	Inner-city
Year of construction	1938	2001	1945	1992	2004
Number of pupils[37]	350	470	120	420	550
Annual family income	Medium (£20,000-£30,000)	Low (Up to £20,000)	Medium (£20,000-£30,000)	High (Over £30,000)	Very Low (Up to £20,000)
Free school meals (%)	6%	40%	15%	7%	48%

The five schools I visited vary greatly in terms of location, number of pupils, typical family income and year of construction, giving the research a good opportunity to compare sustainability practices in different contexts. Peace School is situated in a suburban area, in the North West of England. The socio-economic background of the pupils is considered to be medium/high and the percentage of pupils eligible for free school meals is well below average, 6%[38]. Green School is situated in an urban area, in the East Midlands region of

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[37] Approximate for anonymity reasons.
[38] Being the average 18% in 2011 (Department of Education 2012).

England. The school is located in a residential area and the levels of deprivation and child poverty are high, with a percentage of pupils eligible for free school meals well above average, 42%. Outdoor and Energy Schools are both located in rural areas, in the South West of England, but differ greatly in all the other characteristics. Outdoor School is a small school. The typical family income of pupils is medium and the percentage of pupils eligible for free school meals is below average, 15%. Energy School, on the other hand, is larger than average[39], an over-subscribed school with 40% of pupils from outside the village. It is situated in a large village in Dorset. The typical family income of pupils is high and the percentage of pupils eligible for free school meals is well below average, 7%. Finally, Multicultural School, the biggest of the five schools, is also the only one situated inner-city, in South London. It is located in one of the most deprived areas of London and in the bottom 5% of all the national areas in terms of deprivation. The percentage of pupils eligible for free school meals is significantly high (48%).

1) Peace School

The first school I visited was Peace School. I travelled from Edinburgh to Manchester by train and from there to the town where the school is located, staying in a Bed & Breakfast close to the school and recommended by the teacher with whom I spoke during my presentation visit. My observation of the school life started from here. By walking every morning from the Bed & Breakfast to the school and back, I could see a large amount of pupils walking to the school in pairs, alone, with their parents, or in groups. This gave me the impression that a large number of children walk every morning.

At Peace School, I interviewed the headteacher first. I also interviewed four teachers: the PHSE teacher and ESD coordinator, the Years 3/4 and Art teacher, the Year 4 teacher who is also the Physical Education teacher and the Outdoor Education coordinator, and the Years 5/6 and Music teacher. The ESD coordinator interview was conducted in my last day in the school. It was helpful to clarify the doubts I had from my observations and previous interviews.

Interviews with the teachers were conducted whenever possible, according to their availability. The interviews were held in different places (in the grounds during breaks, in the classroom after the classes ended, next to the swimming pool during a swimming lesson) and the duration varied from ten to thirty or forty minutes, according to the availability of the staff and their interest/knowledge about the topic.

The children were asked if they would like to participate in the study, after the task was explained to them. Everyone in the class raised the hand when the teacher asked the question

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[39] Between 180 and 220 pupils (2010) according to a BBC article (Coughlan 2012).

about participating (a way to escape from the lesson I guess, or as proposed by Gayford [2009:3] "pupils appreciate events and activities that interrupt the routine of the school"). I told the teachers to select random children with no particular criteria. I had two group interviews with six pupils from Years 5 and 6 in each of the groups and each section lasted around thirty minutes. In this school, I also had some conversations with pupils from different clubs (e.g. Energy or Recycling clubs) in order to understand their interest in the related topic and their activities in each of the clubs.

Some short interviews (around ten minutes each) were also conducted with some parents (four mothers) during the mornings, after they left the children in the school. I approached the mothers with one of the teachers and asked them if they would like to participate in my research.

2) Green School

The second school I visited was Green School. I travelled from Edinburgh to Nottinghamshire by train and then I walked from the train station to the school, which is located between a residential area and an industrial site, a bit far away from the town. I stayed in a Bed & Breakfast close to the centre and walked to the school and back to the Bed & Breakfast every day.

The visit to the school was constrained by different reasons. My first contact was the headteacher, and although he was very welcoming he was also very busy, so it was difficult to arrange the time to see him and plan my time in the school. Additionally, I visited the school during the Standard Assessment Tests (SATs) week, so the older children were busy with the exams. This week was not my choice, but it was rather the only one granted to me by the headteacher.

Because of that, my time in the school was spent mainly with the 'active learners', a group of children with special needs, who use the grounds and ESD as a way of learning the different subjects. I participated in activities such as the visit to a farm, the weed removals, the feeding of the pigs and chickens that live on the school grounds, the writing and drawing about these activities, and a cooking lesson – how to prepare rhubarb jam. I looked at the documents of the school and asked permission to take photos, making sure that the children were not identifiable.

I interviewed the headteacher on my first day in the school and the deputy headteacher. I also interviewed three teachers during the week: a teacher assistant responsible for the 'active learners' group and coordinator of the school for farm and horticulture activities, a senior teacher responsible for Year 5, and a reception teacher responsible for the outdoor education. In addition, I interviewed two other members of the staff: the former budget manager,

responsible for the 'Eco-schools' programme, and the school catering manager. These two last interviews provided information about specific aspects of ESD. I could have some insight about how funds were allocated to ESD activities and how the school meals were selected, prepared and delivered.

I also organised three group interviews with six children in each group, from Years 5 and 6. The selection was again random and the teacher asked about their participation and explained what was about. In one of the groups, after they realised I was from Portugal, the favourite discussion topic was Cristiano Ronaldo, the football player, and it took me some time to bring ESD back to the conversation. These kind of unexpected outcomes were common during field work, especially when interacting with the pupils.

3) Outdoor School

The third school I visited was the Outdoor School. I travelled by plane from Edinburgh to Bristol and from there I took two different buses to the village where the school is located. I stayed in a Bed & Breakfast inside the village and within a short walking distance from the school. The village was divided by a busy road and the pavements were very narrow, scarce and limited to the main sites of the village (the church, the Bed & Breakfast, the post office and the school), which could be problematic for the children to walk alone to the school. Also, the village was very small and there was only one bus in the morning and one in the afternoon, which connected with the nearest town, making the accesses to the school by public transport difficult.

I spent most of time with Year 6 and the teacher responsible for ESD. I visited a local farm as part of the regular visits the school promotes, and participated in different activities: a cooking lesson where we baked scones, the feeding of the chickens and the observation of a forest school session. In addition, I also interviewed the headteacher, the Years 5 and 6 teacher which is also the ESD coordinator, a former teacher that was responsible for the introduction in the school of Environmental Education and ESD, and the forest schools facilitator teacher. With the children, I organised two group interviews, with six children each from Years 5 and 6.

4) Energy School

The fourth school I visited was Energy School. I travelled from Edinburgh to London by train and from London I took another train to a town near the school. I stayed in a hotel there and took a local bus every morning to go to the school and back, since there was no accommodation near the school. Because of that, I could not observe the way children went to the school.

I spent some time with the site manager of the school learning about energy saving measures and other projects concerning the use of resources. I interviewed the headteacher, the deputy head, the Year 6 teacher, which is also responsible for the eco-team, and the site manager. I also organised a group interview with eight children and they explained to me the work they have been doing in the eco-team.

Since this school was in the initial stage of integrating ESD in the school grounds and curriculum, I focused more on talking to people that was involved in this process.

5) Multicultural School

Finally, the last school I visited was the Multicultural School. Due to time constraints, my own and the headteacher, I could only spend a day in the school. As explained before, the permission to visit the schools was one of the hardest part in the process and so at the time I visited this last school I was already involved in data analysis and writing up chapters outlines, as it was a year after my visit to the first school. This, together with the lack of availability of the headteacher, limited my time in the school. Because the headteacher knew me already from my visit to his previous school (Green School) it was not difficult to have permission to visit this school, but it was very hard to find a suitable date and so at the end, I had to accept the offer of one day visit, since I could not wait longer for an eventual better offer.

I travelled from Edinburgh by train to London and stayed in a Bed & Breakfast in the city. I then took the underground to the school and back. The time I spent in the school was used to interview the headteacher and the site manager about the projects they have for the school, concerning the building, the grounds and the curriculum. I could also attend a lesson from Year 3 where the pupils were involved in a project about the rainforest. After that I could talk with some of the pupils about the project and in the middle of the talk they asked me if my name was like the pizza 'Margherita', I said, regrettably, that yes, it was similar, so afterwards I started to be known as the 'pizza lady', and the talk escaped from the rainforest to pizzas.

3.3.3.3 - Quantitative data collection

The use of the questionnaire had the main purpose of developing further the understanding of the results gathered with the case studies, and so the questionnaire should be understood as a complementary method used to confirm/contrast the findings from the case studies. The research included a questionnaire to selected primary state-funded schools in England and in Portugal. Several reasons influenced the way the questionnaire was designed and applied:

(a) The purpose behind the English questionnaire was to explore further some findings from the case studies;

(b) The questionnaire data was used to confirm/contrast some of the findings from the case studies providing a more robust image of ESD practices and its context;

(c) The nature of the study, which is exploratory and with a greater emphasis on the qualitative data and the case studies;

(d) The data gathered with the Portuguese questionnaire was used as a way of deepening the understanding of the role of the context in the development of ESD.

Despite not intending to generalise the results from the questionnaire, some of the rules of statistical sampling were adopted, namely the selection of the schools, which was done using a single-stage probability sampling or a "simple random sampling" (Fowler 2002:14; De Vaus 2002:71), by identifying every public state-funded primary school of both countries (England and Portugal) and numbering them. The selection of numbers was done randomly, determining the population elements to be selected, with every school having an equal chance to be chosen.

There are numerous formulae to calculate the sample size, however the calculation should involve other factors behind the size of the population. As stressed by Blaikie (2000:208) three important factors must be considered in deciding the size of a probability sample: the degree of accuracy that is required; how much variation there is in the population on the key characteristics being studied; and the levels of measurement being used. In determining sample sizes, De Vaus (2002:80-1) suggests, from a quantitative point of view, to decide in advance both the level of generalizability one is seeking and "how much error we are prepared to tolerate". Jansen (2010:23) recommends that sampling in "qualitative surveys" must be designed on the level of "saturation" we are looking for, that is, on the coverage of enough "diversity that is judged relevant" in our study and so suggest that even "a small sample may provide enough saturation". Following a qualitative logic as well, Mason (1996:93) suggests that the sampling strategy should be guided by the purpose of the research and by the type of explanation it is intended to construct. "Theoretical sampling" or "purposive sample" contrasts with statistical sampling, since the objective it is not generalise the findings, but to explore further a body of theories or ideas.

In sum, the questionnaire was designed not with the intention of generalising the results to the rest of the schools' population, but to give a stronger insight about the national panorama of ESD, both in England and in Portugal, and to clarify and develop further aspects and themes that appeared relevant with the case studies. In a sense, the questionnaire would

equate with Jansen's "pre-structured survey" (2010), which the author defines as a survey where:

> Some main topics, dimension and categories are defined beforehand (…) and the aim of descriptive analysis is only to see which of the predefined characteristics exist empirically in the population under study (Jansen 2010:9).

The fact that there is no intention to generalise from the results in quantitative terms means that, the number of schools selected and the number of schools that answered the questionnaire are presented only as indicative and not as determinative of the validity of the results.

According to official records, there are 4330 state-funded primary schools in Portugal (Instituto Nacional de Estatistica - INE 2010[40]) and 7506 state-funded community primary schools in England[41] (Department for Education 2011[42]). I selected 700 schools in England and 400 in Portugal, so around 10% of total schools. The rate of response was 12% among the English schools, with 83 schools answering the questionnaire, and 14% among the Portuguese schools, with 54 submitted questionnaires. Even with two reminders sent and a prize draw the response rate was low, but in conformity with the average response to online surveys.

Considering the characterisation of the schools that answered the questionnaire, one can see that in the English case the vast majority is from rural (39%) or suburban areas (35%)[43]. Almost half of the schools were built between 1950 and 2000 (43%). However, a significant number of schools were built in the 19th Century (23%) or in the first half of the 20th Century. Almost 70% of the schools are large primary schools with over 200 pupils enrolled, and from those 36% have more than 300 pupils. Concerning the socioeconomic background of the students, almost 50% of the schools estimate that the typical family income of pupils does not exceed £20,000, and 60% have between 6% and 25% of pupils entitled to free school meals, as shown in the graphics below.

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[40] Retrieved from: http://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_base_dados

[41] Excluding the Junior and Infant schools, academies, foundation schools, grammar schools, special schools and all the other type of schools which are not state-funded community primary English schools.

[42] Retrieved from: http://www.education.gov.uk/schools/leadership/typesofschools/a0014612/edubase

[43] According to a report by The Commission for Rural Communities (n/d), approximately 2.2 million children live in rural areas, representing 36% of all children in England.

Figure 13 - Characterisation of the respondents English schools of the questionnaire (83 Schools)[44]

Geographical Location:
- Rural: 39%
- Suburban: 35%
- Urban: 12%
- Inner City: 14%

Year of construction:
- 1840-1900: 23%
- 1901-1950: 25%
- 1951-2000: 43%
- 2001-2012: 9%

Number of pupils:
- Up to 100: 9%
- 101-200: 22%
- 201-300: 33%
- Over 300: 36%

Percentage of pupils entitled to free school meals:
- Up to 5%: 16%
- Between 6% & 15%: 33%
- Between 16% & 25%: 27%
- Over 26%: 24%
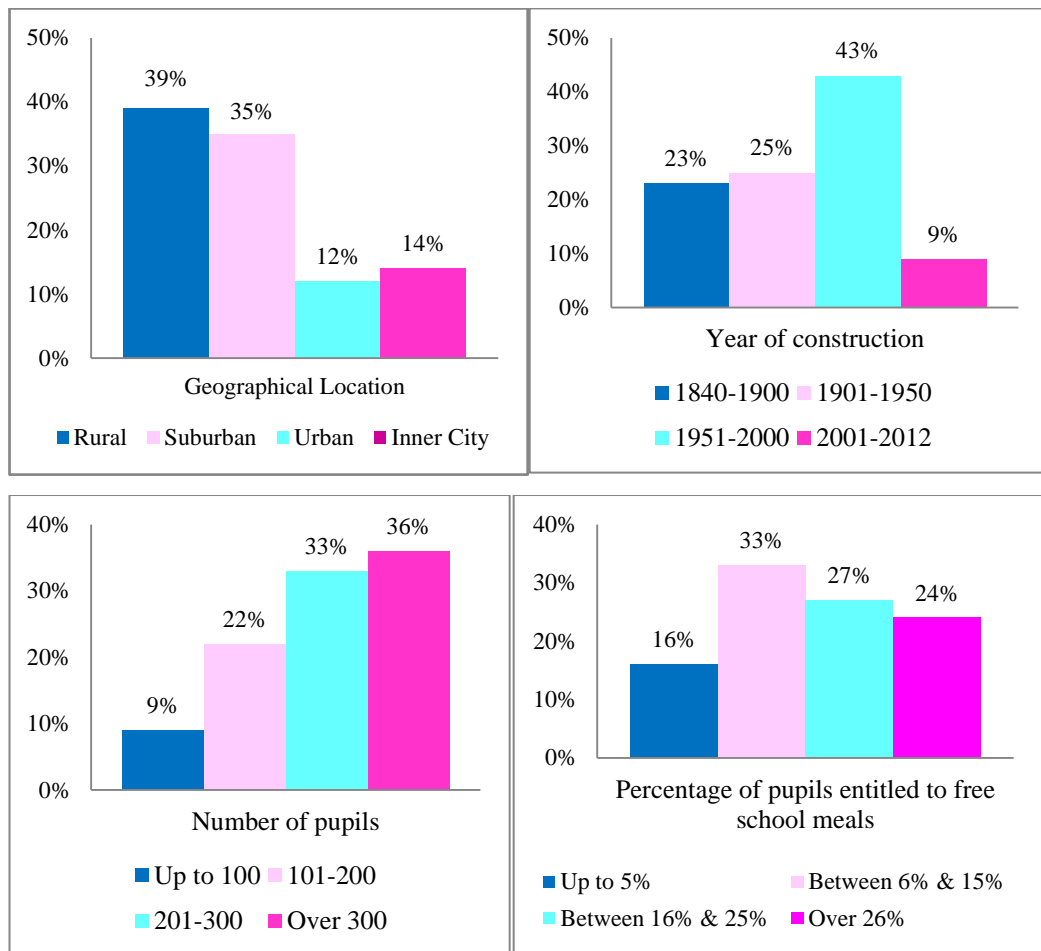
About the Portuguese case, the questionnaire was translated from the English questionnaire, applied previously to the selected English primary schools, and adapted to the Portuguese context (see Appendix 5 – Portuguese version). As mentioned before, it was piloted in five different primary Portuguese schools in order to check the intelligibility of the questions and the adequacy to the Portuguese reality. After this trial, the questionnaire was modified to take into consideration the suggestions of the different schools and was sent to the randomly-selected state-funded primary schools. A total of 54 (out of 400) answered the online questionnaire, and although there is always the risk of having the most committed schools responding and skewing the data, I also got schools answering and stating that ESD was not important to them and that they were not really developing anything in particular concerning this topic. And so, I can assume that this sample, although small, represents a diverse

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[44] The graphics were designed to illustrate the common features and the main differences between the schools that answered the questionnaire, and that is why the numbers of each category were transformed into percentages, to facilitate this reading. The vertical axis demonstrate the percentage of schools in each of the categories while the horizontal axis the different possible answers for each question – mostly questions respondents could answer by choosing only one possible answer.

population, and even if my purpose is not to generalise the results, my findings provide important insights about the way the different contextual elements play a role in shaping ESD in schools. Since my research was sponsored by the Portuguese government through the FCT (Foundation for Science and Technology), I was required to include relevant data about/for Portugal and so this questionnaire was developed with that particular aim, but it also provided a valuable opportunity to look at the way the context and available resources shape ESD in schools.

Looking at the characteristics of the Portuguese schools that answered the questionnaire, one can see that the majority of the responding schools (54%) are from a rural area and were built between 1950 and 2000 (49%); are large schools with 39% of schools having more than 300 pupils and 36% between 201 and 300; and with a typical family income of the pupils up to £15,000[45] (95%), as shown in the figures below[46].

Figure 14 - Characterisation of the respondents Portuguese schools of the questionnaire (54 Schools)

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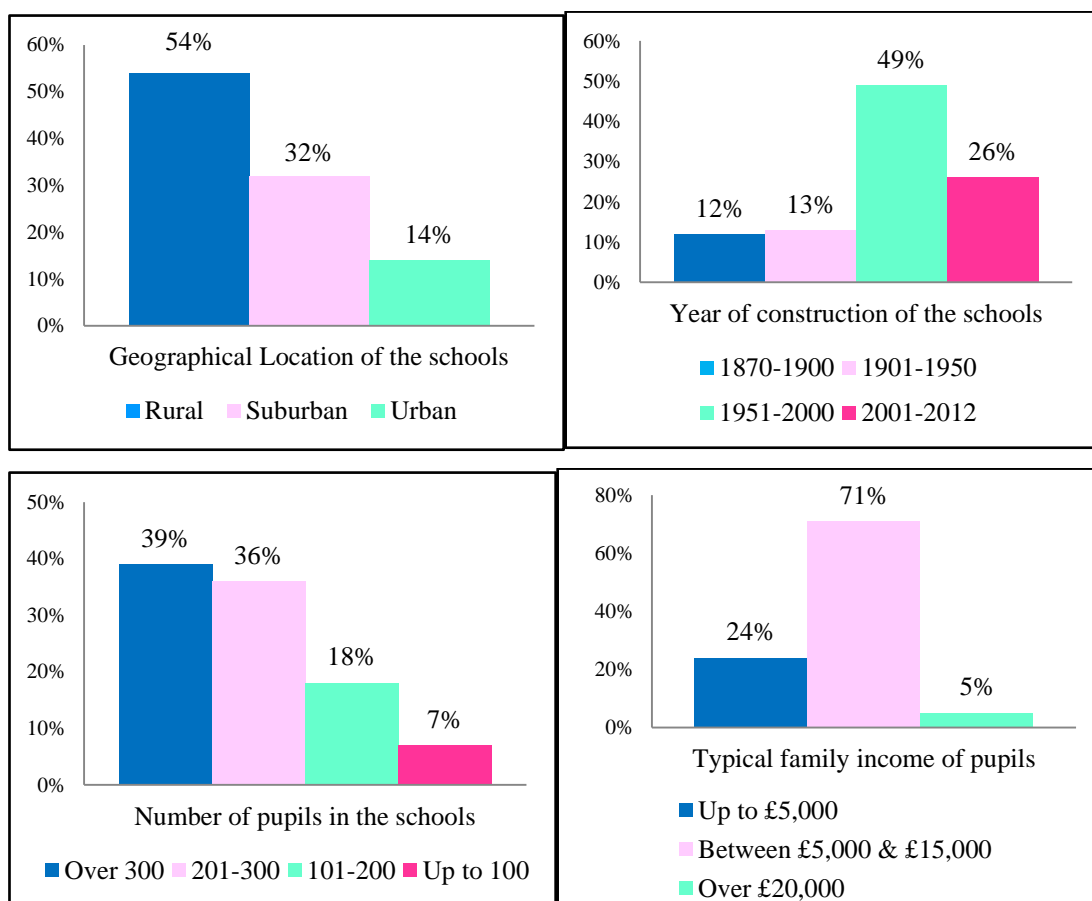
[45] In Portugal the income is usually calculated monthly, meaning that in this case 71% of the families receive between €500 and €1000 per month.
[46] The graphics were designed to illustrate better the common features and the main differences between the schools that answered the questionnaire. Absolute numbers of each category were transformed into percentages to facilitate the reading. The vertical axis presents the quantity while the horizontal axis shows the different answers for each question.

3.4 - Data analysis

The use of different methods of data collection, as stated by Punch (2009), allows the cross-checking of findings and prevents the bias arising from the use of one single method. However, this use of different methods can also be a hard task, especially in terms of data analysis. The analysis of data should be conducted in the same way that data was collected. In other words, the data analysis should follow the same principles: the application of a series of concepts and ideas in a reflective way, but with sensibility to see other things that data from different cases may reveal beyond our initial expectation. As Ellis et al. (2006:54) argue the point is "to analyse each set of data within the same parameters of its own paradigm but addressing common analytical questions". This approach is also suitable given the characteristics of the study: a mainly exploratory investigation that deals with complex and broad aspects of reality. As stressed by Ellis et al. (2006:78), "data generated by different methods may be integrated only at the point of theoretical interpretation, each having been analysed within the parameters of its own paradigm." This kind of integration is called interpretative integration, where the findings generated by the different methods are merged into a coherent account. In my research, I analysed each set of data individually and brought them together under specific themes to provide a broader explanation of the research topic[47].

Since this research used a two phase mixed methods design, sequential and mainly qualitative, the analysis of the data collected was also operationalised within the same principles, meaning that the time spent with the data collected from the case studies was analysed first and had a much greater role in the research overall.

The central activity in qualitative data analysis is a special form of coding in order to facilitate description and analysis. Coding includes the use of concepts and categories and involves two stages. The first one, known as open coding, involves breaking the data down into categories and sub-categories; the second stage, known as axial coding, is used to find relationships between these sub-categories and categories, putting the data together in a new way in order to discover regularities, variations and singularities (Blaikie, 2000:239).

My plan to research the relationship between sustainable development and primary schools started by "reading my data literally" (Mason 2002:149), in the sense that I looked at the literal form, the content, the structure, the style, the words and language used, in order to have a sense of "what is there" (Mason 2002:149). In order to do this initial analysis of the data, I followed several steps: I read and summarised the "Sustainable Schools documents",

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[47] In chapter five I will present and analyse the data collected in the five case study schools and with the questionnaire. The data is gathered under different themes that emerged during the process of data analysis.

and the different documents I collected in the case-study schools; I transcribed the interviews, and collected the rest of my notes from the field diary, the talks with the teachers and pupils and the photographs I took.

After this initial literal analysis of the data, I moved on and did a more "interpretative reading" (Mason 2002:150). This was a process of seeking the most frequent ideas, themes and concepts emerging from the data sources, and I started to produce a series of initial categories by which sets of frequent notions and ideas were grouped. These categories were then reduced and refined after a back and forth exercise and reflection between data, research questions and literature review. I used the NVivo software to help in the tracing of words and phrases matching the defined initial set of codes/themes. I imported all the material from the different sources (interviews, fieldwork diary, photos, schools' website, etc.) and started the coding, gathering the material under different themes as described above. These themes[48] arose from a detailed analysis of the data collected and from the theoretical propositions discussed in chapter two. As stressed by Bazeley & Jackson (2013), it is common for those that employ discourse analysis to start with a detailed analysis of the data and work up to broader categories.

The choice of qualitative processing software was not significant, as I was using it with two main purposes: a) as a filing system to visualise, and more easily identify all the data collected in the different schools and with the different methods; b) to corroborate by frequency counting the most recurring themes and concepts I had previously identified and coded in the package, such as the outdoors, or the natural environment. The NVivo software was thus used as a way of interrogating further the data with specific purposes already in mind, but not in terms of using tools designed to construct theoretical relationships and models. Welsh (2002) stresses that this kind of data interrogation is important to gain an overall impression of the data.

Nonetheless, computer assisted qualitative data analysis software tools has benefits but also several limitations and there remain debates over their effects even on the basic coding process. Richards (1995) argues that researchers working with qualitative data will be helped by the use of some computer software, since it enhance researchers' ability to analyse. Blank (2004) claims that software makes analysis faster and more efficient. However, debates continue over the use and value of data analysis software tools. Qualitative research often requires the analysis of a large amount of data, relatively unorganised and diverse, demanding a careful organisation and meticulous data sorting, which can be achieved more easily using some sort of software tool (Seror 2005). That was a feature of the software that

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[48] Examples of these themes, that are developed and analysed on chapter five, are: the environment, the outdoors, buildings, formal curriculum, participation, citizenship, etc. These themes were built based on the theoretical framework of the research, together with inputs from the 'Sustainable schools' strategy and a preliminary analysis of the data.

was appreciated in this case. However, the process of coding and editing the data itself, searching for themes and concepts need to be critically examined to ensure that it is not the software guiding and shaping researcher's choices, but the other way around. I was conscious of this critique at the time I was using the package and took care not let the ease with which coding could be achieved affect the time I spent thinking about was I was doing.

The next and final stage of the analysis took place outside the coding process and included a "reflexive reading" of the data (Mason 2002). This stage implied a certain degree of detachment and introspection to be able to relate the research objectives and concerns with the data analysed, taking into account my own analytical interpretations and trying to have a more holistic view of my data. I reflected on my role and perspectives on the process of generation and interpretation of the data, going back to my field work notes and to my preliminary analysis, and compared it to the ideas and themes that emerged from the more systematic analysis of the data.

Additionally, I also began to cross-reference the different types of data with each other by developing case reports. After the establishment of categories that emerged from the process explained above, I made a report for each of the five case study schools and a contrast table using those categories. I constructed these reports with material from different sources, but this time selecting specific sentences directly from the raw data and ideas relevant to each category. This exercise allowed me to have a picture of each school concerning the themes I was interested in, and also revealed the main similarities and differences between the schools.

After the visit to the third school I started to write the analytical reports for each of the schools. "All empirical research has a 'story' to tell" (Yin 2009:130) and so these reports allowed me to have all the relevant information about each school in a summarised way and because they were written with a fixed structure I could easily compare the different characteristics found in the schools. Cross-case synthesis (Yin 2009:156) consists of the creation of word tables that display the data from individual cases according to a framework. Thus, I built a table where each school could be compared according to some of the categories previously identified with the initial analysis of the different set of data, and I looked for similar or conflicting opinions/ideas/practices about the same topic, enabling to draw cross-case conclusions[49].

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[49] The table present on figure 15 provides an example of some of the categories used to compare the data gathered in the five schools.

Figure 15 – Example of some of the categories of the contrasting table of the five case-study English primary schools

	Peace School	Green School	Outdoor School	Energy School	Multicultural School	Thoughts
Year of construction	1938	2001	1945	1992	2004	Can the year of construction and the conditions of the building influence sustainability practices? To what extent?
Number of pupils (approximate)	350	470	120	420	550	Differences between smaller and bigger schools in the organisation of ESD; differences in accessing information, networking and grants.
Family Income	Medium (£20,000-£30,000)	Low (Up to £20,000)	Medium (£20,000-£30,000)	High (Over £30,000)	Very Low (Up to £20,000)	Socio-economic background of the pupils may change sustainability practices in schools.
The start of ESD	1995	2002	1990	2008	2011	How long does it take to a school to become 'sustainable'?
How ESD started in the school	Small projects in the grounds – grants and prizes – that turned into more and larger projects. Use of the 'Eco-schools' framework.	'Eco-schools' framework. Small initiatives to save energy and water, that turned into bigger involvement of staff – larger projects.	Development of the school grounds with a grant and a link with a school in Kenya to explore environmental topics together.	'Eco-schools' framework. Development of the grounds and saving energy.	Development of the grounds, improvement of the building and introduction of ESD in the curriculum.	The 'Eco-schools' programme seems to be a popular way to introduce ESD into the school. Some schools have developed ESD when opportunities arrive and others have a strong vision about what they want to achieve.
Why ESD was developed	Personal interest, opportunities to improve the school.	Personal interest and a strong motivation.	Opportunities to improve the school.	Personal interest and "it's the right thing to do".	Personal interest and a strong motivation..	The motivations vary, but always involve a strong enthusiasm and interest in the ESD.

Summing up, the data analysis comprised the following activities:

(1) The documents from the "Sustainable Schools" policy and the selected schools were read and summarised[50], looking at its key concepts and themes, but also trying to identify patterns on the definition of ESD, the activities proposed, the emphasis on different aspects of ESD;

(2) The interviews were transcribed and coded. The data collected in the field diary was summarised and also coded. I used a computer assisted qualitative data analysis software tool (NVivo) to help in the coding and categorisation of the data collected in the schools.

(3) After gathering all the information, a report for each school was written, using relevant information from different sources. In these reports I included things such as the history of ESD in the schools, interpretations of the concept from the different actors, activities developed, incentives and problems encountered, and future plans;

(4) A contrast table[51] was designed to compare the results from each school, using the categories relevant to answer the research questions and also those that emerged from the analysis of the data;

(5) The questionnaire was analysed descriptively using spreadsheet software, summarising in tables and graphics the characteristics of the distributions, and used to complement and contrast some of the findings of the case studies.

The collection and analysis of the data, having been done in stages, allowed a continuous adaptation to the field and an increased awareness of the topics that needed further clarification or attention.

The research design together with the nature of the research and the experiences lived during the data collection determined a certain hierarchy of the data. The collection and analysis of the data therefore followed a "theoretical logic" (Bryman 2001:98) rather than a statistical logic, and so the data selected and presented for reporting is selected not to present an overall descriptive account of the problem, but instead a theoretical meaningful account of the problem.

In the following chapters I will present and discuss the findings and provide evidence to answer the research questions. My conclusions are mainly based on the data collected on the first three schools I researched (Peace, Green and Outdoor Schools) since, as explained before, these are the schools I spent more time in and that have been developing ESD activities for longer. The data collected in the other two schools (Energy and Multicultural)

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[50] The list of the documents analysed, from the 'Sustainable schools' strategy, will be presented and summarised on chapter four.

[51] An example of some of the categories used in this contrast table is present below, on page 75.

together with the data from the questionnaire, was used mostly to complement or clarify the findings from the other three schools.

Although I had specific objectives and questions when I visited the schools, the collection of data was also an exploratory activity, since it was only with time spent in the schools and conversations with different individuals that I realised the importance of certain activities, themes, categories, perceptions, and ideas. The time I spent in the schools allowed me to see the practicability of ESD, the influences and shapes it takes in the different schools, and the constraints surrounding it (e.g. the time, people, resources, training, curriculum, society, government, academic pressures, etc.). These different insights gave me the information I needed to build the questionnaire, and the questionnaire, in turn, gave me the possibility to confirm, clarify or extend my conclusions from the case studies.

I believe that the way the data was collected and analysed was appropriate to answer the research questions and to the nature of the research topic, however it also had some important implications on the findings, which one should be aware of. These implications have been presented in this chapter: the closeness to some people in the schools and the limitations in the access to more schools or in the extension of my time in the schools selected. These facts constrained not only the type of data gathered, but also the data's degree of depth; the analysis of causal relationships between ESD and its context; and the sort of conclusions of the research.

The first part of this thesis presented and analysed the theoretical and methodological frameworks of the research. I explored the challenging context surrounding ESD, looking at the most pressing environmental and social problems in the UK and the role of schools in this problematic; and at the way ESD is described and interpreted in the literature and institutional documents. The complexity surrounding the research object explored in these initial chapters justified the diversity of the research methods and objects, presented and discussed in this chapter.

The next part of the thesis will present and analyse the main research findings and their implications, starting with a detailed examination of the 'Sustainable schools' strategy and a review of the ESD policy context, both in England and Portugal, in the following chapter.

Chapter 4

The ESD policy context in England & Portugal

4.1 – A review of ESD in England

Education for Sustainable Development (ESD), Sustainability Education (ES), and Education for Sustainability (EfS) can be largely interchangeable terms (UNESCO)[52], often used to describe the practice of teaching for living in a 'more sustainable' world. ESD is the term most used internationally and by UNESCO, its leading international agency, and is the term used in this work. The use of ESD in the present work does not mean, however, that I am particularly in favour of this way of labelling education, but it is rather a practical shortcut that allows me to aggregate the key institutional visions of an education that may lead to sustainable development.

This section reviews mainly the development of ESD in England because the 'Sustainable schools' programme was set up there, despite the efforts to emphasise the strategy as a national, British policy. This particular strategy was developed with the intention of being adopted by the different UK regions that should adapt it to their own needs and interests, however the financial and human resources were made available only in England and it was there that the strategy was established.

The concept of ESD has been developed in parallel with the concept of sustainable development since its endorsement at the UN General Assembly in 1987. Initial thoughts concerning ESD were presented in Chapter 36 of Agenda 21, "Promoting education, public awareness, and training", being the first official document that identified education as an essential tool for achieving sustainable development (UNESCO 2006:11). ESD has its roots, according to some authors, in Environmental Education (Teixeira 2003). It has been included in the National Curriculum for schools in England since 1990 as a cross-curricular theme, alongside with Health Education, Education for Citizenship, Careers Education and Guidance, and Economic and Industrial Understanding. As a result of changing social, economic and political contexts, the study of the natural environment changed over the years, from nature studies in the 1960s to global education in the 1980s and ESD in the 1990s (Palmer, 1998), to global and citizenship education in the 2000s. The ideas about the environment and related education policies, as well as perspectives of the value of nature changed over time. The utilitarian perspective, stewardship versus imperialism over nature, or the more recent movement called "radical environmentalism" (O'Neill et al. 2008) are

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[52] Retrieved from: http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development/education-for-sustainable-development/

present, with greater or lesser weight, in the different spheres of life and shape the way ESD is considered.

ESD in the England and its implementation in schools are inevitably linked with the UK strategies for sustainable development, which, in turn, are influenced by the international context. The global system has an increased importance in the shaping of national policies. The processes that now frame education policies are often constituted globally and beyond the nation-state (Rizvi & Lingard 2010:3). In order to understand how the concept of sustainable development was translated into educational policies in England, a brief account of the main events and policies of sustainable development, both international and national is presented in the table below.

Figure 16 – Key events and policies concerning ESD

		International	National	Department for Education UK
1970s		UN Conference on Human Environment "Limits to Growth" (1972)		
		Establishment of UNEP/IEEP (United Nations/International Environmental Education Programme) (1975)		
		1St Intergovernmental Conference at Tbilisi – *Tbilisi Declaration* (1977)		
1980s		"The World Conservation Strategy"– IUCN/UNEP (1980)		
		"Our Common Future" – WCED (1987)		
1990s			Set up of the Environmental Agency (EA) 1996	Environmental education was adopted as a cross-curricular theme of the national curriculum, inspired by the Tbilisi goals (1990)
		"Caring for the Earth. A strategy for sustainable living" – IUCN (1991)	"Our Common Inheritance" – Britain's initial engagement with sustainable development (1998)	DfES and DEFRA formed the Sustainable Development Education Panel (SDEP) with a five year term to identify strategies to promote ESD (1998-2003)
		UN Conference on Environment and Development at Rio "The Earth Summit" (1992)	"A better quality of life. Strategy for sustainable development for the UK" – DEFRA (1999)	SDEP in its first annual report advised the Government to include ESD in the revised school curriculum (1998)
		"Rio Declaration on Environment and Development"; "Agenda 21" (1992)		ESD is included in the national curriculum (1999)
2000s			The UK Government established the Sustainable Development Commission	DfES revised the national curriculum to reflect the inclusion of ESD across the

		(SDC) (2000)	subjects (2000)
	UN Conference at Johannesburg "Education for Sustainability: from Rio to Johannesburg" (2002)		QCA creates the curriculum guidelines for schools that identified eight key ESD concepts initially suggested by SDEP (2002)
			"Learning to last: the Government's sustainable development education strategy for England" – SDEP (2003)
			"Learning the sustainability lesson" - Environmental Audit Committee (EAC) (2003)
			"Every child matters" Published by the UK Government (2003)
		"Achieving a better quality of life: review of progress towards sustainable development" – DEFRA (2004)	"Building schools for the future"' project launched by DfES (2004)
	UN Decade of Education for Sustainable Development (2005-2014)	"Securing the future" the UK sustainable development strategy – DEFRA (2005)	"Learning for the future: the sustainable development action plan 2005/6" – DfES (2005)
		"Securing the region's future: strengthening delivery of sustainable development" – DEFRA (2006)	Sustainable Schools Strategy – DfES (2006) and the "Year for action on sustainable development for schools 2006/7"
			"The children's plan: building brighter futures" – DSCF (2007)
	UNESCO World Conference on ESD "Moving into the second half of the UN decade" Bonn Declaration (2009)	"Sustainable development indicators in your pocket" – DEFRA (2008/9/10)	DfE publishes the Coalition Government's position on sustainable development and sustainable schools on its web site (2010)
		"Mainstream sustainable development" – DEFRA (2011)	DfE seeks to shift responsibility for promoting "sustainable schools" to a consortium of civil society groups led by DEA, NCB and SEEd (2011)
	Earth Summit 2012, "Rio +20"		

Once called "the dirty man of Europe" (Rose 1990:10), being the largest sulphur polluter in Western Europe in the 1980s, the UK had a substantial shift during the 1990s, from trying to dismiss the environmental problems to the emergence of cross-sectorial thinking with the potential for responding to the UNCED process (Young & Barrett 2000).

According to Lafferty & Meadwcroft (2000) Britain's response to the UNCED process can be divided into three stages: the first starts with Thatcher's speeches in 1988 and the

publication of *Our common inheritance* (1998), Britain's first engagement with sustainable development; the second stage was between 1990-1 and the preparation for the Rio conference characterised by a sectorial approach to the issue; and the third stage that started in 1996 with the creation of the new Environment Agency and a more integrated and cross-sector strategy.

Particularly since the adoption of *Agenda 21* at the UN Earth Summit Conference in 1992, sustainable development and ESD have been promoted by the UK Government. With the establishment of the Sustainable Development Education Panel (SDEP) in 1999 and the inclusion of ESD in the national curriculum in 2000, the government began to demonstrate its commitment to sustainable development through education. However, the way in which education and schools should contribute to the achievement of national sustainable development goals was not clear. In 2003, the House of Commons Environmental Audit Committee published a report called *Learning the Sustainability Lesson* in which it states that:

> Learning is a key driver for sustainable change. However, the UK strategy for sustainable development does not set out a clear vision of the contribution which learning can make to achieve the Government's sustainable development goals (House of Commons Environmental Audit Committee (2003:12).

Concerned with the lack of an educational policy for education for sustainable development, the Committee recommended that the DfES[53] develop a National School Standard for ESD without using the 'Eco-schools' programme as the exclusive tool with which to promote it.

In 2006 the DCSF launched the 'Sustainable schools' strategy on the *Teachernet* website (now decommissioned) declaring that "the UK Government would like every school to be a sustainable school by 2020" (DCSF 2006). By doing so, it was presenting the role of education in supporting the former government's national sustainable development goals set out in the document *Securing the Future* (DEFRA 2005) and reinforcing the ideas set out by *Every Child Matters* (DfES 2003) and *The Children's Plan* (DCSF 2007b), establishing the connection between children's well-being and preservation of the environment (Huckle 2009).

Despite the growing importance and visibility of ESD in the national and international agendas over the past, several reports state that, in general, it continues to have a marginal role in schools and an unclear place in the curriculum. In 2008, the United Kingdom National Commission for UNESCO published a report that assessed the situation of

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[53] The Department for Education and Skills (DfES) was a UK Government department between 2001 and 2008. It was responsible for the education system and children's service in England. In 2007 the department was split in two: the Department for Children, Schools and Families (DCSF) and the Department for Innovation, Universities and Skills (DIUS). In 2010 the DCSF was replaced by the Department of Education with the Conservative/Liberal Democratic Coalition Government.

education for sustainable development in UK considering policies, practices and stakeholders. According to this report, a wide range of sectors has been working for over ten years to promote an educational dimension to sustainable development, and as a result of that the UK and the three devolved administrations have distinct ESD policies in their formal education approaches (UNESCO-UK 2008:11).

Looking specifically to England, the report by UNESCO-UK (2008) recognises the 'Sustainable schools' project as a noteworthy ESD effort, however, it also stresses the absence of a formal ESD curriculum in schools and the peripheral importance of ESD compared to national curriculum subjects:

> ESD is not yet a core element of the learning experience in English schools. There is evidence of innovative ESD being practised, and the Sustainable Schools programme is being actively supported in national, regional and local Government processes, but most studies conclude that it is largely a peripheral area (UK National Commission for UNESCO 2008:36).

In the same year, Ofsted published the second of three reports based on the results of visits by inspectors to forty-one primary and secondary schools to assess the extent to which these schools teach their pupils about sustainability. The main conclusion was that knowledge about sustainability was limited and the work on sustainability tended to be unprioritised, partial and uncoordinated (Ofsted 2008:4). In most of the schools, sustainable development was a peripheral issue often confined to extra-curricular activities and involving a small number of pupils,

> Most of the schools visited had limited knowledge of sustainability or of related initiatives. Work on sustainability tended to be piecemeal and uncoordinated, often confined to extra-curricular activities and special events rather than being an integral part of the curriculum (Ofsted 2008:4).

These results came out after the *Year of Action on Sustainable Development for schools* (2006/7) designated by DCSF, with the development of the 'Sustainable schools' website, when a series of resources and funding were made available (Symons 2008:8). There was the hope that by the end of this year of action: all schools would have received information about the 'Sustainable schools' strategy; at least 60% of schools would have addressed the goals of the strategy in their school development plans; and 90% of the schools would have taken action on sustainable development, considering that the action has had a measurable impact on students' knowledge and understanding of sustainability issues and/or improved the schools' environmental performance (Goodfellow & Andrew-Power 2007:14).

The 'Sustainable schools' strategy was the main tactic adopted by the former Government to develop ESD in schools, however, there were problems of interpretation, implementation and dissemination. In 2007 the Times Educational supplement and the Consortium

(education suppliers) found that 72% of a sample of 300 headteachers had not heard of the national framework for 'Sustainable schools', 79% were making no effort to discover their school's carbon footprint and fewer than 30% had actually undertaken simple efforts to make their schools more sustainable (Terry 2008).

In 2009, Groundwork UK[54] published a report that summarises evidence about how 'Sustainable schools' were progressing, from Groundwork's education practitioners in each English region. These findings are particularly relevant to my research, since they highlight the way this specific policy was perceived by the schools, and why the strategy failed to achieve its main goals, a discussion that will be taken further along with the thesis.

The survey was conducted in twelve schools of every English region in order to understand the stage of implementation of the strategy. Some of the key results show that 84% of the analysed schools were registered for one or more of the schemes around at the time (e.g. 'Eco-schools' programme), 73% were taking additional activities as a direct result of registering for a scheme, 76% have made links between these schemes and 'Sustainable schools', and 26% have reported their 'Sustainable school' activities in their self-evaluation form (SEF) and were ready to share information. According to the document most of the schools were aware of the government target and of the 'Sustainable schools' strategy, but were not able to put into practice what was needed to go further. Confusion about the sustainable goals schools should be aiming for and a perceived lack of support from local and regional government structures in some areas, were the main problems that schools faced when tried to implement the framework. The report also summarises findings at the school level that reveal some of the most common problems schools encounter when trying to develop ESD:

- There is a misconception that there should be an end product and that there must be some kind of end point when a school can claim to be sustainable. Schools want to know how they decide when this point has been reached;
- Many schools are not really clear on what they are being asked to do as there are so many choices in doorways and routes along the 'Sustainable schools' framework;
- The importance of this agenda is recognised by staff and there is plenty of enthusiasm, but this is tempered by the perception that there is insufficient time to carry out the suggested activities over everything else they have to do;
- Schools respond best in those Local Authorities where sustainability is being promoted through a range of other initiatives;

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[54] "Groundwork is a group of charities helping people and organisations make changes in order to create better neighbourhoods, to build skills and job prospects, and to live and work in a greener way". Retrieved from: http://www.groundwork.org.uk/who-we-are.aspx

- The 'Sustainable schools' framework tools are useful where they have been properly read and understood. Many schools however have only studied them superficially, then developed the perception that it is rather daunting;

- Some schools not engaged in the 'Sustainable schools' remain unconvinced about the value added to pupil achievement in schools actively involved in the programme;

- Many schools that have made good progress feel this is due to a nominated and usually dedicated individual taking the lead to coordinate the activities. Some schools have given official recognition to such a role.

In a National College Survey, 98% of over 1,700 leaders who responded, said sustainability was important to them personally, fewer than 15% however, felt that their school was already addressing sustainability. The reasons they pointed out for this were not lack of enthusiasm, but rather the numerous and sometimes conflicting priorities existing in schools (Porrit et al. 2009:16). Together with the relatively low familiarity with ESD in schools, there was another relevant aspect: how sustainability was interpreted. In a report published by Sustainability and Environmental Education (SEEd) in the same year, there is a suggestion that in a majority of schools, sustainability was seen as a mainly environmental agenda, the economic and social dimensions were less well appreciated.

In 2010, the UK Commission for UNESCO published another report to describe what had been happening to ESD across the UK since 2008. The main conclusions were that between 2008 and 2009 there were signs of substantial progress in embedding policies and developing practices of ESD; programmes such as the 'Sustainable schools', the 'Eco-schools' and the 'Global learning' enjoyed continued support and popularity from government, NGO's and schools. However, it was also in 2010 that the coalition government decided to no longer support the 'Sustainable schools' initiative, leaving its future in the hands of SEEd and other UK charities.

In 2013, the place of ESD in British schools remains unclear. The UK Government states that "is fully committed to sustainable development and the importance of preparing young people for the future"[55], however, it leaves in the hands of schools the decision of whether to adopt or not, a path towards sustainability and in doing so, choosing their own approach and pace.

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[55] Retrieved from:
http://www.education.gov.uk/schools/toolsandinitiatives/sustainabledevelopment/a0070736/what-is-sustainable-development

4.2 A review of ESD in Portugal

Since 1986, basic education in Portugal has consisted of three cycles. The first cycle corresponds to primary education, which comprises four years and it is for children from six to ten years old. Primary education is also divided between statutory subjects – Portuguese language, Mathematics, Natural Science, Artistic Expression and Physical Expression, and non-statutory ones – Project Area, Skills Development and Civic Education. In 2010, the Government launched a proposal for an Education for Citizenship (Santos 2011) that should be cross-curricular and without involving new costs or more lesson hours. This proposal was divided in three main parts: 1) Skills to develop (e.g. empathy, critical thinking, participation, creativity, communication); 2) Learning topics (e.g. human rights, collective heritage, well-being, cultural diversity, identity, democracy); 3) Outcomes (e.g. responsible citizens, interest in the community). This project emphasises an education based on values and attitudes, also present in ESD in its social dimension, however, there is no reference to education for sustainable development in any part of the document or in the national curriculum.

Schmidt (2010:12) argues that there is not any ESD strategy or ESD policy in Portugal. ESD-like activities are connected and developed through Environmental Education and not as an autonomous body of knowledge and practice. Environmental education started to be developed in the country in 1973 with the National Commission for the Environment, coinciding with the worsening of environmental problems and the increasing societal awareness. With Portugal's political revolution in April 1974, environmental questions seemed less relevant and it was not until 1987, that the thematic was brought up to life again with the establishment of the National Institute for the Environment. At the same time, the Ministry of Education started to integrate environmental education in the curricular agenda, but it was restricted to specific areas, such as nature conservation and waste.

The first National Environmental Policy Plan is published in 1995, where Environmental Education appears in a specific chapter, mentioning the links between education policies, the environment and formal training. This plan, however, did not have a practical application for the implementation and dissemination of Environmental Education in the curriculum of the schools (Freitas 2006).

Schmidt (1999) argues that Environmental Education in Portugal should be a cross-curricular theme, common to all the key subjects that should promote and explore in different ways knowledge and information about the natural environment. Teixeira (2003) states that Environmental Education in Portugal is becoming more and more ESD. A broader perspective about the environment has been developed, in which political, social and cultural spheres gained greater importance. In 1996, Portugal joined the 'Eco-schools' International

Program through the European Blue Flag Association and the number of schools enrolled, translated into the number of eco-projects and environmental activities, have grown considerably since then.

In 2010, Schmidt, Nave and Guerra published a study on the state of Environmental Education and ESD in Portugal and looked at the constraints and potentialities of it through two questionnaires: the first one applied to non-educational organizations (Local councils, NGOs and private companies) which are involved in the promotion of Environmental Education (EE) and ESD and the second one to around 15.000 schools (primary and secondary, public and private). The main objective of the research was to diagnose the way the different organizations promote and practise ESD. The main conclusions suggest that:

(i)   ESD continues to be a 'leisure' supplement rather than a major educational feature;

(ii)   The majority of the projects is organised internally by the schools (65%), the remaining are organised by the local council, NGOs or between two or more schools;

(iii)   The main objectives of the different projects can be divided into four categories: a) To inform and increase awareness (39%); b) To participate in the local community (30%); c) To change attitudes and behaviours (21%); d) To promote skills (10%)[56];

(iv)   The major areas covered by the projects are: a) waste, recycling, reusing (40%); b) conservation and biodiversity; c) water (30%); d) energy (19%); e) natural environment and sustainable development (15%); f) urban environment (14%); g) citizenship (13%); h) forests (8%); and i) consumption (1%);

(v)   88% of the schools that answered the questionnaire mentioned the existence of grounds, but only 2% state that there are trees in the school grounds, and a very small percentage 0,5% have a greenhouse or a pond, and 9% have vegetable plots;

(vi)   The existence of exterior space and specific infrastructures are seen as the main facilitator to develop EE/ESD activities;

(vii)   92% of the schools stated that they have sporadic activities, such as: trees plantation, awareness actions, community work, outdoor walks; 64% recycle paper, 58% have measures to save water and energy, and 50% recycle plastic;

(viii)   The subjects with the strongest links to EE/ESD are the Project Area, Natural Sciences, Civic Education and Geography;

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[56] The way the different percentages were calculated is not explained in the book. The authors only present the final results already divided in the percentages here shown.

(ix) The majority of projects is developed in primary schools (49%) or nurseries (33%); only 12% is developed in the secondary schools, highlighting the fact that most of the projects are devoted to small children;

(x) Projects usually last one curricular year (51%) or less (11%) and focus mainly on one year group. The involvement of the whole school or the community is rare and the projects are mainly developed by teachers (mostly women);

(xi) 82% of the projects is developed through the 'Eco-schools' program and the main themes are waste, water and nature conservation;

In sum, the research conducted by Schmidt et al. (2010) concludes that ESD in Portugal is mainly aimed at primary school children; involves usually one year group and not the whole school or community; it is fragmented and short-term; the main themes explored are nature conservation and waste, which are secondary themes in the current environmental agenda, according to the authors; it focuses mainly on ecological aspects and rarely on social or economic factors; there is no lack of resources or initiatives but there is great difficulty in turning those into long-term projects involving more than a few people within schools (Schmidt et al. 2010).

After this initial review of the ESD policy context in both England and Portugal, with the aim of characterising the context where my research was developed, the rest of this chapter will focus on analysing in detail the 'Sustainable schools' strategy. The research focus on this particular strategy should be understood as a combination of different reasons: a) methodological, since the strategy's eight doorways (DCSF 2006) represent "sustainability themes" that were used by the 'Sustainable schools' strategy to assess the development of ESD practices in schools and helped the research to identify ESD-related topics; b) instrumental, since the policy provides the opportunity to analyse the way sustainable development goals are translated into educational policies; and c) evaluative, since the policy itself is under scrutiny, in order to understand how and why it was designed and implemented.

4.3 - Description of the 'Sustainable schools' Strategy

The 'Sustainable schools' strategy was presented using a framework that should have guide schools to become sustainable by 2020. This framework was described in the policy documents as comprising three interlocking parts, as presented in the documents:

a) A commitment to care - for oneself, for each other (across cultures, distances and generations), and for the environment (near and far). "The idea is to extend the 'care' that existed already in school in new areas. It should also care about the

energy and water it consumes, the waste it produces, the food it serves, the traffic it attracts, and the difficulties faced by people living in its community and in other parts of the world" (DCSF 2008a:2);

b) An integrated approach – "a sustainable school explores sustainable development through its teaching provision and learning (curriculum); in its values and ways of working (campus); and in its engagement of local people and partners (community)" (DCSF 2008a:2);

c) A selection of doorways or sustainability themes – these are entry points or places where schools can establish or develop their sustainability practices[57]:

> 1 – Food and Drink
>
> 2 – Energy and Water
>
> 3 – Travel and Traffic
>
> 4 – Purchasing and Waste
>
> 5 – Buildings and Grounds
>
> 6 – Inclusion and Participation
>
> 7 – Local Well-being
>
> 8 – Global Dimension (DCSF 2006).

The promotion of healthy living, environmental awareness, community engagement and citizenship were the main goals of the strategy, defining a sustainable school as one that:

> Conserves energy and water; avoids the use of pollutants and potential pollutants; takes steps to minimise the production of waste; enhances and protects plants and wildlife; meets local needs while respecting people and their environment through involvement. (DCSF 2009a:6)

> A sustainable school is one that empowers and educates young people for a sustainable future. Sustainable schools put care at the heart of their ethos, enabling pupils to care for themselves, for each other, and for the environment. They sit at the heart of their communities, acting as beacons of sustainability for local people. Many schools are attempting to become sustainable schools, but few, including the leading examples, would say that they have yet achieved this. The journey is necessarily a long one, and full of surprises, but all schools can get started or take the next step on their journey. (Teachernet online[58])

Each of the doorways draws its inspiration from government policies concerning sustainable development and quality of life,

> Key priorities of the UK Sustainable development Strategy, *Securing the Future* (DEFRA, 2005) include sustainable consumption and production, climate change, natural resources protection and sustainable communities. The National Framework for Sustainable Schools interprets these priorities for schools and offers them a series

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[57] Retrieved from the 'Sustainable Schools' website: www.teachernet.gov.uk/sustainableschools, now archived in the National Archives.

[58] Retrrieved from: www.teachernet.gov.uk/sustainableschools

of 'doorways' through which to establish their sustainability practices. (DCSF 2008b:10)

The consultation paper issued by the UK Government in May 2006, *Sustainable Schools for pupils, communities and the environment: delivering UK sustainable development strategy* (DfES 2006a), exposed the importance of the topic for both adults and young people in schools, and nurtured the idea of the eight doorways and its development at a national level. Concerns about poverty and injustice, anti-social behaviour (e.g. racism, vandalism, littering), frustration with the state of the environment, pollution and destruction of the natural environment are expressed by young people and taken into consideration by the strategy (Goodfellow & Andrew-Power 2007:19). ESD delivered through 'Sustainable schools' was presented as a way to transform schools into models of good practice for children and their communities, thus meeting not only the national goals but also the young people's concerns.

The key documents of the strategy produced by DCSF can be divided into three main areas:

1. Introduction of the strategy:
    a. *National Framework for Sustainable Schools* (2006) – described the eight doorways and recommendations on how to develop each of the doorways;
    b. *Sustainable Schools for pupils, communities and the environment* (2007) - consultation paper about the strategy for schools, local authorities, Government departments, community and non-profit organisations;
    c. *Sustainable Schools a brief introduction* (2008a) – described a sustainable school, the national framework and the available support for schools;
2. Guidance and resources:
    a. *Top Tips for schools* (2007-2008-2009) - addressed waste, travel, purchasing, food, water, energy, global dimension and biodiversity. These documents provided guidance and advice in the form of practical measures to, for example, reduce the consumption of schools or improve the awareness of children concerning the complexity and interdependence of the world;
    b. *Planning a Sustainable School. Driving school improvement through sustainable development* (2008b) - contained thirteen participatory activities to help schools planning, implementing, monitoring and evaluating their progress towards becoming a sustainable school;

c. *Sustainable Schools: How national recognition schemes can support your school's progress* (2008c) - provided guidance about the different recognition schemes and how they could help in the development of the different aspect of sustainable development;

d. *A bursar's guide to Sustainable Schools operation* (2009d) - focused mainly on two of the doorways (energy and water, and purchasing and waste). A guide that outlined measures that could be taken to reduce the school's environmental impact while teaching and learning elements of sustainability. It indicated the degree of difficulty of implementation and the savings that could be achieved, divided according to the costs (from no cost to high cost);

e. *Sustainable Schools teaching resources* - provided teaching units as a guideline for lessons with a particular curriculum focus, which contained practical advice, guidance and learning objectives, information about additional resources and activities for the classroom;

f. *Delivering Sustainable Communities through Sustainable Schools. Guidance for local authority offices* (2009e) - informed that DCSF was providing Government offices in every English region with funding to enable them to facilitate regional networks to support sustainable schools[59];

3. Assessment:

a. *S3: Sustainable School self-evaluation. Driving schools improvement through sustainable development* (version 3, 2009c) - developed to help schools recognise what they have done to promote sustainable development and to prompt next steps. It was structured in two parts: 1. to evaluate progress under the six Ofsted self-evaluation form headings (characteristics of the school; views of the learner, parents/carers, community and other stakeholders; achievement and standards; personal development and well-being; the quality of provision; leadership and management); 2. to evaluate progress with the eight doorways (from getting started to outstanding performance in the curriculum, campus and community).

For each doorway the department produced a set of documents concerning the objectives, drivers, tips, guidelines and resources for integrating sustainability into the curriculum

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[59] The Government made available £25k per annum for two years to Government offices in every English region to enable them to facilitate regional networks to support sustainable schools (DCSF, 2007b:21).

(teaching provision and learning), campus (values and ways of working) and community (wider influences and partnerships) of schools, which are summarised by me and presented in the tables below[60].

Figure 17 – Summary of the resources for the "Food and drink" doorway

Food and drink

Objectives	Drive	Guidelines
a) To have healthier pupils offering healthy food and drink; b) To protect the environment sourcing sustainable and ethically produced food; c) To support local producers and suppliers providing local food and drink; Curriculum: a) Cultivate the knowledge, values and skills needed to address the health and sustainability issues of food and drink; Campus: b) Review the impact of their food and drink choices on human health, the environment, the local economy and animal welfare; Community: c) Use the school grounds and services to promote awareness of the wider impacts of food choices.	a) The poor-quality diets of school-aged children are partly responsible for significant numbers of children being either overweight or obese; Current figures show that 19% of boys and 18% of girls, aged 2 to 12 are overweight or obese; b) Reducing the amount of meat in the menus reduces the climate impacts associated with its production, and allows, the money to be spent on purchasing higher quality meats that are lower in saturated fats; c) Diet-related diseases cost the NHS an estimated £4 billion a year.	a) Align the menus with seasonal production/harvesting cycles; b) Use the power of aggregated and collaborative purchasing to ensure that sustainable options are provided; c) Consider increasing the proportion of certified/assured products and sustainably-sourced fish in the supply chain; d) Seek opportunities to reduce food and packaging waste; e) Develop an environmental management system and improve your environmental efficiency; f) Drink tap water; g) Try growing food to help pupils understand where food comes from; h) Take pupils to visit a farm.

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[60] The information summarised in the figures number 17 to 24 was gathered from different documents produced by DCSF along the time the 'Sustainable schools' programme existed, some of those mentioned above. The summary presented for each doorway represents the key ideas this strategy proposed to the development of the theme, including the picture, that accompanies the different doorways, and that suggests how DCSF visualised the proposed doorways.

Resources	Teaching Resources
a) The school Food Trust www.schoolfoodtrust.org.uk b) Regional Improvement and Efficiency Centres www.lga.gov.uk/lga/core c) DCSF's Education Procurement Centre www.teachernet.gov.uk/management/epc d) Public Sector Food Procurement Initiative www.defra.gov.uk/foodfarm/policy/ publicsectorfood/documents/psfpi-contacts-rev090331.pdf e) Food for Life Partnership www.foodforlife.org.uk f) Fish and Kids www.fishandkids.org g) Soil Association Food for Life www.farmtrails.org.uk/fflcurrpack/tr_sheet2.htm h) One World tikki.oneworld.net/food/food5.html i) BBC www.bbc.co.uk/food/food_matters/foodmiles.shtml	The world on your plate Key stage 1 Focus: Science, Geography, Citizenship Intended outcomes: a) Understand that the majority of their food originally comes from farming either on land or in the sea; b) Realise that a significant amount of their food comes from abroad; c) Understand that food is a basic universal human need; d) Have some understanding why sometimes people who live in countries that produce some of our food do not themselves have enough to eat; e) Appreciate that the way in which their food is being produced is changing and how this affects people's lives and livelihoods; f) Understand that there is an environmental cost to food travelling long distances.

Figure 18 – Summary of the resources for the "Energy and water" doorway

Energy and water

Objectives	Drive	Guidelines
To convert schools into models of energy efficiency, water conservation and renewable energy; Curriculum a) Cultivate the knowledge, values and skills needed to address energy and water stewardship;	a) Primary and secondary schools produce an estimated 15% of UK public sector carbon emissions. Energy is a large contributor to this; b) Investment in energy and water saving equipment should be seen as an addition to good energy and water management practices; c) Low or no-cost improvements should be the first step to	a) Upgrade heating controls; b) Use energy efficient lighting; c) Install smart metering; d) Water economy; e) Manage ICT; f) Insulate hot water pipes;

<u>Campus</u> b) Review the use of energy and water and establish policies for monitoring and reducing their use through good management and the deployment of appropriate technologies; <u>Community</u> c) Use the communications, services, contracts and partnerships to promote awareness of sustainable energy and water use among stakeholders.	optimising energy and water use. These include influencing user behaviour, target setting to improve energy and water management and use, purchasing renewable energy, and making the best use of rainwater; d) Schools in the UK spend £70 million annually on the provision of fresh water and the treatment of waste water, a carefully managed school.	g) Renewable energy; h) Understand your bill.

Resources	Teaching resources
a) The Carbon Trust www.carbontrust.co.uk/schools b) The Energy Saving Trust www.est.org.uk c) Renewable Energy Association www.r-p-a.org.uk/portal.fcm d) BREEAM Schools www.breeam.org/schools.html e) SUSChool www.suschool.org.uk f) Waterwise www.waterwise.org.uk g) Sustainable Water Management in Schools www.ciria.org/downloads.htm h) Environment Agency www.environment-agency.gov.uk/subjects/waterres/?lang=_e i) The Water Guide www.water-guide.org.uk/sicence.html j) WaterAid www.green.tv/buckets_of_water k) Oxfam www.oxfam.org.uk/education/resources/water_for_all/water/causes	Water Rights Key Stage 1 Focus: Science, Geography, Citizenship <u>Intended outcomes</u>: a) Be aware of the idea of water as a resource that needs protecting; b) Appreciate that water is a basic human need and a universal right; c) Recognise that some people do not have adequate access to clean water and the consequences of this; d) Know that the environment is affected by human activity; e) Describe the various stages of the water cycle; f) Know that water can be polluted and rendered unusable; g) Understand why it is important to reduce the school's use of energy and water and learn some ways they can help achieve this.

Figure 19 – Summary of the resources for the "Travel and traffic" doorway

Travel and traffic

Objectives	Drive	Guidelines
To convert schools into models of sustainable travel using less polluting, less dangerous and healthier modes of transport. Curriculum a) Cultivate the knowledge, values and skills needed to address travel and traffic issues, and reinforce this through positive activities; Campus b) Review the impact of their travel behaviour and establish policies and facilities for promoting safe walking and cycling, car sharing and public transport; Community c) Use the communications, services, contracts and partnerships to promote awareness of travel decisions among stakeholders.	a) According to 2006 Department of Transport figures, during term time, between 8am and 9am, 16% of the cars on the road in urban areas are on school runs; b) Over the past 10 years, the number of primary-age children walking to school has declined from 67% to 49%. Over the same period of time, the number of children travelling to school by car has doubled; c) We are building or rebuilding many schools in places where walking, cycling or public transport is impractical or limited; d) When children are allowed autonomy in their movements, and have the opportunity to be independently mobile, the benefits they derive are important to both physical and social well-being.	a) Encourage cycling by providing secure bike storage and lockers; b) Set up a "walking bus"; c) Incorporate sustainable travel activities across the curriculum; d) Hold special promotions for active travel; e) Arrange training for walkers and cyclists; f) Find ways of involving pupils who are obliged to travel by car; g) Work to improve bus provision and behaviour on school transport; h) Work with the local authority to identify safer routes and possible highway improvements; i) Make sure the school travel plan is an up-to-date, living document.

Resources	Teaching Resources
a) Sustrans www.saferoutestoschools.org.uk	Getting away from it all Key Stage 2

| www.sustrans.org.uk/bikeit
b) Primary Global Eye
www.globaleye.org.uk/primary_spring01/focuson/index.html
c) Ecoturism game
www.eduweb.com/ecoturism/eco1.html
d) Department of transport
www.dft.gov.uk/bikeability
e) Living streets
www.walktoschool.org.uk
f) World Tourism Organisation
www.world-tourism.org
g) BBC
www.bbcschoolshop.com | Focus: Geography, Citizenship

Intended outcomes:

a) Acquire an understanding of sustainable and responsible tourism and its aims;

b) Explore the impacts of tourism on local communities in various locations;

c) Summarise arguments for and against tourism;

d) Describe some of the measures taken to combat the mass impact of tourism;

e) Gather and evaluate relevant information to support a particular point of view;

f) Works with others in a group. |

Figure 20 – Summary of the resources for the "Purchasing and waste" doorway

Purchasing and waste

Objectives	Drive	Guidelines
a) To minimise the waste and reduce costs by reducing, reusing, repairing as much as possible; b) To have a sustainable consumption and procurement using goods and services of high environmental ethical standards from local sources; Curriculum a) Cultivate the knowledge, values and skills needed to address sustainable consumption; Campus b) Review the purchasing and	a) The three largest waste programmes for schools are 'Waste Watch's', 'Schools Waste Action Club', 'Global Action Plan's' 'Action at Schools', and 'Eco-Schools'. Participating schools have reduced their land-filled waste by 47% on average using these approaches; b) As funding becomes devolved to schools they have responsibility for bigger budgets and a wider range of materials	a) Develop procurement expertise; b) Plan ahead; c) Know your own power; d) Don't buy unless you need to; e) Don't spend hours saving a pound, consider the total cost of procurement; f) Look for alternatives; g) Improve you buying power; h) Know what you want; i) Best price for the right

waste choices in order to reduce whole-life costs, support the local economy and establish policies for the 3Rs; Community c) Use the communications, services, contracts and partnerships to promote awareness of sustainable consumption and waste minimisation.	and services to procure; c) The DfES is piloting a new "E-Procurement Place", which features an online market place of suppliers that meet "supply charter standards", which include reduced packaging, local sourcing and other aspects of sustainable design, production and distribution.	product and the right product means goods and services with high standards of environmental, social and ethical performance; j) Try to stop producing waste in the first place; k) Reuse, recycle, swap or give it away; l) Get to grips with your paper and card waste; m) Create ripples beyond the school gate.

Resources	Teaching Resources
a) Food Trust www.schoolfoodtrust.org.uk b) Recycle Now www.recyclenow.com/schools c) Recyclezone www.recyclezone.org.uk d) Children Scrapstore www.childrensscraptore.co.uk e) Education for All www.educationforall.com f) Carbon Detectives www.carbondetectives.org.uk g) Waste Online www.wasteonline.org.uk h) Waste Watch www.wastewatch.org.uk i) BBC news.bbc.co.uk/1/hi/world/Africa/5359192.stm	Waste not Want not Key Stage 2 Focus: Art and Design, Citizenship Intended outcomes: a) Understand the harmful effects of the mismanagement of waste; b) Begin to distinguish between actions and products that are wasteful and those that are more sustainable; c) Know how they can affect the management of waste in their schools; d) Express their own feelings about the sustainability of their school; e) Be able to collect, record, analyse and present data; f) Engage in decisions and actions which lead to positive change; g) Have developed indicators to measure the school's progress towards reducing its environmental impact;

Figure 21 – Summary of the resources for the "Buildings and grounds" doorway

<table>
<tr><td colspan="3" align="center">Buildings and grounds
</td></tr>
<tr><th>Objectives</th><th>Drive</th><th>Guidelines</th></tr>
<tr>
<td>a) Management and design of the buildings in ways that visibly demonstrate sustainable development;

b) The grounds should be used to bring pupils closer to the natural world (food growing, biodiversity conservation, natural play);

<u>Curriculum</u>

a) Cultivate the knowledge, values and skills needed to appreciate the link between the built environment, human well-being and nature;

<u>Campus</u>

b)Review the way their estate influences behaviour, well-being and learning of pupils and staff, and to enhance spaces for health, achievement and play, and to provide habits for wildlife;

<u>Community</u>

c) Promote the importance of sustainable design and practices.</td>
<td>a) There are opportunities to improve the sustainability of buildings and grounds whenever schools take on capital projects;

b) Incentives for whole-life costing often improve the extent to which sustainable design and technology are incorporated into schools capital projects. Keep in mind that some aspects of sustainable design may have higher costs and no monetary cost recovery. Their value may come in the form of better health for decorators and pupils, or enhanced learning opportunities, as these technologies become the focus of the lessons.</td>
<td>N/A</td>
</tr>
</table>

<table>
<tr><th>Resources</th><th>Teaching Resources</th></tr>
<tr>
<td>a) Nature Grid
www.naturegrid.org.uk/plant/needs1.html
b) Geographical Association
www.geopgraphy.org.uk/download/REEYPseed.pdf
c) Science and plants for schools
www.saps.plantsci.cam.ac.uk/worksheets/activ/ptpts.htm
d) The great plant escape
www.urbanext.uiuc.edu/gpe/case1/c1f.html</td>
<td>Plants R Us
Foundation and Key Stage 1
Focus: Science, Food technology

<u>Intended outcomes</u>:

a) Recognise the range of things they use every day that originate from plants;

b) Appreciate their own basic need for food and that this is a shared universal need;</td>
</tr>
</table>

	c) Be able to discuss the way they live and the food they eat, and things that they use; d) Appreciate that their need for clothes, food, etc. is met by people providing a range of different services; e) Appreciate and have concern for and be curious about living things, their own and other environments; f) Know that there are many different kinds of plants and animals in the local environment and in distant environments; g) Begin to have some understanding of the concept of finite resources

Figure 22 – Summary of the resources for the "Inclusion and participation" doorway

<table>
<tr><td colspan="3" align="center">Inclusion and participation
</td></tr>
<tr><th>Objectives</th><th>Drive</th><th>Guidelines</th></tr>
<tr>
<td>a) To convert schools into models of social inclusion by enabling pupils to participate fully in school life and instilling respect for human rights, cultures and freedoms;

Curriculum

a) Cultivate the knowledge, values and skills needed to promote inclusion and participation;

Campus

b) Review their approach to promoting inclusion and participation, and establish policies that promote a culture of mutual respect and care;

Community

c) Use the communications,</td>
<td>a) The citizenship curriculum has emerged as an effective way to develop pupils as active citizens;

b) Involvement in environmental improvement projects can engender greater pride in the local community and encourage community involvement and social development for children and young people;

c) Defra's survey of young people's attitudes towards climate change was revealing: the vast majority of young people (84%) thought schools could do something to address climate change, but only a small minority (8%) actually thought their schools were doing so;</td>
<td>N/A</td>
</tr>
</table>

services, contracts and partnerships to promote the values of inclusion and participation among their stakeholders.		

Resources	Teaching Resources
a) BBC www.bbc.co.uk/videonation/articles/s/suffolk_communityliving.shtml b) Places of Worship pow.reonline.org.uk/res_key1.htm c) IPL www.ipl.org/div/hello d) Save the Children www.savethechildren.org.uk	Where do I fit in Key Stage 1 Focus: Geography, Citizenship Intended outcomes: a) Understand the meanings of the term 'community'; b) Have a sense of the range of groups and communities to which they belong; c) Understand why people join different groups; d) Understand how different communities are interdependent and linked across the world; e) Appreciate that they have responsibilities towards others in a beyond their own communities;

Figure 23 – Summary of the resources for the "Local well-being" doorway

Local well-being

Objectives	Drive	Guidelines
a) To convert schools into models of corporate citizenship, enriching their educational mission with activities that improve the environment and the quality of life of local people; Curriculum a) Cultivate the knowledge, values and skills needed to understand and address local issues and challenges;	a) "Parenting support", one of the five core elements of Extended Schools, offers opportunities to build bridges between schools and sustainable communities; b) Increasingly, the education system is focusing on the community as a key determinant of educational success. This means that community regeneration is as important as school improvement and development	N/A

Campus	in meeting the challenges of *Every Child Matters*;	
b) Consider the challenges facing their local surroundings and community, and identify areas where the school's decisions, practices and services can contribute to local well-being;	c) A 2004 study revealed that young people's well-being drops drastically at secondary school, with significant effects on their personal development. A focus on children's well-being should question the narrow focus on targets and league tables, and restore children's natural curiosity and enjoyment of learning a fundamental educational outcome.	
Community		
c) Use the communications, services, contracts and partnerships to promote awareness of local environmental and social challenge.		

Resources	Teaching Resources
N/A	N/A

Figure 24 – Summary of the resources for the "Global dimension" doorway

Global dimension

Objectives	Drive	Guidelines
a) To convert schools into models of global citizenship, enriching their educational mission with activities that improve the lives of people living in other parts of the world;	a) The UN Millennium Development Goals (2000) and the UN Convention on the Rights of the Child (1989) challenge schools to consider issues of children's health, safety, education and security not just in the UK, but around the world;	a) Explore local, topical issues from a global perspective;
Curriculum		b) Look for the global dimension in the way the school operates;
a) Cultivate the knowledge, values and skills needed to act as globally aware citizens, and reinforce this through positive activities;	b) More than ever before, the global is part of our everyday lives. We are linked to people on every continent. There is best practices that demonstrate a wide range of age-appropriate ways to prepare children and young people to	c) Find out what impact your school's buying has on other countries;
Campus		d) Use global teaching resources in delivering the curriculum;
b)Review the extent to which their management and		e) Find out about local and national support from other

| purchasing choices affect people and the environment globally;

Community

c) Use the communications, services, contracts and partnerships to respect for the well-being of other cultures, countries and the global environment. | be global citizens;

c) Schools should promote the understanding of the diversity of multicultural Britain as well as internationalism and global awareness;

d) The key enablers for global dimension education are creativity in teachers, suitable resources and supportive management. | organisations;

f) Consider linking your school to another operating in a different culture;

g) Make time for professional development and reflection;

h) Promote optimism and action. |

Resources	Teaching Resources
a) Think Global www.globaldimension.org.uk b) QCA www.qca.org.uk/qca_15333.aspx c) Schools Linking Network www.schoolslinkingnetwork.org.uk d) Department for International Development www.dfid.gov.uk/get-involved/in-your-school/global-school-partnerships/ e) Oxfam www.oxfam.org.uk/education/resources/milking_it/milkingit/information/the_issues/free_trade.htm f) People and Planet peopleandplanet.org/dl/ft14guide07.pdf g) Christian Aid www.christian-aid.org/learn/schools/simulation/index.htm	Trading Up Key Stage 2 Focus: Geography, Citizenship Intended outcomes: a) Have a basic understanding of how global trade works; b) Understand the history and significance of trade; c) Understand that trade links us with the wider world, despite physical, material and cultural differences; d) Know how trade benefits the prosperity of some countries and not others and that it is an important sustainability issue; e) Have considered the relationships between the producer, the consumer and trade; f) Know the difference between free trade and fair trade.

Besides the official documents, there were also a large number of NGOs, charities, companies and some schools and universities involved in delivering and developing the strategy. The main one of those was SEEd, a registered charity that identifies, promotes, enables and supports environmental education and ESD in the UK. It organises an annual 'Sustainable schools' conference and has been responsible for the dissemination of the strategy. Many other organisations (small and large) have been working with SEEd in this task, for example: WWF, Royal Society for the Protection of Birds (RSPB), ActionAid, Farming and Countryside Education (FACE), Waste Watch, Groundwork, Action for

Children, Carbon Trust, and Food for Life. It is estimated that over four hundred organisations and charities had been involved in the 'Sustainable schools' in its first four years of existence. (SEEd[61])

During its official existence (2006-2010) the strategy was supported by public funds but also by private funds, especially through grants and awards such as these:

- Salix Funding – uses public funds provided through the Carbon Trust for funding public sector bodies to improve their energy efficiency. The funding is provided in the form of a recycling fund through which savings made on energy bills are recycled back into the fund to be used again;

- Low Carbon Buildings Programme – offers grants to public sector and charitable organisations for the installation of heat generating technologies;

- Solar 4 Schools – was set up in 2008 by Solar Century to promote solar power in schools, since then the scheme has completed over 250 solar installations on schools across the UK;

- Links to Schools – provides support and funding to connect schools and their communities to the National Cycle Network. As part of Links to Schools, Cycling England has funded grants of up to £20K to contribute to the costs of cycle storage in eligible schools;

- Tesco Charity Trust – runs two funding schemes: the Community Awards proving one-off donations between £500 and £4000 to local projects that support children and their education and welfare, and larger grants of between £4000 and £25000;

- Learning Through Landscapes – has granted funding, usually sponsored by corporate partners (like the Royal Bank of Scotland or the National Lottery) to projects which improve the quality of school grounds, e.g. by encouraging the creation of school vegetable gardens.

With the election of the new government in 2010, the 'Sustainable schools' strategy ceased being part of the official discourse and all the documents and its official website were archived. In 2012, the Department of Education published a report called *Top Tips for Sustainability in Schools,* which stated:

> This collection of top tips suggests practical ways for schools to become more sustainable, should they choose to, whilst at the same time saving money (…) The Department of Education is committed to sustainable development and believes it is important to prepare young people for the future (Department of Education 2012:1).

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[61] Retrieved from: http://se-ed.co.uk/edu/sustainable-schools/

The document goes on to say that the government believes that schools should take responsibility for their own improvement and that sustainable development practices should be based on "sound knowledge and local needs" and that sustainability should not be centrally driven. The top tips are the same as those of the strategy's eight doorways, with some small changes and additions. However, the strategy itself is mentioned just as a reference that can be found on the SEEd website and not as the government's vision as before. The approach to sustainability has changed. The former government presented the idea by saying: "we would like every school to be a sustainable school by 2020", and it provided funds, resources and advice. On the other hand, the current government implies the decision to become more sustainable is in the hands of schools, however, most of the previous funds and resources are no longer available. The UK Government "withdrew central funding from the Sustainable Development Commission, which had the statutory remit of advising on all matters relating to sustainable development" (Martin et al. 2013:1533).

This can have two different interpretations, at least. The first possibility is that the incoming government disagreed with the way the former government interfered with schools, giving them specific guidelines, measures and deadlines to become more sustainable, encouraging instead a more school-based approach and a less top-down development of sustainability in schools; the second possibility is that, for the current government, ESD is not a priority and so there is no reason why there should be funds and resources allocated to this cause. In the latest report by the UK National Commission for UNESCO (2013:17) it is stated that "since the election in 2010, the government emphasis on sustainable development has been reduced" together with the interest by Ofsted in sustainability and ESD in the curriculum. For Martin et al. (2013:1534) this can be partly explained by:

> A degree of ambiguity about [i] what policy ought to be in relation to education and training more generally, and in particular, about what role they might play in supporting the emerging green economy; and because of [ii] the prevailing UK government view that supports smaller and less directive central governance, giving more responsibility to institutions at a local level. (Martin et al. 2013:1534)

Between 2006 and 2010, the 'Sustainable schools' strategy was promoted in England and schools were encouraged (by local authorities, NGOs, Ofsted) to either start their work on ESD or continue what they were already doing, using the eight doorways as guidance themes (DCSF 2010a). In response to the government's decision in 2010 to no longer support this strategy, SEEd and other UK organisations have been working together to keep the strategy alive (SEEd, online[62]). Central encouragement and legitimation are now much reduced

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[62] Retrieved from: http://se-ed.co.uk/edu/sustainable-schools/

(Martin et al. 2013). This reduced government focus on sustainable development has resulted in "increased uncertainties amongst educational institutions and practitioners about how much emphasis to place on sustainability" (UK National Commission for UNESCO 2013:19), adding further complexity to the teaching and learning of ESD.

4.4 – The relationship between the 'Sustainable schools' strategy and other schemes in the UK

There are a large number of recognition schemes and initiatives at a national level that could be used to develop ESD and support the aim of the 'Sustainable schools' programme, from the 'Healthy schools' programme to the 'Inclusion award' scheme. However, it is not easy to find joint information about the schemes and the links to each other. Some schemes are more popular and well-known than others, for example the 'Eco-schools' international award programme continues to grow in popularity and the number of schools register in the programme is very high. The latest 'Eco-schools' statistics show that 16,850 out of 24,372[63] schools in England are registered in the programme. London Borough of Southwark is the Local Authority with the highest percentage of schools register (96%) and nationally 1,745 schools have gained the top Green Flag award[64].

These schemes can be divided into two main categories: the first category is based on a recognition scheme and leads to an award or mark that demonstrates that the school has reached a high level of performance in the designated area (e.g. 'Eco-schools'); the second category is a competition-based scheme which offers a one-off award to a school with an outstanding performance in the selected area (e.g. 'School grounds' award) (DCSF, 2008c:3). Considering the schemes that reward progress across the whole school, and which are available to all schools nationally, DCSF published a report in 2008 to help schools identifying schemes that could be of assistance in the development of the eight doorways. The tables below consider, respectively the recognition schemes (Eco-schools; Food for Life partnership mark; Healthy schools; International schools award; RHS campaigning for school gardening; Rights respecting schools award; Royal Society for the Protection of Birds wildlife action awards), competition-based schemes (Ashden awards; Green schools awards) and the degree of association of each scheme to the eight doorways, according to DCSF (2008c).

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[63] Total number of schools in England according to the School characteristics statistical first release (SFR) (using January 2012 School Census).
[64] Retrieved from: http://www.keepbritaintidy.org/ecoschools/aboutecoschools/ecoschoolsstats

Figure 25 – Example of the different recognition schemes and their contribution to the doorways according to DCSF

	Food and drink	Energy and water	Travel and traffic	Purchasing and waste	Buildings and grounds	Inclusion and participation	Local well-being	Global dimension
Eco-Schools	MEDIUM	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	LOW
food for life PARTNERSHIP	HIGH	LOW	LOW	HIGH	LOW	MEDIUM	LOW	MEDIUM
Healthy Schools	HIGH	NONE	HIGH	MEDIUM	NONE	MEDIUM	HIGH	LOW
International School Award	MEDIUM	MEDIUM	MEDIUM	MEDIUM	MEDIUM	LOW	LOW	HIGH
(RHS)	HIGH	MEDIUM	NONE	MEDIUM	HIGH	HIGH	MEDIUM	MEDIUM
unicef	MEDIUM	MEDIUM	MEDIUM	NONE	MEDIUM	HIGH	MEDIUM	HIGH
RSPB	MEDIUM	MEDIUM	MEDIUM	NONE	MEDIUM	HIGH	MEDIUM	NONE

	Food and drink	Energy and water	Travel and traffic	Purchasing and waste	Buildings and grounds	Inclusion and participation	Local well-being	Global dimension
The Ashden Awards	LOW	HIGH	LOW	NONE	MEDIUM	LOW	MEDIUM	MEDIUM
	LOW	NONE	MEDIUM	HIGH	HIGH	MEDIUM	MEDIUM	MEDIUM

Source: DCSF 2008c

Looking at some of the schemes selected by DCSF, it is possible to see, for example, that the 'Eco-schools' programme, the most popular scheme among schools, match quite well with several doorways. 'Eco-schools' nine topics (Energy, water, biodiversity, school grounds, healthy living, transport, litter, waste, and global citizenship) could be used to develop at least six of the doorways. Some other schemes are directed to specific areas, such as the 'Healthy schools' programme or the 'RHS Campaigning for school gardening' which match very well with two or three doorways but are not useful to develop others.

4.5– The place of ESD in the English National Curriculum

The English primary curriculum comprises the key stage 1 (Years 1 and 2) and key stage 2 (Years 3 to 6) for children from five to eleven years old. It is divided between statutory subjects – Art and Design, English, Geography, History, ICT, Mathematics, Music, Physical Education, Science; and non-statutory ones – Religious Education, Citizenship, Personal, Social and Health Education and Modern Foreign Languages.

Sustainable development was included in the revised National Curriculum for primary schools in England and Wales in September 2000 (DfEE/QCA, 1999). Before 2010 and the change of government, education for sustainable development was included in the section "Learning across the curriculum" (2007) with other topics such as Creativity, Financial Capability and ICT. It was defined in one paragraph as:

> Education that enables pupils to develop knowledge, skills, understanding and values to participate in decisions about the way we do things individually and collectively, both locally and globally, that will improve the quality of life now without damaging the planet for the future.[65]

In 2011 the Secretary of State for Education announced a review of the National Curriculum in England, stating that the review is considering which subjects beyond the key subjects, if any, should be part of the new National Curriculum from September 2014 (Department of Education, online[66]). At the same time, SEEd launched an initiative to create a sustainability curriculum, to help schools develop their local school curriculum.

> The National Curriculum is being slimmed down to represent a body of essential knowledge in key subjects. To complement the National Curriculum, all schools will be expected to develop their own school curriculum (…) As a collaborative project for the next 18 month subject associations, teaching unions, student unions, teachers, heads, NGOs, teacher trainers, universities, examining bodies will all work together to develop a sustainability curriculum for our students futures. (SEEd, online[67])

Although clearly influential, the national curriculum is becoming increasingly not 'national' in England, something that did not happen when the strategy was in vogue, however it is still considered the privileged way of delivering education in schools. The place of ESD in the national curriculum is yet to be defined; and not only the place but also the way it will be integrated into schools' everyday life. As stressed by Sterling (2001:34) there is a range of educational responses to sustainability: education *about* sustainability, education *for* sustainability and education *as* sustainability.

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[65] Retrieved from: http://curriculum.qcda.gov.uk/key-stages-1-and-2/learning-across-the-curriculum/education-for-sustainable-development/index.aspx
[66] Retrieved from: http://www.education.gov.uk/schools/
[67] Retrieved from : http://se-ed.co.uk/edu/sustainable-schools/sustainability-in-the-curriculum-campaign/

Education *about* sustainability incorporates sustainability concepts in different subjects and it is mostly about knowledge transmission and content (assuming that "we know clearly what sustainability is about"). Education *for* sustainability involves knowledge but also values and the idea of "learning for change" (assuming that we know "what values, knowledge and skills are needed"). Education *as* sustainability may be described as "learning as change" and emphasises the idea of process and the quality of learning, "which is seen as an essentially creative, reflexive and participative process".

4.6 - Reflections about the "Sustainable schools" Strategy

After looking at the context where the strategy emerged and its main characteristics, I will now deconstruct the idea of 'Sustainable school' proposed by the Government and look at the assumptions, processes, outcomes and assessment tools suggested by the strategy, key steps to understand any (educational) policy in general.

The strategy wanted every school in the UK to be a 'sustainable school' by 2020 to "reorient existing education to address sustainability", one of the four ESD thrusts identified by UNESCO in 2006. Designed around the concept of care and using the eight interconnected doorways as a way of embedding sustainability into three major areas of schools' life – the curriculum, campus and community-, the 'Sustainable schools' strategy intended on the one hand, to reduce the impact of schools on the environment and to have schools supporting national priorities of sustainable development and local well-being; and on the other hand, it aimed to promote ways of thinking and behaviours that could lead to a healthier, more inclusive and fairer world.

Looking at these two aims one can differentiate between educational, material and social outcomes that could emerge from the strategy. In all the doorways it is possible to find these different types of desired outcomes, since the strategy gave suggestions on how to develop the buildings and grounds of schools incorporating sustainability features, and also on how to develop links with the community and the curriculum. If children "are to become part of the solution to the challenges, like climate change, not part of the problem" (DCSF, 2008c), there is the need to provide children with new skills such as critical thinking, real problems approaches, informed choices through participation, systems thinking and action learning; to improve schools efficiency; and to encourage positive changes in the community.

So looking at the first doorway, 'food and drink', as an example, some of the sought educational outcomes were to raise both awareness about healthy diets, sustainable and ethically produced food. The material outcomes were, according to DCSF (2008c), to save water, reduce food waste and packaging, and improve the school grounds. The social outcomes were related to supporting local producers and suppliers providing local food and drink. A sustainable school should consume less, produce less waste, implement good habits,

promote health and well-being and involve the community in this process, key ideas stressed in the documents of the strategy.

If one tries to visualise a 'sustainable school' proposed by the strategy like an 'ideal type' something like this emerge in my mind: a school which has eco-features in the building and grounds (e.g. solar panels, rainwater harvesting system), green spaces and outdoor activities, pupils that cycle or walk to school and that have healthy meals, links with local community and schools in other countries, and a curriculum that uses all these characteristics to teach the various subjects and raise awareness about sustainable development. In the figure below the school itself it is barely observable with all the other pictures surrounding it and that is intentional, to demonstrate three things: 1) the amount of different things the strategy asked to schools; 2) the activities that are most visible and emphasised by the strategy; 3) the diversity of features and activities that can be seen as ESD.

Figure 26 – Visualising a 'sustainable school'

Reflections on the different desired outcomes lead us to discussions about the balance between the contribution of schools to sustainability and children's learning. The first five of the eight doorways have material outcomes attached, and are deeply connected to saving resources and improving the school buildings in order to reduce its impact on the

environment, as well as to set an example to staff, pupils and the community in general. Although the strategy stressed clearly that those improvements should be achieved involving the whole school and the children directly in the activities, this articulation is not straightforward and demands knowledge, time and skills to link curricular subjects and extra-curricular activities to the achievement of 'sustainable' material outcomes in schools. Or as Scott (2009a) stresses:

> The fact that the school sector's direct greenhouse gas emissions, at 2%, is a small part of the UK's contribution is no reason to ignore it completely. It is, however, an argument for being very clear how every attempt to reduce carbon use, whether through good design, waste reduction, smarter procurement or energy savings, can be linked to opportunities for student participation and learning, and the practice it affords in their making real-life decisions. (p3)

The key argument in Scott's quote is that, since schools are primarily educational institutions, all the efforts to make them more sustainable have to support the learning of all those involved in the process, and not merely focus on reducing its environmental impact. As stressed in chapter one, the carbon footprint of schools involves more than direct carbon emissions, therefore, efforts to make the buildings more efficient and less wasteful can potentially have little impact on its total emissions. A stronger argument to invest in the building and grounds of schools, I believe, can be presented by focusing on the fact that these changes can provide an example for pupils and staff and encourage habits and behaviours concerning saving energy and water or looking after the grounds, while at the same time the curriculum can be enriched with experiences that arise from these activities.

Frequently, policies are designed to steer actions and behaviours, to guide institutions in a certain direction (Rizvi & Lingard, 2010:8). However, as stressed by a number of authors (Dressel 1979; Birney & Reeds 2009; Stables 2010), it is not possible to know exactly what kind of skills, knowledge and behaviours we need to deliver a just and sustainable society, so an important role of ESD should be to build pupils' capacity to think systemically, critically, to participate, dialogue and take decisions. The understanding of sustainable development and how a sustainable society could look like is not yet fully comprehended, and will differ from one community and context to another, therefore the focus on the process seems even more important (Shallcross et al. 2006).

Vare & Scott (2007) argued that it is useful to think about two complementary approaches to any ESD: an approach that provides guidance about behaviours, shifts in habits and ways of thinking about how we live now, tending to be content-focused and grounded in everyday practice; and an approach that builds pupils' capacity to think critically and develop capacities to make choices in the face of complexity and uncertainty of the future, tending to be more dialogue and debate-orientated around controversial issues (Scott 2011:7).

The way the 'Sustainable schools' strategy was designed could enable the development of these two approaches, however, the guidance provided to implement sustainable features across the curriculum, campus and community is far greater than the one concerning debate and critical thinking around the topic. For instance, Foster (2001) talks about deep sustainability stating that it is not a "measurable condition or trend, but a particular way of being humanly alert and alive through the world" (p.160). Education *as* sustainability can then be understood by undertaking living *as* learning, moving away from the tendency to concentrate on operational sustainability. This perspective, however, poses serious challenges for schools, as discussed in the previous chapters.

The idea of doorways, although subject to criticism mainly due to the risk of encouraging a fragmented vision and approach to the topic (Scott 2009b:1), could provide a helpful and effective tool in enabling schools to develop sustainability. The eight doorways, once embedded in the curriculum, campus and community, covered a good range of environmental, societal and economical aspects, nevertheless it is worth asking, as Scott (2007) stresses, why eight doorways and why these eight? There are a number of other doorways that could be considered and integrated in the strategy and that were marginalised. The most obvious one is biodiversity. It is clear in many reports that biodiversity is an important way to engage pupils in ESD and it is a frequent topic in schools. In the consultation paper about the strategy (DfES 2006a), there were strong statements of the consulted schools' staff about the importance of biodiversity:

> We feel this essential value of biodiversity and interdependence should be made much clearer and given greater prominence.

> The document needs to make clearer the links between sustainability and the protection of biodiversity. (DfES 2006a:22)

A number of environmental organisations and local authorities also asked for greater recognition of biodiversity within the doorways or even a dedicated doorway, and DCSF reassured that biodiversity and the conservation of the natural world was one of the main motivations of the strategy, however felt that the existing doorways "already capture this opportunity for schools" (DCSF 2007c:23). This argument did not convince many people, like Goodfellow & Andrew-Power (2007:26) highlighted saying that the lack of such a doorway marginalises a significant section of the curriculum (Biology) and the work coming from Environmental Education tradition. Learning about biodiversity is "highly compatible with environmental education as a continuous learning process that enables participants to construct, critique, emancipate and transform their world" (Weelie & Wals 2002:1154). Higgins (2009), states that "young children see no subject boundaries; an event may involve a verbal, visual, auditory, or tactile encounter, or a mixture of these" (p47), highlighting the

importance of experiential education for addressing environmental issues by developing understanding, attitudes, emotions, skills and knowledge "that can make a unique contribution to dealing with these issues" (p.57).

The manifesto for learning outside the classroom (DfES 2006b) states that "the use of places other than the classroom for teaching and learning" contribute to education because "these, often the most memorable learning experiences, help us make sense of the world around us by making links between feelings and learning" (p3). Outdoor learning can provide these experiences and have an important role in increasing the awareness and links with nature. Weilbacher (1993) argued that individuals will only miss a species if they know it and have developed a relationship with it.

Another aspect left out of was the seven key concepts of ESD (Interdependence; Citizenship and Stewardship; Needs and Rights of Future Generations; Diversity; Quality of Life, Equity and Justice; Sustainable Change; and Uncertainty) that were set out in the Holland Report (1998). This was not without criticism, especially when those key concepts could be used to conceptualise the teaching of sustainability (Scott n/d: 6).

The eight doorways reflected, somehow, the basic concerns of sustainable development. However, they did not consider the complexity of it, as described in the previous chapters. Development and, even further sustainable development, are 'value' words, which have embodied ideas, values, objectives and aspirations about the desirable society.

Among the eight doorways there are also some inconsistencies, for example, some of them presented clear guidance and resources, while others, such as "Inclusion and participation", and "Local well-being", did not. The "knowledge, values and skills needed to address each of the doorways issues" are also mentioned, but there is no guidance on what these might be. Under campus and community the focus seems to be making schools more environmentally and socially responsible, but the economic and political references are much weaker (Huckle 2008). These can be seen as a way of saying that some of the doorways are more relevant than others from the 'Sustainable schools' perspective or that some are easier to translate into practical activities and measurements than others. I believe it is a mix of the two things. As mentioned in chapter one, the UK Government and different NGOs, schools and parents had their own agendas and priorities concerning, for example, the promotion of healthy lifestyles and healthy food, the reduction of energy and water consumption, therefore some of the doorways served as umbrellas where all those activities could be developed further and justified under the name of ESD.

It was expected that each school took its own path and strategy to develop the eight doorways, despite the standardised guidance and activities suggested. The context, schools' location, teachers' skills, number of pupils and leadership are variables that could influence

greatly the development of sustainability in schools and it is worth investigating to see if the strategy takes into account differences/similarities between schools.

A National College for Teaching and Leadership (NCSL) survey (2007) revealed that there is a tendency in schools to develop certain themes more than others and that the existence of common traits and features is frequent, regardless of the different contexts. The survey divulges that "all eight doorways themes were felt to be relevant to sustainability. Energy and water were rated most important (approximately 80%), and global dimension was the least (approximately 40%)" (Jackson 2007:36). Even if the engagement with local problems is seen as more effective to teach ESD, it can be hard to see what is near. As there is the need for the teacher to know the 'local', instead of delivering the 'pre-packaged' teaching material, and it can be also difficult to work with controversial local issues, such as discussing over-fishing in a school that is part of a fishing community (Schnack 1998). This can be one of the reasons why the "Local well-being" doorway is less developed. The other reasons, I would argue, are related to the complexity of concepts such as local well-being which cannot be put into practise with simple measures and that are sometimes out of the reach of schools' responsibilities and authority.

According to the schools that answered the NCSL survey, "Energy and Water", "buildings and Grounds" and "Purchasing and Waste" were identified as the most important themes to make schools more sustainable. However, less than 15% of the schools felt these areas to be already satisfactorily in place, as illustrated by the graphic below. The frequent association between sustainability and the material aspects of the school buildings and grounds is somehow an alert to policy makers, educational practitioners, and academics alike. Since the *Brundtland Report* there has been an emphasis on the idea that sustainable development and consequently education for sustainable development should include the three pillars of development and not only the environmental aspect of it, however, it seems that in practise this idea is translated mainly into activities to reduce the use of resources and increase the use of the outdoors.

Figure 27 – Sustainability areas already satisfactorily in place in primary schools
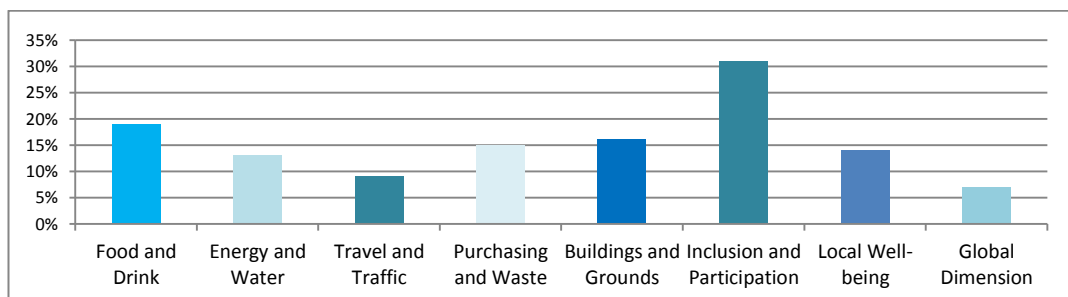
Source: Symons (2008:19)

The emphasis on some of the doorways and in some activities within each doorway (e.g. "Food and drink" – healthy diets; "Purchasing and waste" – recycling; "Buildings and grounds" – growing food) can also be explained, as mentioned before, by the greater interest that external actors have in those aspects. This reveals, to some extent, the way schools tend to reproduce social trends and the way national priorities and NGO's agendas are embedded in schools and 'transformed' into ESD. Huckle (n/d) states that "curriculum policies relating to ESD are essentially rhetorical devices that are readily assimilated into dominant economic and educational discourse" (p.6), making others aspects of ESD, namely critical thinking, systemic thinking, or creative thinking, almost forgotten and blurred in the pursuit of the more 'visible' aspects of sustainability. Scott (n/d: 4) stresses that the language of the framework is already familiar to schools and that it matches with many recent policy foci (citizenship, school meals, climate change, etc.). However, if the less visible aspects of sustainability are not explored and addressed than it may be said that the strategy will not bring a big difference over what schools were already doing. As a consequence, and given ESD's open nature and vague definition, ESD could be seen as 'anything and everything'.

> There must be more to it than this, otherwise schools can just carry on what they do now. For example, there has to be a difference between, on the one hand, addressing each doorway trough the curriculum (the easy bit),   linking this with purposeful activities in the school and community with tangible pay-back through, for example, lower water bills (more difficult to do) and on the other to have all this lead to student capability to respond to the challenges everyone will face in sustainable development (the really hard part). (Scott n/d:5)

Having these considerations in mind, questions about assessment start to emerge. As Rein (1983) argues, the clarity of the goals and their potential for effective implementation, together with the complexity of the envisaged execution strategy and the funding allocated, are three factors which can significantly affect the likelihood of the implementation of any policy.

Considering this strategy in particular, and the fact that it was voluntary for schools, the measurement of the schools' performance was completed using a self-evaluation form. This evaluation was done by the schools, in the schools, when and if they wanted. It was not compulsory and the 'Sustainable schools' strategy did not request these assessment forms from the school. Two aspects were evaluated: the progress under the six Ofsted SEF headings, and the progress with the eight doorways of the strategy. The former comprised six dimensions of school performance and improvement (1 – Characteristics of the school (example below); 2 – Views of learners, parents/carers, community and other stakeholders; 3 – Achievement and standards; 4 - Personal development and well-being, 5 – The quality of provision; 6 – Leadership and management) assessing how sustainable development was

supporting the school improvement in the areas of interest of Ofsted, as exemplified in the figure below.

Figure 28 – Example of one of the entries of the 'Sustainable schools' self-evaluation form

Source: DCSF 2009c

The progress with the eight doorways of the strategy assessed how schools were supporting national sustainable development priorities, as shown in the example below.

Figure 29 – Example of one of the entries of the 'Sustainable schools' self-evaluation form (b)

Source: DCSF 2009c

Despite the allusion to the role of ESD in the achievement of the official targets and improvements set by Ofsted, there are many voices highlighting the difficulty of articulation between ESD and academic results, which are the main factors used to measure performance and ranking schools in England. Also the lack of recognition schemes or awards, such as the Green flag of 'Eco-schools', and the long-term development proposed, 2020, seemed to discourage many schools, since they are less familiar with this concept of assessment. In the DfES (2006a) consultation paper, these concerns are visible:

> The 2020 timeframe of sustainable schools is so far ahead that, in this world of 'satisfying immediate priorities' and 'initiative overload', there is a danger that becoming a sustainable school could be relegated to the bottom of a pile of increasing priorities. (DfES 2006a:6)

> Ofsted and the wider community must acknowledge the value that a sustainable school has whatever that school's academic results. (DfES 2006a:11)

There is also the argument that "more individualism resulting from more testing and increased competition between schools erodes the principle of caring for one another" (Huckle 2010:5), the key idea behind the strategy. Modern education is associated with personal advancement and the promotion of economic growth, so education may actually be part of the problem (Shallcross et al. 2006). Nevertheless, there are also voices arguing that ESD can be used to raise standards and should not be seen as an extra task, an extra subject, an extra activity, but the "frame of mind" that organises the entire school (Bonnet 2002).

The way ESD is thought, seen, designed and implemented have an impact on the outcomes and achievements and that is why it is important to understand what is the place of ESD in schools, what are the motivations and interpretations of staff about it, what are the resources used and time dedicated to it, what are the activities promoted and the links with the curriculum and creative/critical thinking.

In saying so, it is worth to ask, ultimately what kind of ESD the strategy suggested. What kind of involvement and deepness it expected from schools? Was the target of the strategy to have a large number of schools in the starting point or a smaller number of schools in an 'outstanding' level? Was the strategy interested only in how many schools have recycling bins, farm animals and gardens or it was also concerned with how these things were used, how often, by whom and why? This discussion brings us back to the greater debate around ESD, examined in the previous chapters, and how it can be seen as 'business as usual but greener and fairer', being primarily understood as instrumental and concentrating on individual responsibilities and choices (Webster & Johnson, 2008:123).

It is clear that our economic, social and educational model contradicts in many aspects with the demands of ESD. Taking into account that "schools cannot be part of the solution with the same kind of education that helped in the creation of the problem" (Orr 2001), the

strategy's suggestion on "thinking and working in a profoundly different way" collides with the dominant processes of teaching and learning, and with the current development model. The 'neo-liberal' view of education is widely promoted by most intergovernmental institutions embraced by national systems (Rizvi & Lingard 2010:22). Porrit (2008) says:

> Unless we change some of the dominant assumptions that underpin our model of progress and economic development, the current 'reforms' we're introducing (invariably on a 'too little, too late' basis) will never do anything than slow the pace of destruction. (Porrit 2008:6)

So, it is legitimate to ask whether, ultimately, it is possible to teach ESD in an 'unsustainable' society; whether we need to have sustainable schools in order to prepare children to live more 'sustainably'; if schools need to practice what they teach or it should be common to "pupils to accept that expressing concern about the environment, while failing to introduce sustainable practices, is normal adult action"? (Shallcross et al. 2006). It is also legitimate to ask whether these schools can make a difference without the shift of the current development paradigm; if we will wait for the next generation to live with less, consume less and waste less; if we want schools (and societies) to be 'sustainable' or less unsustainable; and if we want them to be 'sustainable', what can/should we, as a society, be doing now and in the future?

As discussed in the previous chapters, these rhetorical questions shape the way ESD is taught, learned, and understood. They shape the projects developed, the intentions behind those projects and the potential outcomes. They reveal the complexity of developing ESD and more importantly, these questions highlight the difficult social, political and cultural context in which schools operate and how that context can influence ESD practices and results. As stressed by Sterling (1996), all education takes place within a dominant cultural, social and political context, and so any discussion of ESD must recognise the greater influence of the dominant social paradigm, which makes little or no acknowledgement of the sustainability challenge. This raises the question of how far education can contribute to the expected changes, or whether it is necessary controlled by the surrounding culture.

As stressed by Rizvi & Lingard (2010:5) policy purposes and goals are not always achieved in practice, because there are already organisational arrangements and existing practices that influence and change the implementation of the policy. The data collected in this research is going to be analysed in the next chapters. I will then address these questions and will compare the policy goals and objectives with the schools realities and agendas.

Chapter 5

Research findings and analysis of English schools

In order to explore the complex relationship between sustainable development and schools, this chapter will present the main findings of the research by analysing how sustainable development is influencing schools' practices and how, in turn, schools are assisting sustainable development goals. In doing so, it will highlight the main arguments for having ESD activities in schools but will also look at the breaches, problems and contradictions within this relationship.

The chapter aims at clarifying the kind of practices developed by primary schools in England concerning ESD. These practices are influenced by different factors that combined with each other shaped the way ESD is designed, interpreted and assessed. Developing specific aspects of ESD in schools, spending more time with particular activities and emphasising certain values and attitudes can certainly have an impact on the future, however, it is important to understand both what kind of impact we are expecting to achieve with those and the factors that can influence the potential outcomes. 'What does one want ESD for?' This is again the crucial question that will be addressed in this chapter to explore the way the purposes, practices and expected outcomes of ESD are linked together.

There are several points that were discussed in the previous chapters and that will guide the analysis of the findings in this chapter: the extension of schools' concerns over their environmental impact and the measures taken to reduce it; the priorities regarding ESD (e.g. to have more eco-features, to enrich the learning experiences, or to improve the relationship with the local community and promote inclusion and participation); the way ESD is articulated and influenced by broader sustainable development goals and policies; and the way the practices are chosen, implemented and assessed, or what the main factors shaping the development of ESD in schools are.

The chapter is an attempt to disclose the complexity of developing ESD in schools and the quantity and diversity of factors (e.g. external agendas, resources available, context, personal interests) that influence these practices. After trying different combinations and possible ways of presenting and discussing the findings, I decided that it was only by providing a sort of layer-based structure that these factors could be revealed and analysed. Therefore, the chapter tries to cover the whole process of the development of ESD, from the design to the assessment, but also to present a full image of the practices found in the schools.

Given the complexity involving sustainable development and ESD, and in order to provide a more fluid argument, the data of the five case-study English schools and the data from the English questionnaire were summarised and aggregated in themes. The results from the

different sources are not presented in separate but are rather mixed together under specific topics. After numerous tries, this way of introducing the results seemed the most appropriate given the 'messiness' involving the research object. The most traditional way of presenting the results (where each case is discussed in turn with general findings) did not seem to work in this case, since it would lead to a more 'mechanical' discussion and the purpose of the exercise was to focus on the themes that emerged from the analysis and not in the different schools as such. These themes are conveyed in the five sections of the chapter: a) ESD practices found in the schools; b) intentions and purposes of developing ESD in the schools; c) factors that influence the development of ESD in the schools; d) assessment and expected outcomes; e) limitations of schools in delivering ESD. These themes were selected based on the purposes of the research, reinforced by the topics that emerged during the coding process of the data collected[68].

Throughout the chapter I introduced several quotes from the interviews, material from the field diary, information from the schools' documents and data from the questionnaire. These materials were selected mainly to back up the argument in question, however, there is always a certain degree of arbitrariness in the way the data is selected. In this case, I always included data from the different schools in order to have a more robust argument. I also paid attention to the fact that I have more material from some schools than others and so most of my arguments are built using the data collected from the schools I spent more time in (Peace, Green and Outdoor schools) and where ESD is more developed, using the data from the other two schools (Energy and Multicultural schools) mostly as supporting material. The questionnaire data was always used as complementary evidence, to support and illustrate some of the findings of the case studies, given the nature of the study, exploratory and mainly qualitative.

As stressed in chapter three, the intention of the research is not to generalise the results, but rather to provide an in-depth analysis of the factors influencing the development of ESD in schools, contributing this way to a better understanding of the limitations of schools in developing ESD and in contributing to sustainable development goals. Therefore, the presentation of the data collected and the subsequent analysis were organised with the purpose of revealing the web of interactions between the different factors influencing the development of ESD in schools.

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[68] As stressed in chapter three, the data analysis process used the NVivo software as a support to investigate further the words and themes most commonly used by the participants and to explore some of the connections between themes, people and schools.

5.1 Practices of ESD

The ESD practices I found, in both the case studies I visited and the questionnaire answered by English schools, vary according to the location, visibility, duration, number of people involved, and type of activities developed. As an analytical choice the practices will be divided into three main areas – material, educational and social – as a way of displaying the most common activities found in schools.

These three categories correspond to the three main areas ESD is usually divided into, as explained in my theoretical framework: the buildings and grounds in order to reduce the environmental impact of schools (material); the curriculum of the school in order to provide the knowledge and skills relevant to sustainable development (educational); and the links with the community in order to mould 'future responsible citizens' (social).

5.1.1 Material ESD practices

I identified material practices as those that are tangible and can be visualised and quantified. These practices are developed mostly in the buildings and grounds. The next table provides a summary of the schools' main physical attributes that can be related to ESD[69].

Figure 30 – Summary of the material ESD practices in the five case-study schools

		Peace School	Green School	Outdoor School	Energy School	Multicultural School
Building	Eco-building;	x	x			
	Solar panels;	x	x			
	Natural light/ventilation;	x	x	x		
	'Green' materials;	x	x			x
	Reduce energy/water consumption;	x	x	x	x	x
	Recycling bins;	x	x	x	x	x
	Turn-off appliances;	x	x	x	x	x
Grounds	Allotment;	x	x	x	x	x
	Vegetable plots;	x	x	x	x	x
	The grow of vegetables;	x	x	x		
	Secure bike storage;	x	x		x	x
	Compost bins;	x	x	x	x	x
	Flower gardens;	x	x	x	x	x

These attributes derived from the activities proposed by the "Sustainable schools" strategy and the projects developed in the schools and described as ESD.

Outdoor classroom;	x	x	x	x	
Wildlife area;	x			x	
Insect hotel;	x	x			
Pond;	x	x			
Bird feeding platforms;	x	x	x	x	x
Woodpile;	x			x	x
Farm animals;		x	x		
Orchard;		x	x	x	x

There are many similarities between the five schools considering these material practices. All of them have developed the grounds for having outdoor activities with vegetable plots and allotments (see appendix 1 - photos 2 & 3); wildlife areas with a pond in Peace and Energy Schools (photos 4 & 5); outdoor classrooms in three of the schools (photo 6) and under construction in the other two; orchards in all the schools; an insect hotel in Peace School and a ladybug hotel in Green School (photos 7 & 8); bird feeding platforms in all the schools, wormeries, farm animals (photo 9), compost bins, and different types of gardens (e.g. Labyrinth garden in Peace School – photo 10); a sensory garden and a wildflower garden in Green School; and a peace garden in construction in Multicultural School. One of the headteachers told me that gardens have different purposes and she has plans to develop different gardens in the school. So for example, the labyrinth garden was designed as a place that should be used to think and relax, while the sensory garden in Green School was designed for the smaller children with a great variety of plants and flowers to encourage contact with nature through different colours, smells and textures.

In fact, the existence of similar features in the school grounds but with different intentions and purposes is one of the key findings of the project. All the schools I visited have gardens, for example, but the fact that there is a distinction in the type of gardens they have and in the intention they were built to serve, demonstrates that the apparent similarity between ESD features, contrasts with the diversity of uses and intentions of the different people involved as I am going to discuss during the chapter.

All the schools have regular projects to encourage pupils and parents to walk or cycle to school, such as a walking bus; a walking or green passport where children gain points for walking and can then exchange those points for rewards; and cycle lessons and secure bike storage (photo 11). The same can be said about recycling and reusing. All have recycling bins and have numerous initiatives to promote the recycling of materials and the use of recycled materials. There are also some initiatives to diminish the consumption of paper. These initiatives are described by the teachers and announced on the website of the schools (e.g. Peace School uses the parent e-mailing system instead of the normal weekly or daily letters; Green and Energy Schools have online newsletters). There are also initiatives,

diffused by posters, signs, newsletters and campaigns, to promote recycling (e.g. photo 12) or to recycle different materials (e.g. mobile phones, clothes, paper, cardboard - see Appendix 2 - figure 1). The use of plastic drink bottles, yoghurt pots, cereal boxes and other similar materials in art and design projects (photo 13) or the use of old tyres for growing (photo 14) and scrapstore goods for creative play is also common in some of the schools as options for promoting the re-use of materials and/or as a way of saving money.

Looking at the questionnaire, it is also visible that there is a certain level of resemblance considering the eco-features the schools have, as shown in the graphic below.

Figure 31- Eco-features of the schools as reported in the questionnaire[70]
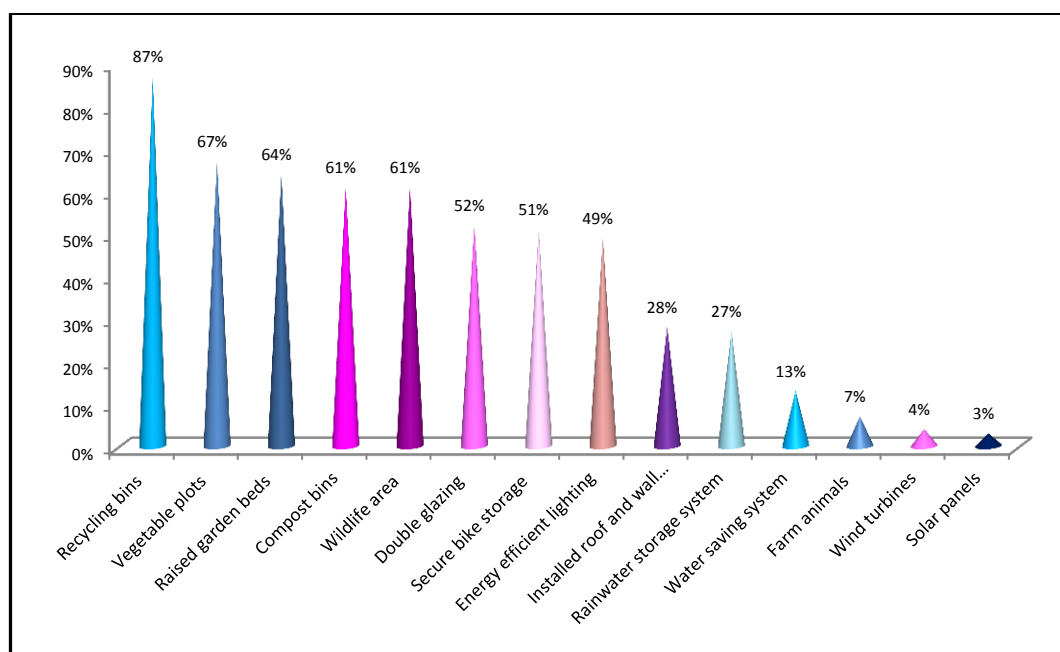
The most common features found in the schools that answered the questionnaire are recycling bins, with almost all the respondents (87%) reporting having them. Compost bins, vegetable plots, raised-bed gardens and wildlife areas are also found in more than half of the respondent schools. Features such as double glazing and energy-efficient lighting are also present in half of the schools, while others which demand larger financial investments, such as solar panels or wind turbines are present in less than 5% of the respondent schools. More structural features such as installed roof and wall insulation, water saving system or rainwater system are also less noteworthy, with percentages of 28%, 13% and 27% respectively. If one compares the eco-features mention by the schools with the general conditions of the schools' buildings and grounds, one can see that a large percentage of

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[70] The question asked the respondents to select all the features that the school have. The graphic illustrates the percentage of schools claiming that those features can be found in their schools.

respondents consider the existence of ecological design attributes to be poor (45%) and the overall 'greeness' to be fair (45%) or poor (23%), as shown in the figure below.

Figure 32 - Conditions of the school buildings and grounds as described in the questionnaire[71]

	Green areas	Interior rooms lighting	Classroom equipment	Toilets	Playground	Exterior walls insulation	Roof and windows insulation	Ecological design attributes	The overall 'greeness'	Green construction materials
■ Excellent	40%	26%	22%	20%	17%	14%	12%	9%	8%	6%
■ Good	34%	39%	60%	42%	42%	23%	25%	12%	25%	19%
■ Fair	17%	25%	15%	22%	37%	50%	34%	34%	45%	46%
■ Poor	9%	11%	3%	17%	5%	14%	29%	45%	23%	29%
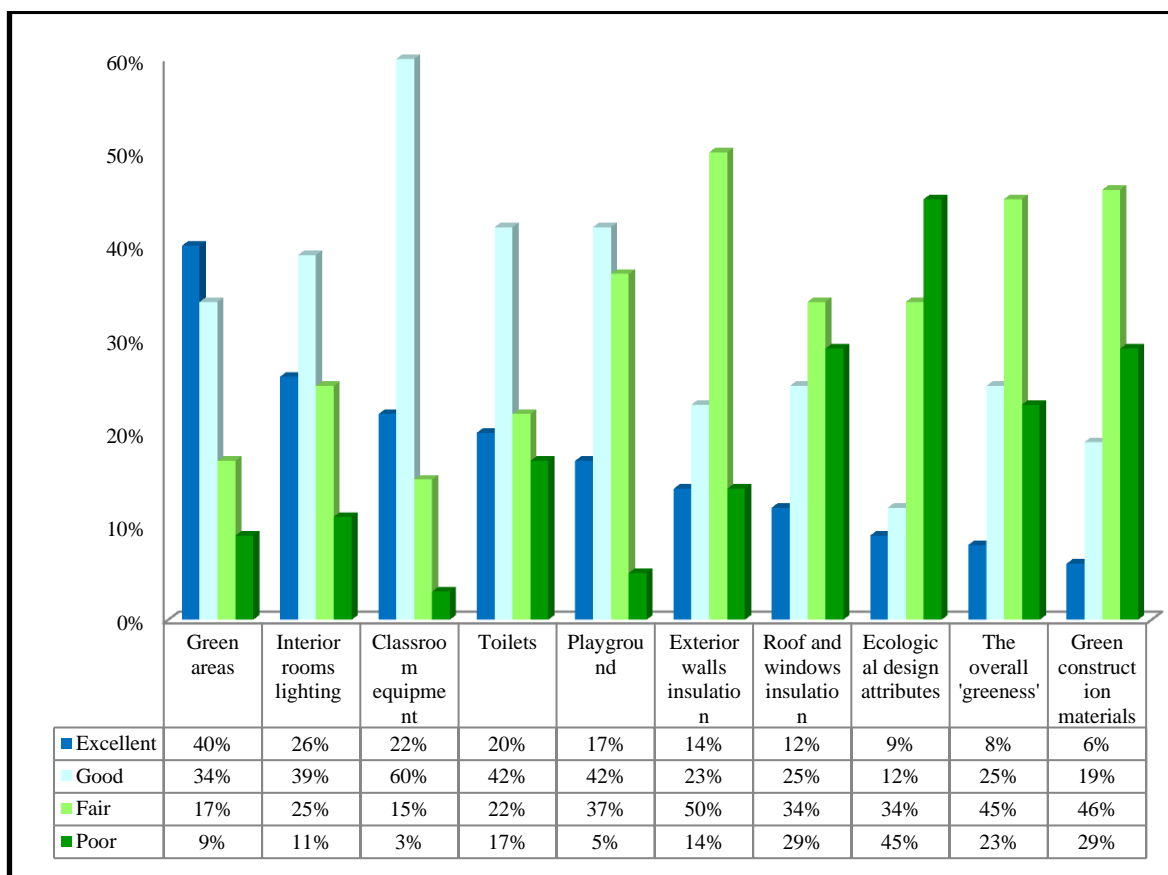
The data shows that when it comes to restructuring the building or using more environmentally friendly materials it appears that not all the schools are able or willing to do it. The majority of the questionnaire respondents considered the eco-features of the schools to be either fair or poor, with only 6% of the schools considering the use of green construction materials excellent and less than 10% considering that the ecological attributes are excellent (graphic above). Similarly, only two out of the five case studies, Peace and Green Schools built new building where eco-features and sustainable materials were considered (photo 15).

When it comes to investing in 'eco-features' it seems that the priorities are either the most visible attributes, which are also those that potentially allow the involvement of the pupils, such as vegetable plots or wildlife gardens, or smaller projects that are noticeable, yet do not have a large influence in the general performance of the buildings. State-funded primary

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[71] The percentage of schools that rated the different conditions of the school as excellent, good, fair or poor.

schools in England, such as the five schools I researched, have little control of the building, however, some of the schools were able to implement some measures in order to improve the performance of the buildings and grounds.

In five case studies there are some examples of specific measures and small projects related to the reduction of energy consumption or water saving, but they remain as accessory practices that do not change the structure or overall performance of the building (e.g. Peace School reduced the temperature of the buildings in 1c or 2c; Outdoor School has a rainwater harvesting system – photo 16; all the schools upgraded some of the boilers and Energy School also monitor weekly the consumption of energy in the school and achieved a base load of zero, when the school is not open – photo 17).

Two schools, however, when there was the construction of new buildings as an extension of the existing ones, could influence the council to consider environmental features in the project. Peace School has a new building that has cost around £3 million (2012) and that replaced the temporary classrooms. The building was designed taking into consideration sustainable and environmental solutions, with good insulation, ventilation and access to natural light in order to reduce the consumption of energy, according to the website of the school and the headteacher. Green School has also a new building that has cost around £3,5 million, which substituted one of the old buildings and was designed as an eco-building. It has solar panels, good quality insulation, is heated by a wood pellet boiler that reportedly retains a constant temperature and is ventilated automatically by a fully computerised system which opens and closes windows to let in fresh air (photo 18), according to a document available on the school's website. Rainwater falling on the building is collected and stored in large underground tanks and used for flushing toilets. A meter in the atrium records the amount of rainwater collected and how much of that water has been used (photo 19), providing visibility to the project and giving the pupils and staff the opportunity to participate. An adjacent display unit shows how much electricity is being used and how much power have been saved by the solar panels, which heat water for hand washing. These artifacts give visibility to the project and the opportunity for pupils and staff to engage with it.

5.1.2 Educational ESD practices

This section will present the main activities found in the different schools related to ESD in the curriculum in order to understand how the link between material features and educational practices is developed. The material features, exposed in the previous section, are also used to teach about curricular topics. In all the five schools some of these features are used to complement the information gave in the classroom, as a way of providing real-life experiences and first-hand practices.

By educational ESD practices I mean those that aim at providing to pupils knowledge and skills related to sustainable development. The relevance of looking at these practices is related with the need to analyse three key arguments: i) the benefits that, according to the literature, policy and educators discourses, ESD brings to education in the achievement of academic targets, pupils' good behaviour, self-confidence and knowledge 'for the future', in terms of opportunities for real-life experiences, more meaningfulness and relevant in the learning environment; or in terms of the diversity of activities and the motivation and enjoyment these activities entail; ii) the links between material features and educational practices, given the fact that the 'eco-features' are commonly used by schools to improve the educational experiences and not only to reduce the environmental impact of the school; and iii) the type of ESD principles most commonly found in the curriculum of the schools, with a stronger focus on the transmission of values, content and knowledge, or on the stimulation of creative thinking, problem-solving experiences and critical thinking.

The next table presents the activities found in the five case studies related to ESD in the curriculum. These activities are remarkably assorted and this demonstrates how ESD practices can be related to activities as diverse as food miles or African Workshops[72].

Figure 33 - Summary of the education ESD practices in the five case-study schools

		Peace School	Green School	Outdoor School	Energy School	Multicultural School
Planning	Lesson plan – energy (e.g. renewable energy);	x	x	x		
	Lesson plan – CO_2 emissions (e.g. food miles);	x				
	Lesson plan – food production (e.g. fair –trade products);	x	x	x		
	Lesson plan – inclusion (e.g. prejudice).	x	x	x		
Awareness	Visits to a local farm;	x	x	x		
	Posters and signs to turn off appliances, walk, recycle, etc.;	x	x	x	x	x

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[72] These categories were, again, selected based on the suggestions of the 'Sustainable schools' strategy and the ESD practices described by the schools.

	Links to NGOs;	x	x	x	x	x
	Visits to landfills;	x		x	x	
	Outdoors learning;	x	x	x	x	x
	Visits to places of worship;	x		x		
	Visits to local sites of interest;	x	x	x	x	x
	Village walks;	x		x		
	Links with other schools;	x	x	x	x	
	Weekly values themes (e.g. respect, friendship);		x			x
Special events	Zero waste week;	x	x	x		x
	Low carbon day;	x	x	x		
	Fair-trade fortnight;	x	x	x	x	x
	Human rights week;	x	x	x	x	x
	Guests from the community;	x	x	x	x	x
	African workshop;	x		x		
Extra-curricular	Gardening club;	x	x	x	x	x
	Cooking club;		x	x		
	Energy team;	x	x	x	x	x
	Road safety team;	x	x			
	Recycling team;	x	x	x	x	x
	Litter pick team;	x				
	Peace club;	x				
	French/Spanish/Chines clubs;	x	x	x		
	Forest Schools practice;		x	x	x	x

The inclusion of ESD in the curriculum of the schools is achieved through the development of different projects that, again, are similar in the five schools. However, there are significant differences in the degree of implementation and duration of the projects between the first three schools and the last two. Whereas Energy and Multicultural schools are just starting to develop curricular ESD, Peace, Green and Outdoor Schools already have in place an organisational scheme and an annual plan that covers the ESD activities for the school year.

Peace School, for example, because of the connection with the school in South Africa try to adapt some of the lessons and talk about that particular country whenever possible, to give the children an example they are already more familiar with,

> We have a link with Africa so instead of studying a village in India, which is on the curriculum we have substituted that for our twin, the area where our twin school is in Africa. So, we do the same type of study, but we do it… We sort of change that and adapt it, so it brings in relevance to what we are doing. (PHSE teacher, Peace School)

Geography and PHSE are the primary curriculum subjects with whom ESD has stronger links. Peace and Outdoor Schools' Geography policies stress the importance of the subject to mold 'future global citizens', to foster a sense of responsibility for the Earth and its resources, and to provide tools to question and propose solutions to environmental problems (Appendix 2 - Figure 2). This view of Geography as a vehicle to promote values and to induce a type of behaviour is highly criticised by some authors. Standish (2009:34) states that the subject is being utilised for "political objectives and imbued with extraneous morals". For Standish (2009), beneath the rhetoric of citizenship education lays a moral imperative, which does not allow students to develop their own ideas, values and perceptions about the current state of the world, since it presents the global issues in a simplistic way and without instilling the development of critical thinking and different solutions. This position relates to what many other authors have been trying to highlight about ESD, which is the need to promote critical thinking and not just present ideas and values as facts and truths.

There are also examples in other subjects such as in the History policy document of Peace school, which says that "History contributes significantly to the teaching of personal, social, citizenship and health education. They learn how society is made up of people from different cultures and start to develop tolerance and respect for others"; in Music where children learn a song called "Things that matter" (figure 3); in Mathematics where sustainability and energy efficiency are used to teach about data handling. At Green School, in literacy where the 'active learners' use the grounds of the school and the activities on the farm as a writing topic; in Science, the forest school work is used to teach about the reactions of the fire, water and wind, materials that melt and are reversible or irreversible when heated or cooled. In the Philosophy for children session, during my visit to Peace School, the group discussed about the 'Earth hour' using a WWF poster with an image of colourful lights on a black background and the sentence "Wear something bright, turn off the light!" (figure 4). The pupils came out with ideas about the poster such as: "If light can survive in the dark, can dark survive in the light?"; "Is the light more important than the dark?"; "How much difference does one hour make to global warming" and the discussion led to reflections about the importance of the light, the differences between lifestyles and how some people

save more energy than others, and if renewable energy could be better than non-renewable energy.

At Outdoor Schools, in Geography lessons, the visits to a local farm are used to learn about curricular topics. During my visit, the children played a game in the farm called the "Darwin trip" where they had to find clues and animals' pictures around the farm, learning at the same time more about Charles Darwin and his work (photos 20 & 21); or the visit to local sites of interest such as wildlife reserves or historical sites in order to engage pupils with local problems and to strength their connections to the local community; in PHSE lessons children learn about citizenship and are encouraged to take part in a range of practical activities that might promote citizenship, e.g. Charity fundraising (Energy School). At Multicultural School, in Literacy, Arts, Geography, History and Numeracy lessons, the rain forest was used to discuss themes such as biodiversity, the importance of the rainforest for the planet, fair-trade products and how what we buy and consume can impact in the way we manage the forests (figure 5); in Geography lessons the pupils learned about the oceans and fishing, and with the help of some resources from the Marine Conservation Society they talked about the differences between sustainable and non-sustainable fishing (figure 6).

The examples provided are good evidence of the different ways ESD is embedded in the curriculum of the schools. Due to its flexibility it can be adapted to almost any subject and developed through diversified activities, providing knowledge and skills about specific aspects. The quotes below illustrate some of these activities described by the staff of two of the schools[73].

> Many of the debates that we have, many of the creative writing is about how people are making their way into the world and how they affect it (…) Many of our curriculum topics have to do with that (sustainability). Our Geography topic at the moment is the mountain environment and we are looking at the effect of tourism in the mountain as good and bad: is it damaging the environment? Is it bringing money to the area? (Teacher year 6, Peace School).

> In Maths we were looking at data handling and collecting information and we decided to use sustainability and energy efficiency and the children generated their own questions to take home and use at home and question their parents and family, and they brought them back and then we used the data and we analysed the questions. We thought about sustainability issues based on those questions and then we just moved to the learning. After we've looked at the data we found all sorts of worrying issues that some parents were not interested in saving energy and didn't

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[73] As explained at the beginning of the chapter, I tried to use material from the different schools in order to provide a general idea of how ESD has been developed by the different researched schools. However, I am focusing mostly on the Peace, Green and Outdoor schools since those are the schools I spent more time in and where ESD has been developed for a longer time. In terms of the embeddedness of ESD in the curriculum of the schools, as I am going to discuss later on, there are significant differences between the schools and so the quotes above are only used to exemplify some of the ways ESD is addressed by some of the schools in the different key subjects.

see why they should save energy. So, we looked at some actions that children could do to change parental behaviour. (Year 6 teacher, Green School).

Beyond the development of specific themes and projects within the different curricular subjects, a large amount of ESD activities is developed through extra-curricular activities. Through modelling and regular actions that can become habits over time, schools involve the pupils as much as they can, especially with teams and clubs. The questionnaire illustrates how common it is to have clubs and teams in primary schools related to ESD, as shown in the following graphic.

Figure 34 - Pupils' clubs in the schools as described in the questionnaire[74]
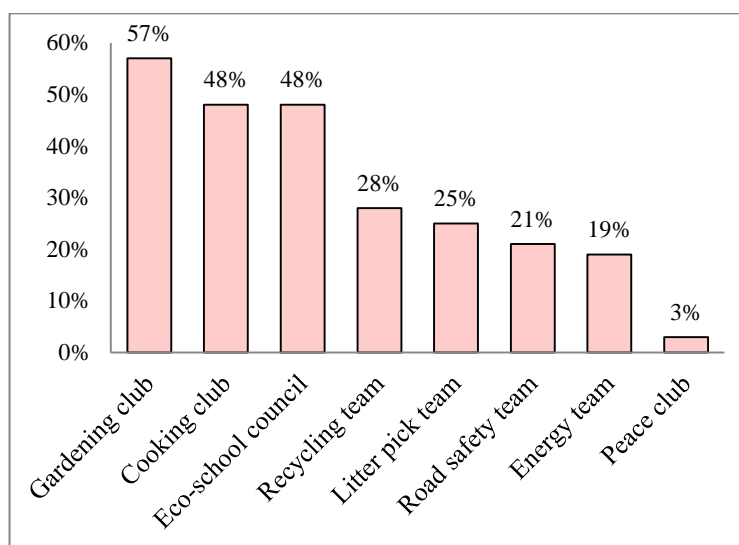
Most of the schools have one of more clubs for pupils, and the most popular ones are gardening clubs (57%), cooking clubs (48%) and eco-school councils (48%). Others, such as recycling teams, litter-pick teams, road-safety teams and energy teams are also mentioned by some of the schools, however less than 30% reported having one of those.

In the five case studies, the gardening clubs, recycling teams (figure 7) and energy teams (photo 22) are also amongst the most popular, but there is also room for clubs such as the peace club, where children explore the concept of peace and have activities, such as writing poems, singing songs, or playing games related with the topic (example figure 8) together with PHSE lessons, where children discuss about inclusion, prejudice and social differences (figures 9 & 10); the litter-pick team or the road-safety team, where initiatives which focus on carbon emissions are developed to raise awareness about the importance of reducing those emissions (figure 11) and to promote the walking to school habit.

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[74] In this question the respondents were asked to select all the clubs existent in their school and so the graphic shows the percentage of schools that reported having those clubs/teams.

5.1.3. Social ESD practices

By social practices I mean the links developed between the schools and the community. These links can be those developed by schools, like the provision of opportunities to the local community to participate in the school life or the use the school building for different purposes, or those developed by the local community, like the provision of resources and expertise to the schools. The table below summarises these practices.

Figure 35 - Summary of the social ESD practices in the five case-study schools

		Peace School	Green School	Outdoor School	Energy School	Multicultural School
School - Community	Charity fundraising;	x	x	x	x	x
	Volunteer opportunities;	x	x	x	x	x
	Adult courses;	x	x			x
	Community shop;		x			
	Special days (e.organic day);	x	x	x	x	x
	Campaigns;	x	x	x	x	x
	"Community hub";		x	x		
	Community work;	x	x	x	x	x
	Extended hours;	x	x	x	x	x
	Extra-curricular activities;	x	x	x	x	x
Community-School	NGOs resources;	x	x	x	x	x
	Volunteers;	x	x	x	x	x
	Places of interest;	x	x	x	x	x
	Training opportunities;	x	x	x	x	x
	Collaboration on projects.	x	x	x	x	x

It is a common practice in all the five schools to engage parents and the local community in the school life and to provide for the community other services apart from the children's education. The relevance of these findings is related to the image of schools as 'open-spaces' where the boundaries between school/education/community are less rigid and both pupils and the local community can benefit from this interaction, an argument present in the ESD discourses.

For instance, Peace, Green and Multicultural Schools provide courses for adults or classes for the community (e.g. IT, dance, fitness, etc., see figure 12) and all the schools offer volunteering opportunities for the community to help in the school work, either at lunch time, with the reading and Maths or in the grounds (figure 13). Other initiatives such as the 'Spanish night' or the 'International food night' in Peace School; the 'Organic day' or a 'French day' in Green School; and the 'Cake Sale' in Outdoor, Energy and Multicultural Schools are also ways to bring parents and carers to the school.

Some initiatives such as litter pick in the community (Peace School), visits to local sites of interest like farms, wildlife reserves, historical sites (Green and Energy School), or regular planting and maintenance of the village park (Outdoor School) are examples of how ESD activities can promote links between the school and the local community, providing at the same time a range of opportunities for pupils to participate, and develop the skills, knowledge or interest in learning and being socially active.

Green and Outdoor Schools seem particularly good in supporting the local community. Green School, maybe because of its location in a deprived area with low opportunities and poor facilities, is an important place for the whole community, and offers training opportunities for teachers, parents and governors, free adult education courses, an adult learning centre and a community shop. Outdoor School, also benefiting from its location in a small rural village, has a good relationship with the local community. Data from the school's website suggests that the school is committed to being a 'Community Hub', offering the school building to the community use, e.g. Parish Council meetings, local church and community group events. Ofsted reports (Green School 2009 and Outdoor School 2004) also stressed these characteristics:

> The school enjoys a good relationship with the parents and ensures that they are kept fully informed about what is happening at the school. The school supports the local community excellently. The partnerships the school has made with local extended services and the receiving school are outstanding. (Ofsted 2009:7)

> Links with the community are very good. The school has very successfully encouraged the involvement of the local community. The school values the involvement of the community in its work and developments. (Ofsted 2004:9)

Work with charities, charity awareness and fundraising for different charities are also common activities developed by the schools to promote pupils and parents/carers support and awareness of charity work and different causes the schools are involved in (figure 14).

This role of schools as social agents and community support is not new. As stressed by Austin, Dwyner & Freeboy (2003), during the twenty century schools took upon themselves increased responsibility for providing children with a sense of responsibility, personal development, mental and physical health, technical skills, cultural awareness and so on, but

the idea behind ESD and the 'Sustainable schools' programme stretched this role even further, expecting the schools to provide skills and promote attitudes not only related with the well-being of children but also with the well-being of the community, society and the planet.

5.1.4 Most common ESD practices and introductory explanations

Looking at the ESD practices described in the previous sub-sections, one can see that in all the three areas – material, educational, social – there are many differences, sometimes in specific features or practices and sometimes in the use, users, intentions or expected outcomes. These differences are going to be explored in later sections of the chapter by analysing the different factors that come together and influence ESD practices in schools. The data above, however, also points out the prevalence of similarities among schools. Next, I will summarise the most common practices found in the different schools and will introduce the factors that seem to play a role in developing ESD.

a) Development of the school grounds

The development of the grounds was the practice first mentioned in all my visits. Many of the grounds' features are standardised. For example, allotments and vegetable plots are found in all the five case studies and in more than 60% of the schools that answered the questionnaire.

The popularity of outdoor education, together with the long tradition of environmental education, with its roots in nature studies and outdoor experience, can partly explain why the grounds and the activities outside the classroom appeared to be so important for primary schools. The numerous NGOs providing guidance and resources to schools on how to transform the grounds into 'green learning spaces' (as discussed in chapter four), the emphasis on the protection of nature and the environment, and the popularity of the green agenda among primary schools are factors, I believe, that contribute to the emphasis on the development of the grounds and in the provision of outdoor education.

Another reason that contributes to the prominence of outdoor learning and the development of the school grounds is the fact that experiential learning is perceived as an opportunity for pupils to have a greater participation in the learning process, providing at the same time the opportunity to develop practical skills and a closer connection or understanding of the natural environment, as stressed by most of the staff I interviewed and in the different documents produced by the schools. Experiential learning is usually seen as an "approach to education that implicitly trusts the learner's ability to learn through experience" (Higgins 2009:45). According to Higgins (2009:45), in the UK, experiential education is closely

associated with outdoor education, since "many outdoor educators work experientially, and many experiential educators naturally use the outdoors."

Gardening clubs, forest school sessions, outdoor classrooms, and regular field trips are found in the different schools and are examples of the opportunities created by schools to provide contact with the natural world and bring the pupils to outside the classrooms.

The importance of the outdoor education is particular relevant for the research since it provides some insight about the relationship established in schools between outdoor education, environmental education and ESD. This relationship is visible in the efforts made by schools to develop the grounds and provide outdoor education to children; in the way schools presented to me their work in sustainability, focusing mainly on the grounds (being the first thing staff talked about when asked about ESD and one of the features I was always directed to, in all the schools I visited); and in the amount of activities available in the schools that are developed outside the classroom.

In the case studies, the outdoors is not only seen as a place where active lifestyles, survival skills or teamwork practices can be enhanced, they are especially relevant because they can supply the contact with the natural world and a meaningful connection with it, as shown in the quotes below, increasing the chances of having more pupils and staff aware of the needs and the interdependence of the natural world, promoting at the same time caring, respectful attitudes and motivation, and interest in the natural environment, according to the interviewees.

When the headteacher of Peace School stressed that "the aim of education is not just to learn facts but to learn values" and that the school decided to develop the grounds in order to extend children's general knowledge and connection to the nature, it was clearly saying that the outdoors have a purpose and that they can be used to teach about the environment but also to learn values/skills for the environment. This perception is shared by other schools as well, which see the interaction of children with the environment as a key element in the promotion of ESD. Some of the statements given by the staff of the different schools clarify the reasons why so much effort has been placed on the development of the school grounds,

> I grew up having regular contact with the natural environment and I believe that experience shaped my way of seeing the world and my love for nature (…) I think it is very important to provide first-hand contact with the natural world, since it is much easier to care and protect something you know and have a relationship with, then something that is abstract that you only see in textbooks. (Headteacher, Green School)

> When they asked me if I take over the grounds and the children with special needs I just saw it as an opportunity to teach them through the environment (…) this year we have extended the gardens into food production. I wanted to grow the food right outside the dining hall, because then they make the link from that seed onto their

plate. (…) The work that I do with them… They are actually getting some pig poo, getting some sand, collecting loam soil and making their own fertiliser, they are making their own wormeries to understand how the worms turn the soil on a composter er, and just you know, just the posters and the information about it just teaching the importance of looking after natural habitats and the wildlife. (Nurture group teacher, Green School)

Well I do a lot of outside learning so we do everything outside, everything we would do inside we do outside. So we take the reading, the writing, the numeracy work outside (…) Everything you can do to get them back to nature really and to get them outside and understanding how the world works and where things come from and how we can protect what we got. (Outdoor teacher, Green School)

I think with young children, terms like sustainability I think certainly for Key Stage 1 in the school is quite hard for them to sort of have an understanding of it without physically doing something, so that is the main reason why I set the allotment up so they can understand that what we put into the ground we can sort of grow and reuse er, so I think that from my point of view that was the easiest way to do it with the very little children. (Year 6 teacher, Energy School)

These statements are a good example of the conviction shared by the staff of the different schools about the potential of the school grounds to provide not only experiences related to ESD, but also certain values and behaviours towards the natural environment[75]. However, these statements also express different ideas about how outdoor education can enhance ESD. The first quote relates the childhood experiences with future interest in nature. As highlighted by Wells and Lekies (2006:3), there are a number of studies documenting that the exposure to nature has beneficial effects on children's well-being, however, there is relatively little research about the long-term influence of childhood contact with nature. Nevertheless, some authors (e.g. SDC 2009; Frumkin (2001); Louv 2005) established a positive association between contact with nature in childhood and participation in outdoor activities with adult environmental attitudes.

The second quote, on the other hand, stresses the importance of looking after nature by teaching "through the environment", developing knowledge and skills that can be used with that purpose, an idea developed by some of the scholars discussed in chapter two and which says little about 'love for nature'. The third quote seems to assume the learner as someone 'divorced' from nature, and so it looks at outdoor education as a way of conciliating pupils with the environment. The fourth quote sees the outdoors as a way of explaining and practise difficult and complex concepts such as sustainability.

Summing up, the activities and features in the school grounds are the most common practice found in the research schools and that can be explained by acknowledging the importance of

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[75] The statements presented above, as well as the statements presented throughout the thesis, were chosen given their significance in terms of theoretical representativeness as explain in chapter three and not in terms of statistical representativeness.

outdoor education in primary schools; by looking at the amount of NGOs and people involved in promoting outdoor activities; by considering the staff perception of the outdoors, as a place to experiment and practise ESD and promote the connections with the environment; by understanding the mental connections between sustainable development and protection of the environment. The variety of ways in which the staff describes the benefits of the contact with the natural world and the way the outdoors are used, are examples of the different purposes ESD serve and the motivations behind these practices, something that will be discussed in the next section.

b) Investment in eco-features

Eco-features are another aspect that schools tend to invest. Reduction of energy consumption, rainwater harvesting, composting and recycling are some of the practices commonly found in schools, in both the case studies and the questionnaire, and related to eco-features. Improvements and changes to the school buildings and grounds may provide: i) financial earnings for the schools by saving on water/energy bills; ii) enhance the aesthetic aspect of grounds with flowers, gardens, trees and animals; iii) improve the quality of facilities if a better use of natural light and ventilation is available; iv) it can attract more interest from teachers, pupils and parents with the offer of diversified places to teach and do activities (e.g. indoors/outdoors; inside/outside the school); v) provide an example to pupils and the community by showing the schools' commitment to sustainability, arguments that explain the interest of having eco-features in schools.

The type of eco-features that the schools invest in more frequently are usually those that are more visible, that allow for the participation of pupils, that cost less or that have some immediate impact and not necessarily on those related to large and structural features. These findings point out the limitations of these improvements in the general environmental impact of schools, especially if these eco-features are compared to the general conditions of the buildings. It is interesting to note that two of our case studies (Outdoor and Energy Schools) and half of the questionnaire respondents considered the insulation of the building to be fair or poor and a significant percentage (36%) considered the interior room lighting to also be fair or poor.

The reasons beyond these findings can only be speculated. It may be because the priority of the schools is concentrated on teaching students about these initiatives so they see them as an educational endeavour; or because there is no money available for large and significant changes in the buildings; or because the visibility of the projects have a stronger weight on the school's decisions. I am inclined to say that it is a combination of the three factors, which vary according to the different budgets and interests of the schools. In fact, the 'Sustainable

schools' strategy appeared to follow the same pattern, suggesting mainly measures and projects that would have little impact on the general performance of the buildings, advising instead that "there should be a management and design of the buildings in ways that visibly demonstrate sustainable development" (DCSF 2009c), as described in chapter four.

This is true especially in Energy School where there is a strong will to have solar panels in the roof of the building because of its visibility, even if the insulation is poor and the school does not have double glazing windows,

> I think probably the biggest thing at school is to show visibly to children that we are doing these things (…) we had an on-going tussle with the local authority for four years about photovoltaic cells (…) and the reason we wanted to go down that line as much as anything else was even though insulation would perhaps make more of an impact, the cells would be very visible. (Headteacher, Energy School)

This visibility aspect is also connected with the implementation of good habits and the raising of awareness. Schools try to improve their physical environment to show their commitment towards sustainability (e.g. Peace and Energy Schools wanted solar panels mainly to show that they care about sustainable development; Green school transformed the gardens into green spaces to set an example to pupils and staff) and/or to save some money, having at the same time numerous visual clues spread around the school e.g. turn off lights, recycle, re-use, as constant reminders of the message they are trying to convey. The importance of providing a model of good practices can explain the attention given to the visual aspects of sustainable practices and eco-features in schools. I found this idea in all the case studies I analysed: through eco-features, posters, signs, rewards and competitions the pupils are regularly reminded about the importance of recycling, saving energy and water.

These findings reveal that, to a certain extent, the priority of schools in investing in eco-features is to provide educational opportunities and not necessarily to save money or resources; as such the schools appeared more motivated for molding 'future responsible citizens' than for contributing to national sustainable development goals related, for example, with the reduction of CO_2 emissions. However, it is also important to stress, as discuss before, the little freedom of schools in implementing large structural changes on buildings, since state schools depend on the local councils in terms of the amount of money available to implement these changes.

c) Embeddedness of ESD in the formal curriculum

A third key consideration is the embeddedness of ESD in the formal curriculum of the schools. In this case, there are some significant differences between the schools. Peace and Green Schools, for example, operated with extensive planning of ESD in their formal

curriculum, while Energy School or Multicultural School had not developed ESD planning to the same extent.

An interesting finding is that the curriculum and the core subjects are not the most obvious elements where ESD is developed. As described above, some of the schools make an effort to introduce some topics related to ESD in the classroom and different subjects, however, a large amount of activities are developed through special days and events, in the pupils clubs or extra-curricular activities. ESD is generally developed in the schools by carrying out small projects on the grounds or on the buildings. Only after some time did these fragmented activities become more 'theoretical' and moved indoors. Usually, the staff initiates new outdoor projects focusing on the practical side of the initiatives; only over a period of years, these projects are translated into the indoors curriculum to complement the initial experiences.

The relationship between ESD and academic targets and the importance of having good results in core subjects, can help to explain why the formal curriculum is the area where the schools struggle the most to develop ESD. This is more easily visible in the two schools were ESD has just started to be developed (Energy and Multicultural schools), as shown in the quotes below.

> There has been a lot of emphasis on bringing the grades of the children up and as a result of that the curriculum has narrowed, so there hasn't been any room for anything to do with sustainability or creative curriculum as such (Headteacher, Multicultural school)

> The first thing that we wanted to do was to develop the allotment (…) We are now trying to develop a green curriculum but it is not easy. There isn't much room for teaching new things because of the pressure to get good results, and some of the teachers are less flexible in terms of adapting the subjects to address sustainability or environmental issues (Year 6 teacher, Energy school).

This relationship between ESD and the curriculum, is somehow conflictive since schools mentioned that the 'unknown' or uncertain place of ESD in the education agenda and the increasing pressure to achieve good academic results make it difficult to balance the achievement of academic targets with the provision of a more creative, systemic, 'sustainable' education.

The questionnaire shows a clear agreement among the respondents over the difficulty of achieving academic targets and having more ESD activities at the same time. That is why Orr (2004) states that, if ESD has to be taken seriously, then a new ranking system should be adopted looking not only to academic achievements but also to, for example, how much of various things the institution consumes or discards per student; if the curriculum provides the essential tools for ecological literacy; or if the institution use its buying power to help build

sustainable regional economies. According to Orr, schools should also be ranked on the basis of what their graduates do in the world.

The case study schools adopted different approaches in order to overcome this difficulty. Green, Outdoor and Energy Schools stated that they could focus on ESD because their results were good, so it seems that viewing from this perspective, schools have first to prove their capacities in achieving good academic results and only after this they can focus on other activities such as ESD,

> If we want to have the freedom to pursue our environmental and sustainable education then our results have got to be good. So its marrying those two together, it's paying lip to the targets and attainment agenda but it's also fusing that together with the sustainability aspect, so that is the biggest barrier I think at schools in the moment. I know some schools that are just focusing completely on Maths and English and not bothering with anything else. (Year 5 teacher, Green School)

> I think that it is easier if you focus on being good in academic terms because that gives you more freedom and also authority to choose other kind of activities you want to develop in the school (…) There is always the thing of getting tests results and those kinds of things and at the same time doing the right thing and, you need to balance it the whole time. (Headteacher, Energy School)

On the other hand, Peace and Multicultural Schools stated that academic targets and ESD activities should be seen as complementary, one thing enabling the other instead of one excluding the other. In these schools, there is a feeling that ESD can provide opportunities to enrich the curriculum, to provide real life experiences, motivation and stronger connections between pupils and the curriculum,

> It is not either or ESD and exam results. It's making sure that you enrich the curriculum trough ESD and doing that because it is a good thing to do anyway and showing them that is a way of taking the school forward rather than being a retrograde step and a possible threat to improving the exam results. So that is the challenge. I've got to convince people of that and then show to them that it works. (Headteacher, Multicultural School)

In terms of performance at Key Stage (KS) 2 exams, the five schools I analysed do not vary greatly. Based on 2011 school league tables[76] published in the Guardian, which present aggregate scores across English and Maths based on KS2 results, Peace School has the best results of the five schools with an average of 28.1 points, followed by Multicultural School with 27.5, Outdoor and Energy Schools both with 27.4 points and Green School with 25.1 points[77].

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[76] Retrieved from: http://www.guardian.co.uk/education/primary-school-league-tables
[77] A school in which all pupils gain level 4 scores 27 points. The schools are ranked by the percentage of pupils gaining Level 4 in both English and Maths. Level 2 or below is worth 15 points, Level 3 is worth 21 points, Level 4 is worth 27 points, Level 5 is worth 33 points, and level 6 is worth 39 points.

The relevance of the schools' academic performance to the research can be understood by taking into account two factors: the fact that despite the five case studies having similar performances, they understand the role of ESD in the school and its relationship to academic achievements differently; and the increasing importance of good academic results upsurge the pressure in schools and so those that see ESD as an extra activity that can be developed only after the core subjects are well covered, have less and less space to expand ESD activities.

In some of our case studies where environmental education and ESD started to be an important feature for the school more than twenty years ago, there are good examples of how the school organised itself in order to balance academic targets and other activities. However, even with all the benefits presented by the literature and the 'Sustainable schools' strategy about having ESD in the curriculum of the schools, there is a clear concern in achieving academic targets and carrying out other activities only when there are time, resources and staff available. In the discourse of some of the staff from the five case studies and in the majority of the questionnaire respondent, ESD is perceived as an extra activity, something that requires extra-work, extra-resources, extra-knowledge, extra-money, extra-time to be able to develop.

The case studies reveal some good ideas and some successful projects where ESD and curricular subjects merged and complemented each other, however, these schools not only have a strong motivation, the knowledge and the contacts, they also have been developing these activities for a long time and have learned what works best and how to overcome obstacles.

d) Involvement of the pupils in ESD activities

The development of practices that allow for the participation and involvement of pupils is an important aspect of ESD in the schools. In most of the examples presented above, where schools tried to reduce their energy consumption or recycle more, there was an effort to involve pupils and staff, as much as possible in these activities.

The work of the schools concerning inclusion and promotion of equal rights and participation of all the children in the different activities, it is visible in the writing policies about equality, anti-bullying, disability, equal opportunities and open access to extra-curricular clubs and activities. Some schools, Peace, Green and Outdoor for example, also

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In 2011, a primary school in Harrow had the highest score with 34.1 points, and a primary school in Essex the lowest, with 16.6. Around 1,300 schools fall below the expected standards. Retrieved from: http://www.telegraph.co.uk/education/primaryeducation/8199743/Primary-league-tables-2010-how-to-read-the-Key-Stage-2-results.html

gave opportunities to the children to participate in decisions about the refurbishment of the toilets or the design and the restructure of grounds and buildings whenever this took place.

In fact, these efforts have been recognised with awards granted to the schools such as: 'Investors in people' in Peace School (1996, 1999, 2002); 'The Inclusion award' which covers gender, attendance, disability, special education needs, literacy and numeracy, anti-bullying, and environmental and global citizenship issues, in Peace School; the 'Race equality' silver level, in Peace School; the 'Diana Princess of Wales memorial award scheme anti-bullying award'. in Outdoor School; and the 'Peacemala school award' (2008, 2009, 2010) found in Peace School. Green School is recognised by Ofsted as an inclusive school for the development of their Extended Services provision, such as the After School club, the Breakfast Club or the Dyslexia support group.

During my time at the schools, I observed that ESD is regularly seen as a way for promoting self-confidence and for increasing the participation of children in school activities. This belief is stated not only by teachers and headteachers, but also by parents and pupils, as stress in the quotes below,

> We recently sent some of the children to take photos of the school environment and explain what we did in the school, so I believe that this kind of participation is important and it really develops different skills in the children. (Years 5 and 6 teacher and ESD coordinator, Outdoor School)

> I always though even my lowest stability children have pride and felt they could do things, whenever we were doing something outside the classroom. I believe the activities related to the environment can really increase the self-confidence of children. (Former teacher responsible for ESD, Green School)

> I started joining the recycle team because I thought that like I want to be on a team, because never had the chance of actually being part of something big so I thought, well, actually I could actually make a difference to our school by joining something and actually doing something. (Pupil Year 6, Peace School)

The engagement of pupils with local problems and their community is seen as a way to increase participation and students' awareness towards their community. There is, however, an emphasis on the social dimension of citizenship, individual responsibility and participation without considering, as stressed by Biesta (2008:45), the political dimensions of citizenship "including an awareness of the limitations of personal responsibility for effective political action and change".

e) Establishment of links with the community[78]

The establishment of links with the community is developed in order to benefit the school and pupils, and to benefit the community. These links are developed by establishing collaborative projects with the local community and with communities that are far away, and are used as a way of exploring different issues such as the interdependence of the world.

This task is usually accomplished through connections with schools in another country, or another continent, especially in Africa. Peace School has links with a school in South Africa and states that the whole ethos of the school is to educate children to be pro-active global citizens of the future. Green School has links with schools in Nigeria and France, Outdoor School with schools in Kenya, Bristol and China, and Energy and Multicultural Schools are also developing these national/international links. Usually, the schools develop a 'pen-pal' scheme, where pupils exchange letters and get to know the habits, lifestyles and cultures of those in the other country. Some of the schools (Peace and Outdoor) have also used these links to develop environmental work. Peace School has also supported the School in South Africa through fundraising, enabling it to renovate the school grounds and to have more training for the staff, for example.

Peace and Green Schools are particularly successful with the links they established with international schools and this is acknowledged in the respective Ofsted reports. However, there is also some criticism concerning the national links, which are seen as less developed,

> While the school has a very good well-established links with the local and global communities, its national links are less well developed. As a result, pupils are not aware of the rich cultural diversity to be found in this country as they could be.
> (Ofsted Report 2009, p 8, Green School)

It appears difficult to please Ofsted for even if the school develops well the global and local links, one of the main requirements of ESD, they are criticised because the national links were overlooked.

In this sense, the experiences of two schools are revealing. Outdoor and Energy Schools are situated in rural areas where the cultural diversity is low, which is considered to be a disadvantage in the opinion of some of the staff, as the children do not often engage in contact with people from other countries, cultures or ethnicities. In order to overcome this disadvantage these schools have worked on establishing links with schools in other places, so rural based children can increase their awareness of cultural diversity. However, Ofsted

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[78] The respondents used the word community to describe "the outside world" whenever asked about the interactions between the school and the society, local, national, global, revealing a great malleability towards the concept.

considers that these schools did not develop the international links as much as desired and are also criticised for this,

> They have a good perception of the need for pupils to understand that they are growing up in a culturally diverse society. They recognise that first-hand knowledge of the range of cultures and beliefs found nationally and internationally is a weaker aspect of pupils' understanding. Plans are in place to link with a school in a culturally diverse society, although they have not been fully implemented. (Ofsted Report 2010:7, Energy School)

Other initiatives I found in some of the schools are seen as another way to promote such awareness of cultural diversity and to help pupils understanding the ideological richness of the world. These initiatives are, for example, the 'International food evening' at Peace School (photo 23), which aims to promote awareness about the diversity of food and food habits of the different cultures, since the multi-ethnicity found in the school is quite high (around 38%, much higher when compared to the 2% of the other schools in the same area); the 'Value of the week' in Green and Multicultural School, where each week a value is chosen to be discussed in class and covered in all assemblies, e.g. respect, care, friendship, honesty, always trying to make the connection with ESD (figure 15); together with the 'Language of the month', where each month the whole school learn words, the language and cultural facts of a different country (figure 16).

So far, I presented the ESD practices found in the researched schools and discussed some of the more objective aspects that influence the development of those practices. Divided into material, educational and social, the ESD practices analysed above reveal the most common activities developed by the study schools. The development of the grounds, the investment in 'eco-features', the embeddedness in the formal curriculum, the involvement of the pupils and the establishment of links with the community appear as the key ESD projects developed in the schools, existing nevertheless a significant difference concerning the importance of each of these projects within and between the schools. The next sections will look at the intentions and purposes behind these practices, providing further explanation of the differences and similarities of ESD across schools.

5.2 Intentions and purposes of developing ESD in schools

In this section I explore further the question – 'what does one want ESD for?' – looking at the different agendas schools, government and other organisations have and want to develop under the name of ESD. It is argued that sustainable development in schools can enhance social and individual skills, such as: healthy living, road safety practices, green travelling, social inclusion, care, good behaviour, well-being, self-confidence, motivation, responsibility, initiative, participation and so on. In general, and based on the review of the

literature and on the analysis of the 'Sustainable schools' strategy, one can divide the key purposes of ESD into the following:

- Raise awareness about the need to protect the natural environment;
- Provide the knowledge and skills needed to live a more 'sustainable' life;
- Promote healthy lifestyles;
- Instil habits of ethical and responsible consumption and disposal;
- Reduce the environmental impact of the school building and staff/pupils;
- Develop responsible and inclusive citizens;
- Contribute to the wider goals of sustainable development.

This list does not exhaust all the purposes ESD may serve, but it is a balanced summary of the main objectives behind the development of ESD in schools. The graphic below on the right, indicates the opinion of the survey schools concerning the role they can/should play in the promotion of sustainability practices and, the one on the left, the main reasons for this promotion, according to the respondent schools.

The vast majority of respondents, 96%, fully agreed or tended to agree that schools in general should play a greater role in instilling good habits and practices concerning the protection of the planet (see graphic below, on the left)[79]. The main reasons presented (see graphic below, on the right)[80] concerned i) the development of responsible citizens; ii) the creation of habits, attitudes and skills for the future and iii) the need to look after the planet. The respondents also identified several benefits for children, such as the increase of awareness and responsibility (26%), the ability to look after the planet (23%), the development of good habits (19%), and the ability to make good life choices (18%) and to ensure a positive future (14%), findings that can contribute to the current debates about the moral purposes of schooling.

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[79] In this question the respondents were asked to choose one of four options (totally agree, tend to agree, tend to disagree, totally disagree) to the sentence presented.
[80] This question was open and so the respondents were asked to give reasons why schools should teach about the protection of the environment. The different answers were merged into categories and so the graphic represents those categories with the percentage of schools presenting reasons in each category.

Figure 36 – Questionnaire respondents' opinions about the role of schools in the promotion of practices concerning the protection of the planet
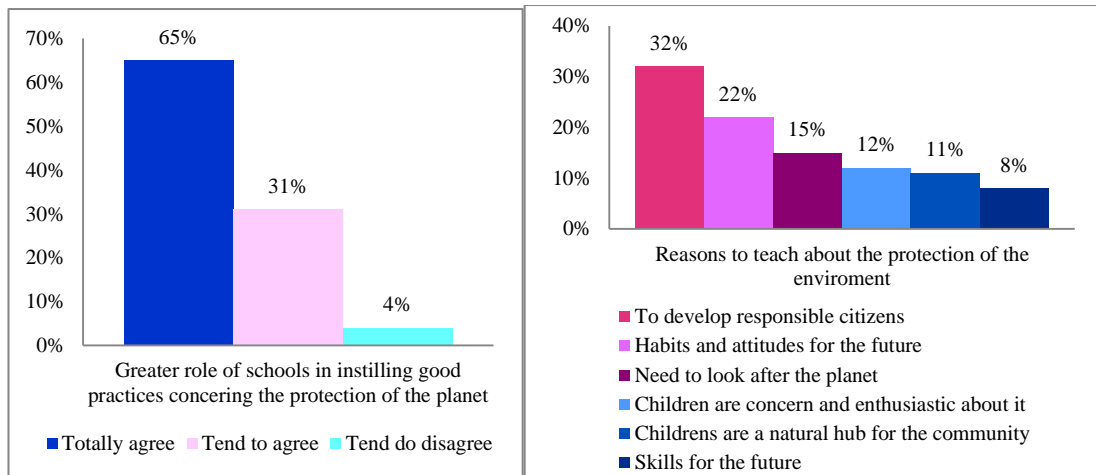
5.2.1 Perceptions of sustainability and sustainable development

As discussed in chapter four, there are numerous projects and agendas in schools that can be linked to ESD. From healthy meals to global awareness, almost everything happening in schools can be connected to ESD and so my interest here is to analyse the motivations and understandings of sustainable development in the different schools to see if those have an influence in the way ESD is delivered.

My data show that there are not significant differences in the way the staff of the different schools define sustainable development and sustainability. The differences seem to be more significant depending on the role respondents have inside the schools. Among the five headteachers the concept of sustainability is defined focusing on similar aspects, such as the link between the social/economic/environmental aspects. References to responsibility, care and global citizenship also appear in the definitions of some of the headteachers:

> Sustainability is not just a physical thing, it is actually about you as a person, how you react to the rest of the world, it is that caring for people as well as the environmental thing for us to continue, it is global citizens of the future. (Headteacher, Peace School)

> For me sustainability is about everything it is not just about let's say, the chickens and the compost and the recycling and the growing, it is about them (the pupils) taking responsibilities for themselves in terms of their lives, their careers, where they are going, what they are doing and their responsibility for the planet. (Headteacher, Outdoor School)

For the teachers, on the other hand, sustainability is mostly connected with the protection of the environment and a better use of the resources. There is also a reference to the idea of

thinking about the future and the legacy we leave to future generations (Peace and Green Schools) and to the financial aspect of sustainability, saying that it can be a way of saving money. These differences are presented not because I want to prove that the respondents' professions mainly influence definitions of sustainability, but because I want to make explicit all the important factors that contribute to the way ESD is developed in schools, including the people's role in the organisation.

> Not taking more than what you need, not wasting and just try to make things move along fairly, equally at balance with the nature. (Green School, Year 6 teacher)

> Trying to make the most of what we have and not being profligate or disrespectful really of the Earth and its resources. (Outdoor School, Years 5/6 teacher)

> I think that if you are more sustainable aware you pay less and that is a powerful incentive. (Peace School, Year 5 teacher)

> Sustainability I guess, it is actually part of my daily life, daily routine. Both in school and at home there is a lot of reusing, recycling, limiting our use of fuel at home. I mean, ok that is an economic thing as well. (Energy School, deputy headteacher)

Sustainability is defined by the respondents of the questionnaire in different ways, with the answer 'use of resources carefully and efficiently' being the one with the highest percentage (21%), followed by 'long term development' (18%), 'protection of the environment' (14%), 'raise awareness/provide a model for children' (12%) and 'reduce the carbon footprint' (10%). Other answers with less statistical relevance include 'green issues', 'saving money' or the '3 R's', all with less than 10% of the respondents' choices[81].

Figure 37 - Definitions of sustainability given by the questionnaire respondents

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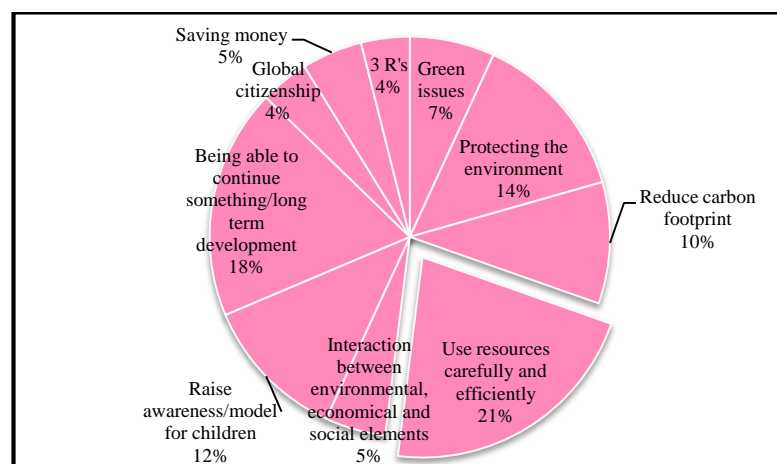
[81] The question asked the respondents to define sustainability, was an open question. All the answers were then aggregated into categories which are presented in the graphic. The pie charts were chosen when the answers involve too many categories.

The children from the case study schools are not very familiar with the concept of sustainability. Whenever asked about the meanings of the word, the children stated that they did not know or could not explain what was about, however they are aware of issues that are usually related to sustainability. Most of the time the pupils connect it with taking care of the environment and saving energy or recycling, probably because those are some of the activities they do in the school.

Although the way sustainable development and sustainability are defined and interpreted can affect ESD practices, it seems that there are not major differences in the way people from different schools interpret the concepts. However, despite the similar interpretation of the concept and the standardisation of projects, the context does shape the way ESD is delivered. Practices of ESD across schools are shaped by factors such as personal interests, opportunities, networks, resources and grants available. As I am going to demonstrate throughout the chapter, the location of the schools, the resources available and the knowledge of the staff, among other things, influence the development of ESD.

The progress of ESD in the study schools always involves a strong motivation and interest in the topic, regardless of the different emphasis on specific activities or projects. All the schools, from the case studies and questionnaire, see ESD as a way to develop and improve the school.

Personal and/or moral reasons appear as the main incentives to develop ESD activities in schools. All the staff involved in the projects share a strong motivation and personal interest in the topic, together with other concerns such as the development of connections between the pupils and the natural environment, concerns with the state of the world, improvement of the school buildings and grounds and the vision of the school as a n important place where awareness and environmental habits can be promoted.

> I think that is something we are very passionate about in the school and always encouraging the children to take responsibility for themselves and for what they do in the future (…) It is a very important issue for me. (Headteacher, Outdoor School)

> It's making sure that you enrich the curriculum through ESD and you are doing that because it is a good thing to do anyway. (Headteacher, Multicultural School)

> Sustainability always comes up all the way through my schooling and it was something I felt quite strongly about, you know, how much I'm doing, how much I can do to sort of recycling and all those sort of things. (Sustainability coordinator, Outdoor School)

> We are passionate about it (sustainability). We love it, we live it, we breathe it (…) I am a teacher assistant, I have a level 3 diploma but I know how to grow my own food, I know how to feed the soil, I care about my land, my Country, my atmosphere and I try to pass on that message to the children here. (Teaching assistant and Nurture group/horticulture coordinator, Green School)

'Passion' seems to be the key word used by the different people to describe their interest in developing ESD in schools. All the schools and staff involved share a strong passion about sustainable development. However, not only some schools are more successful than others in developing ESD but there are also specificities in the way ESD is developed. I am going to explore these issues by looking at the context of the five case studies, and at related agendas that can exert an influence in ESD in schools.

5.2.2 The role of personal interests in developing ESD in schools

The names assigned to the schools to preserve their true identity provide a good indicator of the most visible feature of ESD in the schools. The headteacher of Peace School described sustainability as a 'reaction' to the world, and the need to form "global citizens of the future". During the interview she mentioned several times the importance of the spiritual element of sustainable development. The headteacher of Peace school mentioned faith, acceptance of different religions as well as acceptance and recognition of ancient and indigenous, as tools to promote a greater engagement with the environment and respect for diversity.

> It's a bit like the Saint Francis. He was on the one hand the patron saint of the environment, very nurturing with animals and the environment, and on the other hand, he was a great peacemaker, one of the first Christians to be accepted into the Islamic world and (…) in Assis the actual place of Saint Francis birth they did one of the very first interfaith ceremonies which is what our school is now becoming. We are sort of known for our sustainability work, but also for our interfaith, intercultural work and it is strange how the two came together. The background of our faith is caring for our environment. (Headteacher, Peace School)

Peace School is the school where these dimensions of inclusion, spirituality, religion are comparatively more explored, with the Peace club, the labyrinth garden, the visit to different places of worship. There is an intention in the school to promote multiculturalism and the school has in fact a much greater percentage of pupils from different ethnic backgrounds than other schools in the same area (38% against 2% as a local average).

Green School reflects a different approach to sustainable development. The headteacher was the main instigator of ESD in the school. During my visit and our interview, it was clear that he was a person with strong links to the natural environment, genuinely concerned with our impact on the world. Unsurprisingly, the school invests a lot of effort and money in improvements concerning gas, electricity and water consumption; in the rational use of resources; in using local, organic and fair-trade products. The staff called it "Green school" and not sustainable school. They also called it the "headteacher Green school", stressing the importance of the headteacher and his views on the development of ESD, the greening of the campus and grounds.

Outdoor School is a great supporter of outdoor education. During my visit I learn that the teacher responsible for the introduction of ESD in the school developed the international links with the school in Kenya as the main way to introduce the concept to the school. Nowadays that link still exists, however the school is much more oriented towards the outdoors and that was justified by the headteacher saying that "you have to use the skills, knowledge and interest of the staff available".

Energy School is a good example of this approach, for the headteacher mentioned the importance of having a site manager with a PhD in Engineering and a strong interest in the environment. The site manager's skills are used to reduce the school's energy consumption and improve efficiency. Despite the involvement of other members of staff in ESD, the school has not been able so far to have a holistic approach to ESD, and its attention has been concentrated mainly on the building and energy consumption.

> We are now starting to think about what we can do to have a greener curriculum. So far, I have been working with the site manager in order to reduce the consumption of energy and water in the school (Deputy Headteacher, Energy School).

Multicultural School is a special case. As explained above, I visited this school not because it is particularly well-known by its work in ESD, but because the headteacher it is the former head of Green School. The name I assigned to this school reflects the great mix of ethnic groups represented in the school. The prevalence of this characteristic is not the result of any particular action or project by the school, but the result of its location. Here, the way ESD has been developed so far is influenced by this multiculturalism, so the school tries to promote respect for diversity, and awareness of the different religions, languages, cultures, and lifestyles that exist round the world. In this case, the personal interest of the Headteacher it is not yet too visible, however, I could observe during my visit the projects already in place to transform the building and grounds and turn the schools into a 'greener place'.

These differences, although relevant and interesting, do not tell the whole story, since there are other factors influencing the way ESD is practiced and developed in schools, internal and external factors, related to knowledge, availability, networks, location, interests and time, as I am going to discuss in the next sections.

5.2.3 The links between ESD and other related agendas

There are numerous agendas that can influence the development of ESD in schools and go beyond personal motivations and interests, and that can explain the development of specific activities and practices in schools and the standardisation of ESD projects.

a) Promotion of healthy lifestyles

As stressed in chapter four, the increased rates of child obesity in the UK are seen as one of the reasons why there is an emphasis on promoting healthy lifestyles in schools. In all the five schools I could observe that particular attention is given to this aspect, not only by including it in the curriculum (figure 17) but also by providing, on a regular basis, relevant information to parents/carers through newsletters, special events, e-mails and in schools' policy documents. This information includes, for instance, advice and rules about eating sweets, chewing gums, or eating crisps and snacks at school:

> It can be easy to find a food that your child likes and then keep giving it to them. Children need to eat a variety of different foods to give them a well-balanced diet (…) Please note that sweets and unhealthy snacks in packed lunches are not allowed in the school. (Website, Peace School)

> We are committed to improving the health and wellbeing of our pupils and staff. We believe that promoting and establishing lifelong healthy eating patterns in our pupils; educating our pupils about different types of food in the context of a balanced diet; and developing pupils' skills in how to plan, budget, prepare and cook is essential to each pupil's health and well-being as well as their intellectual abilities. (Website, Outdoor School)

All the five schools have awards concerning healthy food. Peace school has the 'Healthy schools' award (2002), 'Healthy futures' award (2004) and 'Healthy schools' golden award (2009), recognising its work in promoting healthy diets. Outdoor School was one of the first schools in the country to have been awarded 'Healthy schools plus' status, according to the headteacher, which includes a commitment to healthy eating and to source local seasonal food wherever possible. Multicultural School also looks at the diversity of types of food served. Given the large number of children from different ethnic groups and religions, dietary and religious requirements are catered for and, in the menu, there is a choice of three main courses, one of them being vegetarian (photo 24).

The questionnaire confirms the importance granted for having healthy meals, since all the schools stated that they talk about the importance of healthy meals/lunchboxes. However the reported regularity of these talks changes across schools, as shown in the next graphic. The majority does it termly (35%) or annually (27%), especially through newsletters (53%), lessons (31%) and meetings or assemblies.

Figure 38 - Regularity of 'talks' about healthy meals according to the questionnaire respondents
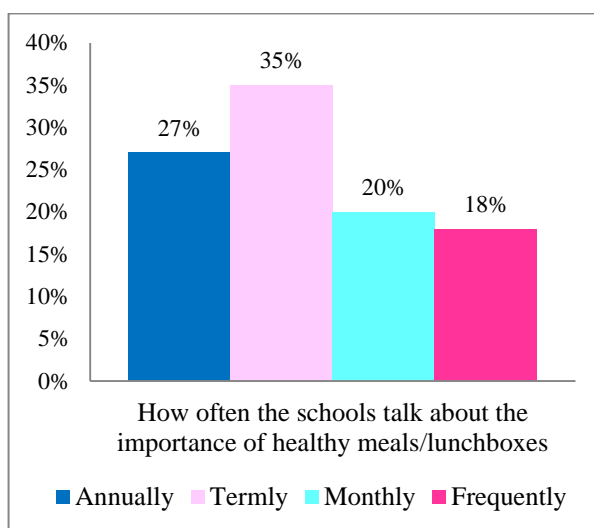
However, and despite the visible concern about the type of food provided and the importance of nutritious packed lunches, I could also observe, during my visits to schools, many children (and some of the staff) having unhealthy snacks in their lunches, such as crisps, chocolate bars and sweets. When I looked around the playgrounds I could also see coke cans and empty crisps bags in garbage bins (photo 25). The social and economic context, together with the limitations of schools in determining the type of food people should consume, lead to a gap between the 'desirable' and the 'real' consumption patterns, providing evidence of the inconsistencies between discourses and practices.

b) Reduction of schools' CO_2 emissions

As stated in chapter one, the UK schools are estimated to produce 9.245 million tonnes of carbon dioxide per annum. This is 3% of total UK emissions (WWF-UK 2006). Some factors that may explain these numbers relate to the buildings, which are, in the majority of cases old and very inefficient in terms of energy consumption; with the increase use of ICT in schools; and with the use of private cars as the preferred mode to travel to school, a practice that has reportedly doubled in the last twenty years. Additionally, figures published by the 'Eco-schools' programme (2006) showed that schools are spending £459 million each year on electricity, water, clearing up litter and stationery. The education sector constitutes 26% of government carbon emissions, amounting to a total of 16.5 million tonnes of CO_2 and schools are the largest contributors, with primary schools contributing with around 3.6 million tonnes of CO_2. If we look at the major consumption categories, 26% of the resulting 10.5 million tonnes of CO_2 are direct emissions from the school estates, 22% from electricity and 14% from transport.

The 'Sustainable schools' strategy, together with other programmes, emphasised the need to reduce the consumption of energy and water in schools, and reduce the generation of waste, promoting awareness and good habits at the same time. As a result, ESD is seen as a way of managing the resources more efficiently in order to reduce the amount of CO_2 emissions and as a way of contributing to the general sustainable development goals, providing opportunities for schools to save money and 'show off' their best practices and eco-features. However, and as stressed before the focus on the direct emissions and on 'small' projects have, in general, little effect on the overall reduction of CO_2 emissions

### c) The social dimension of sustainable development

Despite the emphasis on the need to contemplate the three spheres of sustainable development - environmental integrity, economic viability, and a just society (UNESCO 2006) – there is, in general, a struggle to develop the social dimension. The 'Sustainable Schools' policy and different NGOs tried to highlight the need to develop in schools, aspects such as inclusion, participation, integration, non-discrimination, and local well-being. The problem is, as noted by Dillard et al. (2009) we still have little understanding of the social dimension of sustainable development. Dillard et al. (2009) argue that there is no consensus on what constitutes the social dimension of sustainable development and stress that it should be understood as both "the process that generate social health and well-being, and those institutions that facilitate environmental and economic sustainability" (p.4). In the present research, the social dimension of sustainable development is understood mainly as the social values promoted by the schools and the work developed with the local community.

As mentioned in chapter four, the 'Sustainable schools' strategy devoted three doorways to this social dimension – "Local Well-being", "Inclusion and Participation" and "Global Dimension". However, unlike the other doorways focused on energy, water or waste, these three doorways provided little guidance about these specific themes, what these doorways were about or what schools were expected to do with them.

One of the case study schools, Peace School, placed a lot of emphasis on the social aspect of ESD, but the others seemed more interested in the environmental aspect of it. The same can be said about the schools that answered the questionnaire. The schools stated that protection of the natural environment, renewable energy, and recycling are the three most important issues about sustainability, while depletion of natural resources, our consumption habits and climate change as the main topics schools should teach about. The social aspects of sustainability do not seem to be a priority for schools that answered the questionnaire: issues such as poverty, inclusion, global inequalities or quality of life had the lowest percentage of responses, as shown in the graphics below.

Figure 39 - Most important issues about sustainability as consider by the questionnaire respondents[82]
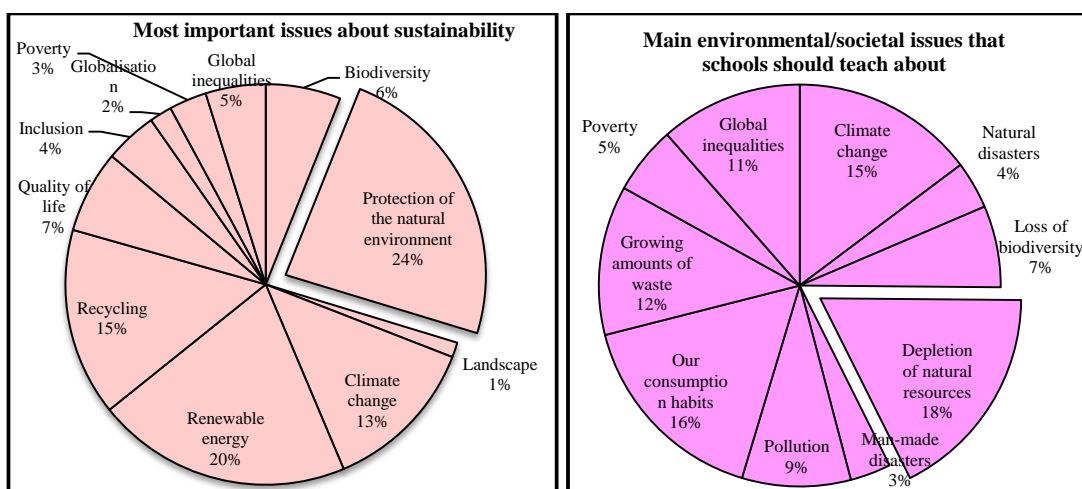
And yet the development of the social aspect of ESD becomes more relevant if one looks at the increasing number of pupils from an ethnic minority in schools in England. According to figures published by the department of education (Sheperd 2011), almost a quarter of all pupils in primary and secondary schools are from an ethnic minority. In primary schools, the proportion of pupils whose first language is not English has risen 5% in the last five years. Agyeman (2001:18) argues that "ultimately, there will only be environmental quality when there is human equality" and so even if the education system cannot provide all the answers, as stressed by Gillborn (1990:10) it does the opportunity to "make a significant contribution towards the creation of a more just society". Therefore, the promotion of multi-ethnic schools, the increase of the awareness about different cultures, religions, languages, can have an important role in accepting the difference and potentially reduce discrimination.

5.2.4 The links between meanings, purposes and agendas

Education for sustainable development, even if interpreted similarly across the different schools I researched – and differently depending on the specific professional role of the respondent - serves different purposes and if one looks beyond the superficial account of existent and non-existent eco-features or ESD practices, it turns out that the same features have both different uses and different users with various interests.

A good example is the grounds of the schools and the outdoors, the areas prioritised by all the schools and the key place to develop ESD activities. Almost half of the questionnaire respondent schools use this space regularly, meaning that half of the schools declared that

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[82] In these two questions, the respondents were asked to choose the three most important issues (a) about sustainability (b) that schools should teach about. So the graphics represent the percentage of responses in each category.

the outdoor space is used once a week or more to teach, and 37% use it at least once a month, as shown in the following graphic.

Figure 40 - Regularity of the use of the outdoor space according to the questionnaire respondents
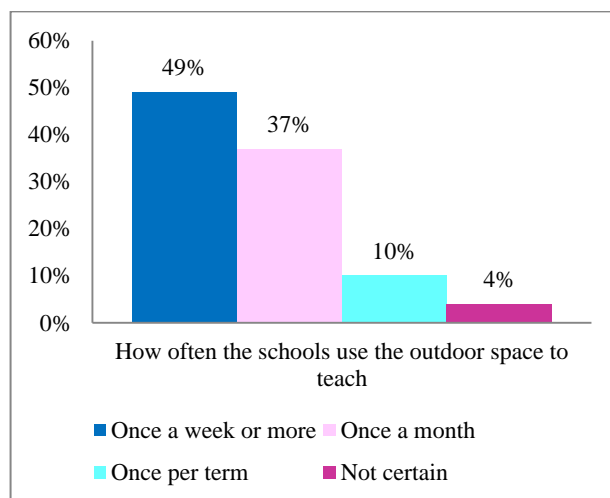
The grounds are used to grow vegetables, trees and flowers; to have farm animals and gardens; to compost leaves and food waste; to learn about cycling or the natural environment. All these activities, together with the visit to local farms, local places of interest and special events (e.g. the 'Zero waste week') are believed to help in the promotion of good habits concerning food growing and waste, healthy food habits, to increase the knowledge about and connections with nature. Despite the attention given to the grounds and outdoor learning by all the schools, it is also possible to observe the significant differences in the way this space is used and how often, or how structured is the use of the space.

Peace School may be the one where the grounds are more diverse better cared for. The aesthetic element appears as quite important and there is a sense that the grounds, or at least certain places in the grounds, are more to be 'admired' than to be used (see for example photo 26). Green, Outdoor and Energy Schools, on the other hand, seemed to pay less attention to the aesthetic of the grounds and more to the practical use. This does not mean that there is no concern with having flowers, trees or green grass in the school, but together with those, there is also soil to plant flowers, empty pots, seeds ready to be planted on, watering cans, tools and all kinds of other material useful in the process of planting or maintaining the gardens (see photo 27).

Not only does Peace School have different gardens it also plans carefully outdoor activities for the children, and makes sure that the message of 'taking care of the environment' is well known and promoted by the whole school. However, the impression I have from the school is that the grounds are actually not used very often when compared to Green or Outdoor

Schools, for example, for the school's focus is on multiculturalism, global dimension, peace, respect, care, inclusion. During my time in the school, the headteacher actually mentioned that the environment is the link to promote global citizenship and it is used to endorse the respect for the diversity, the differences and the importance of understanding that we all belong to the same place, we are all connected, people and nature, local and global, near and far. Therefore, the emphasis is not on learning how to grow vegetables, for example, but on learning how important the vegetables can be in our world, why it is important to have free soil to grow them, and how the growing of vegetables affects other species or local wildlife.

The headteacher stressed the importance of teaching values to the children through the outdoors, and not only facts, matching one of the most important ideas behind ESD policies and literature: the importance of education in promoting certain values and attitudes that could lead us to a 'greener and fairer' world.

> We must not forget that the aim of education is not just to learn facts but to learn values. Leonardo DiCaprio, in his film 'The 11th Hour', stated that primary school children at eleven could identify 150 advertising logos, but could not name traditional flowers, trees, butterflies, birds, etc. We decided to enhance our school grounds and develop a nature trail with beautiful signs to help the children's general knowledge and to develop this connection to the nature. (Headteacher, Peace School)

Green School has tried to look at the whole process of food provision and consumption in the school, running its own kitchen, but also growing vegetables and including them in school meals, visiting a farm weekly and carrying out curriculum-centred activities, such as the organisation of an organic food day, where pupils learn about the benefits of growing and eating organic food and the differences between organic and non-organic diets. Although all the children have the opportunity to participate in these activities the 'active learners', a group of children from all year groups which have learning and/or behavioural difficulties, are those more heavily involved in outdoor activities, using that experience to learn about curricular subjects, such as Mathematics, English or Science (photo 8 and figures 18 & 19).

One of the main concerns of Green School is to encompass the different aspects of the processes the school is involved in. For example, the grounds are important because they can be used to grow vegetables, providing a better understanding of the requirements and work needed, but this is only one feature the school is developing concerning food growing and consumption. The school also runs its own kitchen, provides local, organic and seasonal food whenever possible and offers at the same time cookery lessons, special events related to organic food and curricular lessons.

Outdoor School is the school where the outdoor activities are more developed taking advantage of its rural location. With regular visits to a local farm (photo 29), a 90 minute session of outdoor learning for each class per week, and an emphasis on the involvement of

the children in looking after the school grounds. The school has developed a good range of outdoor activities, and not only uses the grounds to grow vegetables, but they also use the fact of being situated in a rural area to teach about animals and plants, to visit regularly an organic farm and to use the RSPB nature reserve nearby. The organic farm is subsidised by both the Environmental Stewardship and Countryside Stewardship public schemes which pays certain farmers to invite the public in general, and schools in particular, to visit their farms and learn about the countryside, food production, farming, wildlife conservation, landscape and historical features. It this sense, the school's website states:

> Our strong link with the outdoors involves much more than our weekly learning sessions – children are encouraged to take responsibility for the school grounds. Each class has a compost bin and student monitors ensure that these are emptied daily. Children from all classes take turns to care for the chickens and keep the school grounds tidy. We have monitors to water vegetables, flowerbeds and the polytunnel. The School Council it is a group of students who listen to children's ideas and make decisions on how to develop our grounds to ensure that children are getting the best from their environment. Our programme of outdoor education is as much a part of school life as numeracy or literacy. Our children are just as at home in a pair of wellies as they are in the computer suite!

There is a strong focus on the importance of connection with the natural environment, but also with the encouragement of practical skills, teamwork, 'survival' skills. These skills are especially developed with the forest schools sessions which happen every week in the school or in the local farm the school visits regularly. There is also a great focus on the experiential learning aspect, since many curricular topics, especially within Science and Geography are taught outside the classroom. The school's rural location helps in the development of the outdoors and the connections with nature for many pupils also have family involved in farming or agriculture and are aware of the importance of protecting the natural environment. The questionnaire reveals the same tendency, since the use of the grounds as a 'classroom' is more frequent in rural schools than in urban or inner-city schools, given that half of the rural schools stated that they use the grounds at least once a week whereas only 10% of the urban schools do the same.

Energy School also developed the grounds to provide outdoor learning, following mainly the 'Eco-schools' framework, however it seems that at the moment neither the aesthetic element or the practical use are working well, giving that the areas built in the school grounds, the vegetable plots and the wildlife area seem almost abandoned with no one with time or skills to provide the maintenance and regular use of the spaces. In Multicultural School the grounds are being transformed. There are vegetable plots ready to be used and the teachers are having gardening lessons so they know what to teach. They have a gardening club in place already and are expanding outdoor activities. They are expecting to grow vegetables, fruit and flowers during the next months and to use the grounds as a classroom as well.

The school is also hoping to lease or purchase some land next to the school, which has a large pond that could be a community ecological resource and a nature study centre for the children and for other schools in the future (photo 30).

Forest schools practice is a popular programme in primary schools. A Forest school is an "innovative educational approach to outdoor play and learning. The philosophy of forest schools is to encourage and inspire individuals of any age through positive outdoors experience"[83]. By visiting a local woodland on a regular basis and through play, the pupils have the opportunity to learn about the natural environment, how to handle risks and how to use their own initiative to solve problems and co-operate with others. The forest school practice aims to develop contact with nature, self-awareness, social communication skills, intrinsic motivation, empathy, self-regulation, independence, self-esteem and confidence. As stress by a teacher from Green School:

> I think it is a really positive thing (the forest schools sessions). The children go home really excited when you have done a fire and cooked on it. They go home absolutely amazed with the fact that they can participate in these activities and think that really develops their motivation to learn and their practical skills (Teacher responsible for Outdoor Education, Green School)

Therefore, as stressed before, using the outdoors as an example, one can see that the differences found in schools and exposed above reveal that, even when schools have the same features, the same projects, the way and the reasons why activities and projects are organised and maintained differ greatly. This influences not only the potential outcomes, but also the type of ESD promoted. The outdoors are used in Peace school mainly to promote closeness to nature and to link the social aspect of ESD with the environment. In Green school the outdoors are mainly used to raise awareness about the need to produce and eat organic food and to raise consciousness about the importance of looking after the environment; in Outdoor School they are used to develop practical skills and links with the natural environment.

This section explored the purposes and meanings of having ESD in the schools, by looking at the way ESD and sustainable development are defined and what are the main motivations to have it in schools. With the potential of serving different purposes, as claimed by the literature and different educational policies and reports, ESD can be used to promote awareness about the need to protect the natural environment, to provide the knowledge and skills for a healthy and more 'sustainable' lifestyle, to mould responsible citizens and to reduce the environmental impact of schools. The study schools reveal similarities in the perceptions about ESD and in the passion towards sustainable development, however, there are considerable differences in the way ESD is implemented and the features are used. The

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[83] Retrieved from: http://www.forestschools.com/what-are-forest-schools.php

grounds of the school provide a good example of these differences, since it is an area which all the schools invested and developed, but the intentions behind it and the way the grounds are used vary greatly between the case study schools.

5.3 Factors that influence the development of ESD in the schools

So far I have discussed the main ESD practices found in the schools studied, and the intentions and purposes behind its development, providing examples of the way the interests and understandings of the staff differentiates the way features are used and practices are developed. Despite the importance of the personal and institutional ideas and interests in ESD, there are other factors that influence the development of ESD in the schools. These are related to elements that shape the access to the resources and the emphasis on specific areas. The size and location of the schools, the networks and social connections of the staff involved in the projects, the training and knowledge of the staff, external agents such as Ofsted and NGOs, together with other 'random' factors, are elements that facilitate or inhibit some of the projects and add further complexity to ESD.

5.3.1 Influences in the access to resources

It seems that for some schools it is hard to find the funds, resources and support from the Local Council to access 'green materials', this is due either to i) its location, as mentioned by one of the teachers of Outdoor School, who stated that they are a small school located in a rural area and therefore the opportunity to have subsidies to install solar panels, for example, is very remote; or ii) higher costs of these materials when compared to more traditional ones, and the difficulty to change the idea of "doing things in a safe and conventional/cheaper way", as explained by the site manager of Energy School,

> We haven't taken any account of green construction materials. We did the new hall and it is quite a recent construction. When we had the builders on site, we were looking at straw based walls and things like that which would have been a good feature of the school but it's just out, it's over budget. I am aware to some extent that these green materials in terms of construction were possible, it is just very difficult to justify when you can build it out, with a brick and steel (…) Construction materials like brick and concrete are the safest option as well and the cheaper option. (Site manager, Energy School)

Green School overcame the money problem and secure the use of 'eco-features' through "creative accounting of the school budget", good networking, knowledge about all the possibilities and donations from local businesses, without relying on the will of the local authority.

I was quite well informed of what the possibilities were and also to draw a line in the sand and say well no, we do want to have these materials and it meant some creative accounting with the school budget (…) We also managed to get £50,000 extra as a donation from someone who was impressed with the way we were operating the school. It was a local big business, so we managed to get some sponsorship and they said that would give that money if the local council match funded it so that gave us another £100,000. So, with the budget from the school we managed to put another £60,000 to it and also another savings so all together we managed to put together another £200,000 and that was just enough to secure most of the eco-features of the building and to have a design that's innovative rather than the standard design. (Headteacher, Green School)

The most successful schools in finding resources are those with a strong internal organisation and best external networks, which allow them to have the knowledge, contacts and resources to find the money, through grants or other schemes in order to develop projects in the school. Links, networks, relationships and social connections all seem to play an important role in the development of ESD in the schools. A good example is Green and Multicultural Schools. It was because the headteacher knew the 'right people' due to his university contacts and networks, that he could have access to knowledge and expertise that otherwise would not have been easily available. These external contacts, together with internal support and a team working together in the school, allow him to have the eco-features of the refurbished building and he is using the same strategy now in Multicultural School.

The PHSE teacher of Peace School also told me, during my visit, that her involvement and participation in different seminars, courses and workshops, and the contact with organisations, Local Authorities and other schools made her aware of the support, grants, awards, and opportunities that were available to the school. Outdoor and Energy Schools, on the other hand, mentioned some problems concerning partnerships and networks, mainly due to their local rural location and difficulty in attracting attention to their work.

The human, physical and financial resources available also influence the implementation and development of ESD. According to the respondents of the questionnaire, the main barriers to implement more ESD activities in schools are the lack of financial resources to have more projects and a shortage of time, both reported by 25% of the responses. Lack of available staff and an unconducive school building and grounds come in second in the choice of the respondents and those which seem less relevant are the lack of knowledge, motivation and support from local authorities, all with less than 10% of the responses, as presented in the graphic below[84].

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[84] In this question, the respondents were asked to choose the three main barriers to the implementation of more environmental activities in schools and so the results presented in the graphic result from the votes that each barrier had, they refer to the percentage of responses.

Figure 41 - Main barriers to the implementation of ESD in schools according to the questionnaire respondents
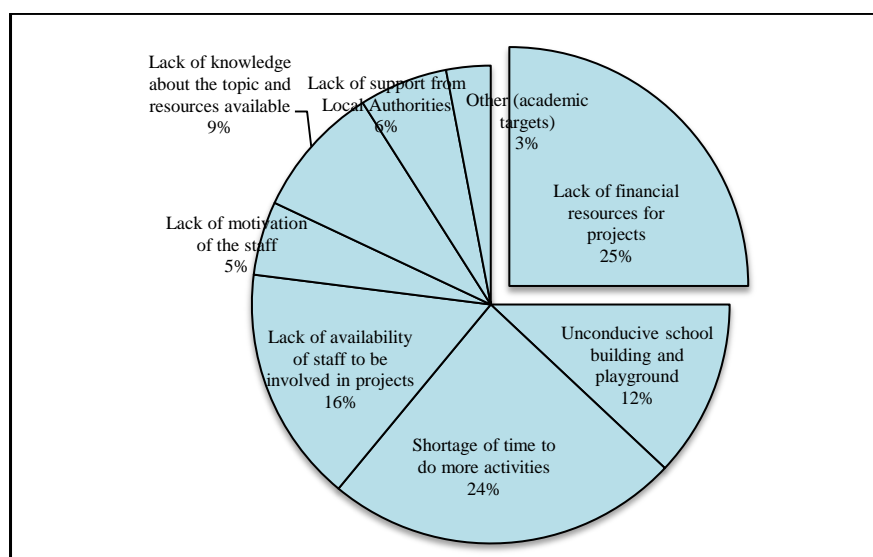
Among the case study schools, the lack of time/availability and an overcrowded curriculum are two barriers that all the schools mentioned as problems to implement ESD in schools.

> I think sometimes it's time. I mean the areas that I have built, all these tyres with the fruit trees in, I moved those from the back car park one holiday. The plants I planted in another holiday, the forest school area I built in the summer holidays, so you've got to have someone who is willing to give up their free time to do these things because you will not build that in a school day. (Year 1 and Outdoors learning Coordinator, Green School)

> Time, (the main barrier) was always time in my view. But I know that there were big staff cuts here last year and my biggest worry is the Kenya link because I did spend a lot of time doing that and the staff is really struggling because there is few people. The interest it is there and I know they all like it too, but there is so much people can't do, you just can't do everything so that is the hardest part (…) we don't have as many people who have the time and energy to give to projects. (Former environmental coordinator, Outdoor School)

The lack of financial resources is also mentioned by the schools as an obstacle to have more eco-features in the building and grounds. This constraint it is especially visible in Outdoor and Energy Schools, where it seems there is a strong will but no resources.

> I suppose, the obvious answer is money, or support from outside agencies, I mean clearly there are a lot of resources out there from people like Oxfam, from WWF and another groups, but in terms of things we could actually do in schools like the solar panels, I mean it is only the financial aspect that it is kind of stopping us from doing them (…) There continue to be and have been for a number of years a lot of people attached to the school who've got lots of ideas that you know could develop the school into a more sustainable kind of setup but ultimately is I mean the money available to do it. (Deputy Headteacher, Energy School)

It is the biggest barrier there is (money) (…) Anything you want to do it is just constraint by budget it is as simple as that. There has to be a real political will to do it, legislation which forces you to do it and other than that it's very difficult to change the status quo and the barriers are financial barriers. I think people in general, now you see much more awareness and people wanting to support green issues but the money is really difficult. (Site manager, Energy School)

The financial aspect, however, can also be an incentive to address ESD, to involve the school's community and to invest time and human resources in projects. Grants and awards are mentioned as a powerful tool to motivate people and bring more attention to ESD in schools. However, this type of incentive is limited and so will never become widespread, since most of the time these awards are competition-based, and so only the most successful schools would benefit from these grants.

Peace School won numerous prizes concerning its environmental work, which not only brought recognition but also funds that were used to develop areas for other ESD and outdoor activities. In 2005, the school was awarded with the 'National Bellamy award', £8,000 first prize for their environmental work. This money was used to develop new projects such as the wildlife area, the log pile, bird feeders and the wildflower meadow. In 2007, the school won first prize nationally in the 'Sustainable Energy in schools' category of the international 'Ashden awards'. The £15,000 prize was used to build a garden labyrinth, which has "become a symbol of positive energy, both physical and spiritual" (school's website). Their solar panels were also partially installed with a grant from the Department of Transport, which covered the initial installation cost.

According to its website, Green School was one of the leading schools in the country to develop ESD and have also won some prestigious awards as recognition of its work. In 2009, its newest building was awarded a 'Royal institute of chartered surveyors sustainability awards' attracting attention to the school concerning its eco-features and eco-materials in the new building's design. Outdoor School won £5,000 with the 'School grounds grant' which helped them to develop more the outdoor space and create new activities and projects in the school. The school also won a lottery grant of £9,000 that was used to extend the growing area. These examples can provide some guidance to understand the importance of awards, recognition schemes, measurement of development and achievements, the model provided by the 'Eco-schools' programme and other similar school programmes (such as the 'Healthy schools' awards, 'International schools' awards, or 'Inclusion' award) and why they are so popular among primary schools.

Although the lack of time, staff and funds appear as the main constraints to ESD, there are some teachers who disagree with these kind of reasons as justifications to not have more activities in the schools, using their own example to show that it is possible to find ways to

overcome these barriers, stressing the importance of using every opportunity to develop ESD,

> Oh Gosh, there is always the same, always the same answer you get. It is always time, money and people and we have an answer for all of these because it is not hard. It isn't hard and the people thing is not impossible because really you just need to look around it doesn't have to be teachers it can be teacher assistants or caretakers or dinner ladies or parents so there is a lot of people that could help. The money thing well if they really think hard about it, there are so many good things where you can save money that it's ridiculous to say you haven't got the money to implement environmental education because that it is just… There is so much you can do for free, and you just start with your own school and looking around and you can save quite a substantial amount of money if you just change behaviours and so on. Then time, well it is possible. I mean there are loads of points during the school week when you can do a little you don't need to do a lot, but you can, play time, lunch times, assembly time, after school clubs you know, there are ways and we proved that. (PHSE teacher and ESD coordinator, Peace School)

The factors mentioned above (e.g. location, support from the Local Council, knowledge, networks) exert an influence in the way schools access the resources needed to develop ESD, however, they only tell part of the story. Some schools with similar characteristics, access easily some of the resources if other factors are in place. It is the combination of different elements that determines the development of ESD. Some of these elements are going to be explored in the next section.

### 5.3.2 Influences of the expertise sources

Other influences over the development of ESD, which are more subtle and not necessarily accounted for: the ESD's staff training and organisations such as WWF, Food for Life or 'Eco-schools' programme, which target specific aspects of ESD and help/influence its development in schools.

According to the case studies, most of the ESD training is un-structured and self-motivated. Usually, one person or a small team is in charge of coordinating the activities and organising training sessions for the rest of the staff. In Peace and Energy Schools, there is a person coordinating ESD activities that does have not a formal training in ESD, but rather an interest about it. In Green and Multicultural Schools, however, the headteacher (which is the same person) has a formal academic training in environmental studies and sustainability and works closely with WWF in the production of some schools' material related to 'green leadership'. In Outdoor School the teacher coordinating ESD also has academic training in Geography and sustainability, however, it was until recently that he started his job in the school, before that the eco-coordinator did not have any formal education in ESD.

If one looks at the answers to the questionnaire, it is possible to observe that when asked about the main sources of information used by schools about sustainability, respondents

point out that the internet is the most important one (24%), followed by the television (13%), events (12%), newspapers (11%), courses/in-service days and films/documentaries (both with 10%). Books and academic journals are the lowest categories with 4% and 5% respectively[85], as shown in the graphic below.

Figure 42 - Main sources of information about sustainability according to the questionnaire respondents
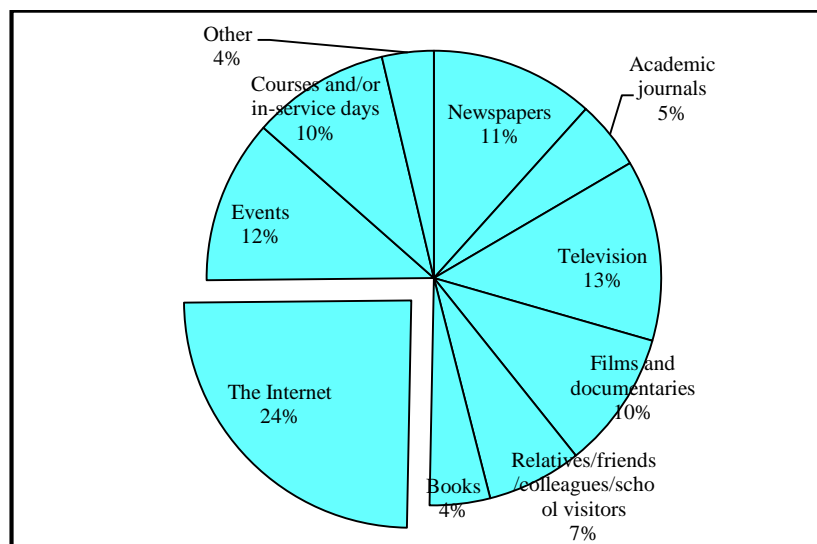
In some of the case study schools (Green, Outdoor and Multicultural) there are In-service-training (INSET) days allocated to ESD and all the schools try to have available financial resources to provide opportunities for the staff to participate in courses or workshops that could improve their knowledge and skills. However, the frequency and planning of this training vary from school to school. Peace School invested time and money in the PHSE teacher, giving her the opportunity to participate in national and international workshops, seminars and courses related to ESD. She also decided to do some courses at the Open University by her initiative in order to improve her skills.

Green School, and Multicultural School provide INSET days to discuss topics related to ESD, field trips whenever possible to teachers and teacher assistants, 'Forest schools' training for more than one member of the staff, 'Green leadership' courses[86] for one of the senior teachers and also tries to recruit new people who already have an interest in sustainability and ESD,

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[85] The respondents were asked to select three sources of information about sustainability that they considered most relevant. To build the graphic an account of the different choices for each source of information was calculated and so the pie chart illustrates the total choices divided by the different sources according to the respondents.

[86] A course called "Leading for the future" developed by WWF in collaboration with Commonwork. Retrieved from:
http://www.wwf.org.uk/what_we_wo/changing_the_way_we_live/education/one_planet_education.cfm

I got my job here because I had previously visited an eco-school and I was interested in working in one. I spoke about that in my interview and (name of the Headteacher) told me that was the main reason why I got the job, because of my interest in sustainability and my understanding of eco-schools. (Year 1 Teacher and Outdoor Education Teacher, Green School)

Outdoor School had a teacher responsible for ESD who is now retired. When the school started to teach about environmental education and ESD there was no training at all and the teacher learnt from her own experiences, by attending some workshops and seminars over the years. The current coordinator for sustainability has a degree in Geography and wrote his honours thesis about sustainability. He and the headteacher mentioned in the interview that, at the moment, training related to ESD is not a priority for the school, as it is quite expensive and there is a feeling that is already embedded in the school and that the staff is well prepared to teach it. There is a sense of 'moving on', a sense that ESD is done and what is needed is the development of the projects already in place. It is however interesting to see that when the teacher talks about ESD projects, in the quote below, he identifies mainly those concerning the outdoors and the projects developed on the grounds of the school, confirming the importance of outdoors learning for the school and the mental links between ESD and specific activities.

All these courses cost a lot of money and with the budget and the economy, we don't have lots of money to spend and it is really making sure that, you know, what are the priorities. I am not saying that sustainability it isn't a priority for us, but because it's quite well embedded particularly with the growing and the planting and the harvesting and the selling, it is not an area that I think we need to invest as much in at the moment. (Year 6 Teacher and Sustainability Coordinator, Outdoor School).

Energy School does not have any formal training or courses related to ESD and its introduction to the school seems to be done through the interest, motivation and expertise of the school's staff. The staff directly involved in ESD, the Headteacher, the Deputy Headteacher, the Year 6 Teacher and Eco-coordinator and the Site manager, work together using their knowledge and skills to implement more activities in the school. The Site manager has a doctoral degree in Engineering and a strong interest in sustainability and in the environment. Because of this he uses his expertise to improve, whenever possible, the efficiency of the school building related to water, gas, and energy, and this, in turn, may explain why these are the areas the school has prioritised.

The role of charities and volunteer organisations in the provision of information, posters, DVDs, books, visits to schools, and numerous online resources appears to be a very important resource concerning ESD. Charities give access to free resources and expert knowledge in areas schools, otherwise, would hardly have access to. Some examples are: the 'Eco-schools' programme and its nine topics and awards; WWF and its resources about

biodiversity and resource conservation; Farming and Countryside Education (FACE) which provide information to schools about farming and growing activities in the school grounds; Royal Horticulture Society that supports schools with gardens spaces and activities; Food for Life Partnership which supports schools in the provision of healthy school meals and cooking and growing activities and many others.

The importance of awards is also quite significant for there is a large amount of school awards related to food, energy, waste, inclusion, etc., and are the recognition of schools' achievements. The display of these awards in the entrance, corridors and/or in the webpage of schools provides evidence about how important these achievements are, working as a motivator to schools but also as distinctive features that can improve the image of the school and attract more pupils. All the five schools have numerous awards and also in the questionnaire it is possible to see that all the schools have one or more awards, as shown in the graphic below, being the 'Healthy schools' and the 'Eco-schools' awards those pursued by the largest percentages of schools, 61% and 57% respectively. Others, such as the 'International schools' award or the 'Inclusion' award and the 'Investors in People' award appear less frequently.

Figure 43 - Percentage of the questionnaire' responding schools with awards related to ESD
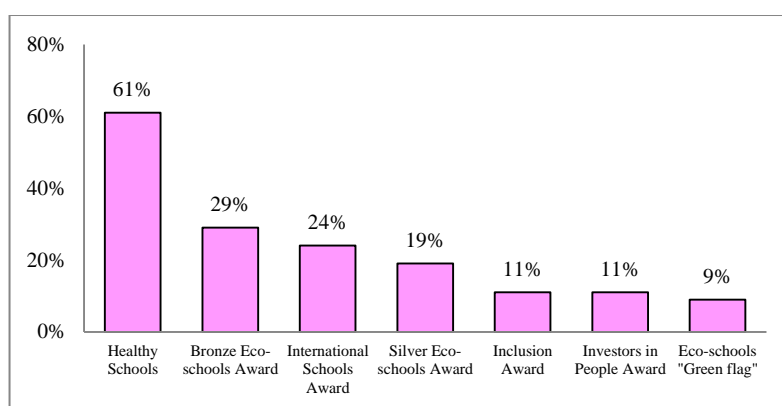
Although the percentage of schools with a green flag from the 'Eco-schools' programme is not very large, since only 9% of the respondents affirm they have it and only one school of the case studies has continuously renewed it (Peace School), the 'Eco-schools' programme is a very popular activity for primary schools in England (and in other countries). Its framework is used, many times, as a way to develop ESD activities, since it provides clear guidance about what it is expected from schools and what are the rewards or recognition gave to schools once those achievements are met. The use of the 'Eco-schools' framework is shared by four schools as a way to develop ESD and introduce the topic to pupils and staff. It is not surprising then that 24% of the questionnaire respondents said they have future plans

to attain 'Eco-schools' awards. These awards represent the second category with more responses, considering the activities planned related to ESD (with the first one being the outdoor space).

The 'Eco-schools' programme provides detailed information and simple steps for schools to become an 'Eco-school'. The granting of bronze, silver and green eco-awards is the main strategy used by the programme to engage schools. For each award there are specific criteria the schools should meet, so for example for a bronze award the school need to have an eco-committee, an environmental review, and an action plan, involving the whole school and linking it to the curriculum; the silver award requires developing further these features and also monitor and evaluate its work, developing at least one of the nine topics of the programme; and finally for the green flag, all the features above should be well developed and work on at least three topics should be developed.

The 'Eco-schools' way of introducing and developing ESD in schools is very popular and helps schools understanding the route to follow and what they are expected to achieve at the end, having at the same time visible, 'fast' results and recognition of their achievement.

In this section, I explored the factors that influence the access to the resources and the sources of expertise that can influence ESD in schools positively or negatively. An example of that is the location of the schools, with the rural schools complaining about the difficulty in accessing human, physical, and financial resources, which could otherwise facilitate ESD greatly. The training provided to the staff, something that appears to me as an essential element, it is mostly un-structured and self-motivated. There are some schools that hire people with knowledge about ESD or allocate INSET days to ESD but that it is not the rule. The role of awards such the 'Eco-schools' incentive the involvement of schools in the projects and it is a very popular way of developing ESD, focusing, however, in a more 'ready-to-use' formula rather than in a more reflexive approach.

In the final two sections of this chapter, I am going to look at the assessment tools and expected outcomes of ESD, to finish with a reflection of the limitations of ESD in schools, given the complex influence of the different factors playing a role in this problematic, as discussed through the chapter.

5.4 Assessment and expected outcomes of ESD

5.4.1 External assessment of ESD

External evaluation of ESD, namely by Ofsted, can also contribute to the development of ESD in schools. Ofsted recognises the importance of sustainable development and stresses that:

It wants to make sure that sustainable development is fully reflected in Ofsted's work so that: every member of staff can play an active part in achieving our objective of contributing to a sustainable future; we ensure that the providers we inspect and regulate are contributing to a sustainable future. (2010:4)

However, the inspection reports focus mainly on outcomes (e.g. achievements, behaviour, progress), the quality of provision (e.g. quality of teaching, pupil's needs, support and guidance), and leadership and management (e.g. driving improvement, engagement with parents and the community). One of the arguments presented by the 'Sustainable schools' strategy was that the eight doorways and the development of ESD in schools could support these areas inspected by Ofsted. However, and despite the reference in Ofsted about the relevance of sustainable development to their work and the efforts of DCSF to 'adapt' the strategy to satisfy the imperatives of the inspections, the synergy and its outcomes were not clear. Ofsted takes an integrated approach, reporting on sustainable development when appropriated within the framework and not as a discrete grade, since it argues that,

The providers we inspect and regulate take an integrated approach to sustainable development, promoting it through their core services, such as teaching or the provision of care, reflecting it in their values and ways of thinking and behaving, and in the way they engage with local people. (p.6)

This way of evaluating ESD in schools can be seen as suitable as it is more flexible and inclusive, however, if ESD practices and features cannot be quantified they become 'invisible' in official reports.

Despite this weakness, Ofsted can have a particularly important role concerning the development of ESD in the curriculum of schools, since it recognises the good work developed by some of the schools concerning sustainability, mentioning this aspect in its reports as a strong point and as an additional benefit to pupils. Ofsted considers ESD as a good stimulus to pupils and as a way to enrich the curriculum, making it more interesting and creative. It defines sustainability (2010) by referring to a "society that is just and equitable and takes account of the environmental limits of our planet, both now and in the future, at local and global level" (p.7). It also states that sustainable development in schools is often thought to focus on environmental challenges without considering the other two pillars: social and economic. Sustainable development should be more than recycling and energy efficiency, according to Ofsted, should be about "what we think and work towards common objectives of importance to children, young people and families now and in the future" (p.9). Sustainable development then covers a range of issues, including health, well-being and sustainable communities, in addition to issues such as waste management, energy use and resource management.

The work in ESD developed by the researched schools, in particular, Peace, Green and Outdoor schools, is noticed by Ofsted. The links between the curriculum and issues of sustainability and how well this curriculum focus supports the needs of pupils is stressed in the Ofsted reports,

> The curriculum has been extended well to support the school's excellent work in supporting sustainability and in ecology (…) A major strength of the curriculum is the work relating to ecology and caring for the environment. (Ofsted report Green School, 2009:7)
>
> The good curriculum supports the needs of pupils well. There are many stimulating activities for pupils to enjoy through a planned programme of visits out and visitors to the school. These include a major focus on 'Education for Sustainable Development'. (Ofsted report Outdoor School, 2008:6)

The Ofsted reports about of the case studies have in common the focus on ESD activities in schools, looking mainly at aspects such as healthy lifestyles, community engagement, good behaviour and social skills (care, responsibility, respect) and pupils' connections to the natural environment. It is not clear at the moment how this relationship between schools, Ofsted and ESD is developed and how much these institutions influence each other. So some questions arise: are schools taking into account what Ofsted highlights concerning sustainable development? Or, is Ofsted focusing on the aspects above only because those are more commonly found in primary schools and can be linked to sustainable development policies?

5.4.2 Assessment of the material aspects of ESD

The schools I visited assess some of their practices and features, especially those that can be quantitatively measured. The schools monitor the use of electricity, gas and water and try to display that information in the school on a regular basis. Peace School also monitors the use of paper, recycled material and other items consumed daily. Green School displays the amount of rainwater collected and measures the food wasted. Energy School monitors the use of electricity and gas weekly and has been able to reduce the consumption due to a better monitoring. Multicultural School was able to reduce the amount of energy consumed simply by increasing the staff and pupils' awareness and by turning off equipment and lights regularly.

The questionnaire respondents also stated that the schools have taken some initiatives for environmental reasons, as illustrated in the graphic below[87]. Considering the last term before the questionnaire was sent, one can see that the practices that half of the schools consider

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[87] In these two questions the possible answers were yes or no, so the graphics illustrate the percentage of schools stating whether they have done the activity or not.

having done for environmental reasons are only the separation of most of the waste for recycling (56%) and the cutting down of energy consumption (43%). The rest of the activities, most of them concerning purchasing, were done by less than 30% of the schools. Considering the monitoring of different materials/goods in schools, it seems that less than half of the schools watch what they use – except for electricity, which is monitored by 57% of schools. It is interesting to see that the element that schools measure the least is the waste produced, with only 21% of the schools reporting it. In contrast, the recycling material seems to be monitored by almost half of the schools, 40%. This monitoring is done by staff alone in 55% of the schools and the rest also involves the children. Half of the schools state that these activities are done weekly, and the rest reports doing it monthly (17%), termly (17%) and daily (16%).

Figure 44 - Measures and assessment of schools' consumptions according to the questionnaire respondents
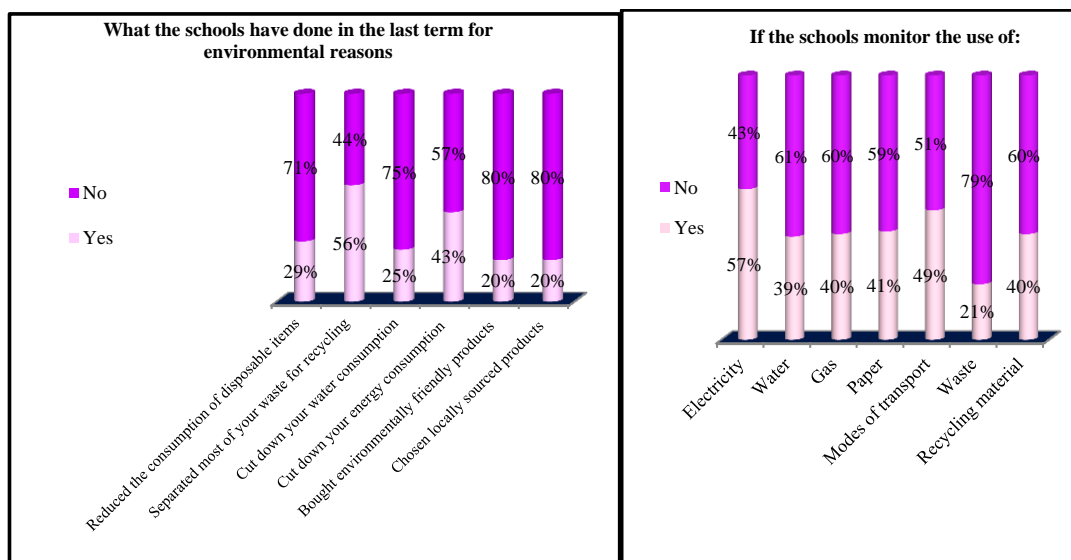
The data above reveal some interesting findings. The first finding is related to the areas, which most schools focus on: reducing energy consumption and increasing recycling. The second finding is the fact that in all the categories but one, recycling, more than half of the schools affirms that no monitoring was carried out in the last term considering the topics above. Similarly, the areas schools tend not to do, are the purchasing of environmentally or/and local products, the reduction the water use and the consumption of disposable items. Most of the schools tend to measure their consumption of energy and gas, and some of them also monitor the use of water, paper, recycled material and modes of transport. However, only a few schools (21% from the questionnaire) and none of the five case studies, reported measuring the amount of waste produced, being one of the aspects that schools tend to overlook.

However, and as mentioned in chapter one, the amount of waste produced by schools in England is significantly large, with an average primary school producing 45kg per pupil each academic year and an estimated 186,500 tonnes of waste (mainly by paper, card and food waste) being generated by primary schools per year in England (Recyclenow[88]). The third finding is the fact that none of the case studies, the schools considered to be examples of good practices, reported calculations of the school's environmental footprint and the measures taken to reduce it. It seems that schools are indeed taking some measures and developing projects, but it is not clear whether they know exactly the areas or equipment in the school, that bring more energy consumption, waste generation or carbon emissions.

5.4.3 Assessment of the 'non-material' aspects of ESD

Now considering the less quantitative outcomes such as the skills, knowledge and habits that ESD can provide to pupils, one can see that despite the absence of any internal evaluation in all the five schools, there is a categorical consensus about the benefits and impacts of ESD in pupils and, to some extent, in the staff and the community in general. All the headteachers, teachers, teacher assistants, other school staff members, Ofsted, and parents agree with the importance of teaching ESD and how beneficial it can be for the school and pupils,

> It is a really big difference in their attitudes. It is coming from below and all the staff does the same. We put the right paper in the right bin and we make sure the lights are turned off and the children remind us if we leave a computer on or a projector on, so we are always aware of this issue and it raised the awareness quite a lot. (Year 5 Teacher, Green School)

> Pupils make an excellent contribution to the school and local community. They readily undertake responsibilities, such as when they serve on the school and eco-councils and accept a range of responsibilities enthusiastically. Pupils are very aware of their environment and they work tirelessly to protect it (…) They are aware of the world around them, and their work in ecology promotes caring attitudes. (Ofsted, 2009, Green School)

The change of attitudes and the rise of awareness and responsibility towards the environment are two of the potential outcomes of ESD expressed by different authors. The quotes above are examples of the common discourses found in the different schools about the impact of ESD in pupils' attitudes and behaviours. There is also a sense that children are very enthusiastic about these kinds of projects and that they actually 'spread the word' to the parents/carers, as stated below.

> I think they are quite proud of the fact that we do this and they like it, they think it is important. It's not just us imposing this on them, they know about it and they want

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[88] Retrieved from:
www.recyclenow.com/schools/recycle_at_school_guide/start_recycling/how_much_does_your.html

to know more about it and learn new things, so we are kind of supporting them to do something that they feel it is important. (ESD Coordinator, Peace School)

I think the school pass on a strong message about recycling and saving energy, and I see that my son really enjoys the type of activities available in the school. He is involved in different clubs and he is quite proud of it, saying that he is 'saving the environment'. (Parent, Peace School)

It definitely supports the children and the family in being more aware about it (sustainability), I think. (Mother, Green School)

We've actually had parents saying to us before that they (the children) actually brought topics for debate home that they wouldn't otherwise have discussed at home around the issues of sustainability, and we try to involve parents as much as we can in that as well. (Headteacher, Outdoor School)

Another aspect also mentioned by some of the staff is the benefits ESD can bring to pupils in terms of self-esteem and motivation to learn, since the children tend to feel part of a bigger project, a project to 'save the world'.

Well, is a good thing for the children certainly (ESD) and improves their self-esteem a lot. They do believe that they are making a difference in the world (…) As far as their self-esteem and confidence I think it's been excellent for the school. (Teacher Year 6, Peace School)

There is an agreement among schools about the positive impacts that ESD has in pupils and staff, and there is a hope that providing them with knowledge, skills and good habits they will grow up taking into account their impact on the environment and being responsible in the use of resources. There are, however, also doubts and uncertainties concerning the continuation of those practices outside the school gates and with the transition to secondary schools.

I hope so, I would like to think so, but I don't know until I am an old woman one day and someone spots me on the street and says I remember you, you were my teacher in primary school. I live eco-friendly now, I am an eco-warrior, I am a tree hugger. Until that happens, I won't know. In my heart, I hope so, if they just remember one thing, just to take it with them, just lessen their impact on our planet then we have done something, haven't we? (Teacher assistant and nurture group/horticulture and school farm coordinator, Green School)

The children are very aware of the issues, whether they can truly influence their parents it is another issue. When we look at healthy living and healthy food, we still get children bringing lunch boxes to school that are packed with chocolates, crisps, and dreadful things (…) Sometimes their parents won't allow them to do things they want to do because it could be more expensive and it takes a bit more time. (Former Budget Manager and Eco-coordinator, Green School)

I think they do when they go home, I don't honestly know about the secondary school. I think it depends on the secondary school and I think one of the things is probably the 'coolness' fact of things that sometimes it's not cool to do something.

I don't know what impact that has (…) I think things like that comeback, saying give me the child until a certain age and I show you the man. If you get those values into them in an early stage it will certainly comeback. (Headteacher, Energy School)

The quotes above express the same concern and 'hopes' from the staff involved in ESD, however, those are articulated differently and highlight different aspects that could limit the long-term effects of ESD. The first teacher refers to the hope she has on the children living in a more 'eco-way', however, she is unsure about it and needs to see it in the future. Interestingly, she also mentioned the type of future adults she would like the children to be: "tree huggers, eco-warriors". So in this case she is not only talking about an education that raises awareness and instill habits of efficient use of resources, but rather an education that raises environmentalists and activists.

The second quote focuses on the limited power children have in the household and how sometimes the parents can constrain the activities of children inside and outside the school gates. The third one makes a distinction between activities developed at home and those in secondary school. For the headteacher of Energy School the family is not seen as problematic, but values commonly found in secondary schools, such as 'coolness', could undermine the continuation of ESD and activities developed in primary schools.

5.4.4 The children's perspectives on ESD

The children I talked to during my visits also seemed enthusiastic about the 'eco-features' of the school and the activities related to ESD. Some of the quotes below reveal their awareness, knowledge, interest and concern about the topic and environmental and social problems. The discussions around the pictures I handed out during the group interviews (available in the appendix 2)[89] show that there are similarities in the answers of pupils from different schools, and although the data collected concerning pupils' conceptions of sustainability is not sufficient to establish a pattern and conclude about the outcomes of ESD in their knowledge and behaviour, it can provide some interesting clues on how children translate the classes and activities practised in school into concepts and ideas about sustainable development.

Throughout this section, I present several quotes from the pupils about the pictures presented, the work of the school related to ESD and their opinion about their school. These quotes were selected to highlight specific patterns and themes found in the children's discourses, such as: the need to look after natural resources, concerns over the state of the world and the human contribution to climate change, loss of biodiversity, among others. I

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[89] The selection process of the pictures and the questions asked to pupils were discussed in chapter three, in the methodology chapter. In the appendices, the reader can find the pictures used and a list of the questions I used with the pupils from the different five case-study schools.

tried to present data from pupils from the different schools, with the purpose of presenting the similarities of themes, concerns and ideas between the different children.

The two following quotes are both from Peace School's pupils and are similar in a sense that both talk about the need to preserve and not waste resources such as food and water.

> So like if you have leftovers, share with people that don't have food and not just waste them. (Figure 20, pupil Year 6, Peace School)

> It is important to turn off the tap when you brush your teeth because you are wasting water and when I watch Nickelodeon, there is like a green kid thing and it says like in average in the UK we waste enough water when you are brushing your teeth to build an Olympic swimming pool. (Figure 21, pupil Year 6, Peace School)

The next quotes belong to pupils from different schools and are about the same picture. All the pupils associate the car with pollution and see it as a contribution to global warming and as damaging the environment. The car is described as "naughty" by one of the pupils and "bad" by another. The pupil from Energy School also mentioned the relationship between our actions and the "ice cap melting and animals suffering", talking about the selfishness of our actions and the lack of responsibility towards the environment. The second quote is about a picture showing a polar bear. In this case, the pupil immediately associated the bear with extinction and with human actions. This quote also reveals something else, the disappointment, the guilty and unhappiness of the child when she refers to humans' bad contributions to the natural environment and how that makes her feel. These findings can be seen as one of the unintended consequences of ESD that grow together with the increase of awareness among children in schools.

> Calculate your carbon footprint, which is like when you are in a car, is like you are putting a footprint on the Earth, you are damaging the Earth (…) Instead of wasting petrol and provoking traffic congestion, you can just walk. (Pupil Year 6, Peace School);
> I want to talk about the naughty car, you have to reduce your carbon footprint because of the environment. (Pupil Year 5, Green School);
> This picture shows the car making pollution and it's bad because it can provoke global warming. (Pupil Year 6, Outdoor School);
> Makes me think of when we come to school and we are walking, my older brothers are always whining about it and it makes me think that is silly, because they think only about themselves and they don't think about all the animals and ice caps that are melting because of the carbon dioxide. (Figure 22, pupil Year 6, Energy School)

> It is a polar bear that is about to get extinct. It is a shame because there are not many left in there and it's us who are doing it and we should just stop having carbon dioxide all over (…) When I think about all the bad stuff that man has created it makes me feel sick because it makes me feel very upset with myself. (Figure 23, pupil Year 6, Energy School)

The quotes above reveal that pupils make a direct connection between pollution, CO_2 emissions and environmental degradation, climate change and ice caps melting, showing a strong concern over the well-being of animals such as the polar bears. It provides some evidence on the way the popular discourse of climate change is assimilated by the children and how it gets 'personal' as the pupils grow feelings of disapproval and sadness over human actions.

Plastic bags are also seen, by the pupils from different schools, as something that should be avoided or, if used, recycled or re-used. Plastic bags are linked to nature hazards and seen as something that can distress and endanger wild animals, destroy habitats, or cause the death of animals by getting them trapped or suffocated.

> It is important to decline plastic bags because it could kill wild animals and stuff like that. (Pupil Year 6, Green School);
> It will destroy their habitats if you put plastic bags there and animals will suffer. (Pupil Year 5, Green School);
> Don't throw them out because, like some animals from the sea may eat them   or get trapped in them. I have heard lots of cases like it, got over the animal's head and the animal dies of suffocation because people just throw these bags away when they could be recycled or re-used. (Figure 24, Pupil Year 6, Energy School)

Fair-trade products are understood as something good and fair. The children from two different schools mentioned the importance of paying a fair amount of money to the producers. Pupils from Outdoor School related the fair-trade topic to Kenya, since this school has a close relationship with another primary school in this country, showing that, to some extent, the popular use of links with schools in other continents can provide a lively example and place sustainability-related concepts into a real-life context.

> (About fair-trade products) Things that come from other countries, but the farmers have good prices and stuff like that. (Pupil Year 5, Green School);
> If you buy fair-trade products it helps people that live in Kenya, fair-trade means that they will get a fair amount of money for the products they sell. (Figure 25, Year 6 pupil, Outdoor School)

The following quote refers to a picture showing different people from different races, gender and ages together around the world. The pupil who commented on it did not just describe the picture, but stated that there should be no racism or sexism in the world and that differences have to be accepted,

> Like everyone should or could be together and there should be no racism or anything like that, or sexism and it doesn't matter if everyone is different you just have to accept it. (Figure 26, pupil Year 6, Outdoor School)

Finally, the next two quotes refer to food. Here, one can see once again the connections children draw between the picture and the activities they carry out in the school. The first

quote refers to a picture with the sentence "cook a meal from scratch"; the child associated it with growing food on your own and reducing packaging. The second quote refers to a picture where there is a hamburger with fries and a fizzy drink. Although in some of the groups there were some pupils saying that they like hamburgers, most of the children showed knowledge about the importance of eating healthy food and not eating fast food on a regular basis. Additionally, this quote also shows concern about the meat itself and where it comes from, since the child talks about "fair-trade" meat, but also about animal's well-being, saying it should be "friendly to the cow".

> Cook a meal from scratch. I think it means to like, instead of buying loads of packages of food and stuff and ready cooked ones you should try and grow your own food and make it a little less with plastic which can't be recycled. (Figure 27, pupil Year 6, Outdoor School)

> I think it has fries and a burger so I think it kind of means like the same as before, but you need to eat a bit healthier because it will be better for the environment and stuff and also it will be better for you. (Pupil Year 6, Green School);
> I would say that the cow meat that you use in the burger you must make sure that it is fair-traded and friendly to the cow. (Figure 28, pupil Year 6, Outdoor School)

When asked about their school, all the children seemed happy with it and proud about its work concerning ESD and the environment. Children from Peace School highlighted the mix of people from different ethnic backgrounds and religions, saying that is a good thing and they are contributing to "stop racism" and to increase tolerance in the world,

> I like that we are a multi-faith school because some of my good friends are from different religions and we are all treated the same here; I like our school because everybody is friendly and we are trying to make a difference to the world and trying to stop racism and stuff like that and bullying because we are all the same. (Pupils, Peace School)

Pupils from Green School talked more about their eco-school features and that is a characteristic they like about their school,

> I like this school because we are eco-friendly, because it has that eco-fuel thing, plants and vegetables; Because it is eco-friendly and we just treat it right and other animals too, we like to treat them right as well. (Pupils, Green School)

Outdoor School pupils mention the enjoyment of having outdoor activities and how that makes them feel more enthusiastic about the lessons. They also talked about their work being eco-friendly and contributing to the environment,

> We grow quite a few vegetables and flowers and this is good. When we are learning about the environment, we are not just sitting in a lesson and watching the teacher talk, because we go outside and we try new things and it make us thinking about how things work and we enjoy it and not just sit and listening; Our work is quite

eco-friendly; We all like care for each other and I think that helps the environment around the school as well. (Pupils, Outdoor School)

Pupils from Energy School underlined the differences between their school and other schools, stating that they care about the environment and that is something they are proud of.

Our school is different like another school that my friend went to. It is different because they don't care about the environment and she wishes that they did and she suggested it, but they never took any notice about it, so we are a lot different to other schools, because we care about the environment and stuff. (Pupil, Energy School)

The limitations of the research and the complexity of the topic do not allow a conclusive answer to the effects ESD has on the children. My findings, however, provide interesting evidence about the way the pupils interpret what they learn in and outside the schools and about what they feel concerning, for example, CO_2 emissions or fair-trade products. It is not possible to determine conclusively whether these concerns are 'genuine' or a repetition of what they heard somewhere else; or whether these concerns are generated due to the projects developed by the schools or because of any other reason. Nevertheless, it is possible to observe very interesting details in the pupils' discourses: the empathy towards animals and the 'other'; the concerns over the state of the world; the willingness to contribute to the change they would like to see in the world; the contentment towards their school and the ESD projects.

Furthermore, all the testimonials presented reveal a certain coherence between the discourses of staff, parents and pupils. Staff highlighted the benefits for children and give examples of pupils initiatives and attitudes which reveal their knowledge and interest in the topic; parents also reinforced this finding saying that children are more aware of ESD and try to bring home habits and knowledge acquired in the school; pupils, as presented above, demonstrate a strong motivation and interest in the eco-features and eco-projects of the school and their answers also showed knowledge and bonds to the topic.

However, and despite the number of projects, curricular links and first-hand experiences in the different schools, I could observe only a few examples where critical thinking was addressed, such as a session of Philosophy for children (Peace School) where sustainable development (or rather issues related with it) was discussed and used as theme for critical thinking and different alternatives or ways to do the same things; or a fishing project in Multicultural School, where both sustainable and unsustainable fishing techniques were discussed considering opportunities, problems and challenges from both options.

This section presented the way ESD is measured in the schools and what is the perception of the different actors concerning its outcomes. Starting with the quantifiable material aspects of ESD, it is possible to observe that schools measure different aspects/areas from food

waste to recycled material. However, not all the areas are monitored equally. Recycling and electricity use are the areas which schools pay more attention to, while waste production is the less monitored issue. Concerning the 'non-material' aspects of ESD, all the staff questioned agreed on the benefits ESD bring to the schools and the children. It improves their attitudes and awareness towards the environment; it increases their self-esteem and confidence; it promotes enthusiasm to learn and participate in the school's activities, as discussed previously[90]. However, there is no formal assessment of these outcomes. In addition, aspects such as the feelings of guilt/anxiety in children, the incertitude of the long-term effects of ESD or the influence of the social and economic contexts are elements that should also be considered whenever ESD outcomes are debated.

5.5 Limitations of schools in delivering ESD

The analysis of the data collected and the findings I have presented above contribute to clarify not only the different purposes that ESD has in schools, but also the limitations in achieving the goals proposed, due to internal and external constraints.

Looking back at the main outcomes of having ESD in schools, according to the literature and the 'Sustainable schools' strategy – to reduce the environmental impact of schools, to produce future responsible citizens, to provide the skills and knowledge to live in a more 'sustainable' way, to increase the connections with the natural world – it is possible to conclude that there are several limitations in the achievement of those outcomes.

Efforts to reduce the carbon dioxide emissions of schools have not taken into account that 42% of the carbon emissions from the school sector, in the UK, come from procurement, and that the provision of services and goods to schools produces twice the amount of emissions compared to the operation of the school building and its equipment. Schools, in general, have little or no freedom in choosing their suppliers and in diminishing the quantity of material, packaging and transport to schools in the delivering of services and goods. In the case study schools, only Green School has the freedom to choose the suppliers, for the rest it is the local council who decides which companies supply the school, and these, according to the teachers and the headteachers I talked to, are usually the cheapest providers. This is true of the energy and water suppliers as well. A teacher in Peace school told me that she would like to have suppliers who have green policies and respect the environment, but she could not convince the Local Council to make that choice, as they were more concerned with the costs.

A similar situation occurs when it comes to the provision of school meals. Three of the five schools do not run their own kitchen and this means that the food supply and the menu are chosen and delivered by the Local Council, therefore these schools cannot do much about the

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[90] See pages 179 & 180 for examples on how different people stress the importance of ESD to develop these different aspects.

type of food and packaging they consume. Looking at the questionnaire responses, as a way of complementing these findings, one can see that more than half of the respondents (64%) stated that the provision of cooked meals is done by the Local Authority or other agency, confirming the fact that many schools cannot choose the type of food they offer to pupils and so concerns over the place where it is produced or how it is produced are not at the reach of schools' decision power.

Other factors that limit potential outcomes of ESD are the increasing use of ICT, the extended hours schools are open and the investment in rather small projects and eco-features such as vegetable plots, rainwater harvesting or energy saving light bulbs – instead of investment in large and structural projects that could reshape the entire building and the way energy and water are used, and waste is produced and disposed.

Another typical purpose attributed to ESD is the 'construction' of future citizens who can take care of themselves, of others and of the environment. The case study schools revealed that this is one of the central concerns and objectives: to promote values, ideas, habits that are seen as facilitators of a fairer and greener world. However, there are many uncertainties concerning the long term effects of ESD and those are related to i) pupils' transition to secondary schools where there might be further constraints, such as a stronger focus on core subjects or the 'coolness' discourse that can label ESD-related activities as not 'cool'; ii) the limited power children have in practicing outside the school these values and ideas; iii) the consumption-related messages transmitted by the media and children's resulting lack of opportunities to practice what they learn in schools, given our current social and economic development model.

The skills and knowledge needed to live in a more 'sustainable' way are another aspect which ESD aims to develop. The study schools provided some good examples of different projects and activities being developed in the curriculum and grounds of schools. However, and as discussed in chapter two, there is a tendency to assume that there is a specific set of skills and knowledge that will contribute to 'achieving' sustainable development; therefore most projects tend to focus on developing certain skills that are believed to enable specific future outcomes (e.g. growing vegetables; recycling).

The contrast of the most serious environmental problems in the UK, such as waste, biodiversity and pollution, with the issues schools think are important concerning sustainability, demonstrate significant differences. These differences reflect the lack of interaction between schools' ESD development and sustainable development goals/needs. These divergences can also be seen as symptomatic of something else. First, they demonstrate, to a certain extent, that ESD practices in schools do not necessarily reflect the most pressing 'needs' of the surrounding society or the most serious environmental problems affecting the region; second the fact that there is no structured training on ESD in the

majority of schools - which rely on NGOs, websites and local/international volunteer organisations and charities to access the information they need - can explain some of the standardised practices (namely the 'Eco-schools' programme) and the distance between what schools teach/promote and what in reality is happening at a national level.

The ESD practices developed by the schools are influenced by different factors as discussed in previous sections and the different combinations of those factors shape the way ESD is implemented. The figure below summarises these influences, according to my findings.

Figure 45 - Factors that influence the development of ESD in the schools

There is sometimes a tendency in the core ESD literature to link the development of this type of education with isolated factors such as a keen staff and leadership or the existence of outdoor space or financial resources. However, and as demonstrated by my research, the development of ESD practices is much more complex, it does not only involve a great number of factors but is also influenced by the way these factors are combined. For example, in Peace School the environmental work started 'by chance' with the painting of some murals on the grounds; these murals earned the school an award, and this award (money) was used, in turn, to build other 'eco-features', which received more awards. These opportunities, together with the interest of the headteacher and the PHSE teacher in the environment and ESD, transformed the school in a 'model' of good practices. The fact that the school focuses more on the development of the multiculturalism, inter-faith values and citizenship is the result of a mix of factors: the location of the school, the measures taken in order to attract people from different ethnic backgrounds, the intentions of the headteacher in

promoting a multicultural school and the work of NGOs, grants and awards available for schools that focus on these aspects.

Education for sustainable development takes different forms and serves different purposes in the schools I have studied. It is only by looking at the specificities and at all the possible combinations of the different factors that play a role in the development of ESD, that one can understand why ESD practices are so standardised and so diverse at the same time and why policies such as the 'Sustainable schools' or programmes such as the 'Eco-schools' have been used to develop the areas schools already have an interest in or knowledge of. ESD is an amalgam of influences, agendas, purposes and practices and each combination of these different factors will lead, possibly, to a specific outcome rather than a sudden transformation of pupils and schools into 'sustainable agents'.

So, despite the good ideas and projects, schools are developing and that can, or not be attributed to the idea of sustainable development, I argue that education and schools should not be seen as the solution to our 'unsustainable' lifestyles but rather as agents that can give a contribution to pupils and the community's well-being and enjoyment. The projects developed in the schools can have the potential to create specific knowledge, values and habits, which, depending on several factors, may or may not be continued outside the school gates and with a matching, in the future, to more sustainable lifestyles.

In a short paper by Scott (2013), the "large tacit assumptions about pupils' motivations, interests and knowledge" (p.14) are challenged. The author argues that there are several aspects that influence what pupils learn in Schools. These facts are, according to Scott (2013) pupils going to school with previous knowledge, experience, concerns; pupils not necessarily learning what teachers teach; pupils not being there to cure their parents' bad habits; or pupils not fully developing social and citizenry skills until they practise them for real. These statements, together with the analyses and the discussion I have presented above, help to understand why ESD cannot be taken for granted as a vehicle for sustainable development.

The next chapter will present and analyse the data collected with the questionnaire to the selected Portuguese schools. The evidenced collected with this exercise allowed a further exploration of the role of the context in developing ESD, since it revealed clearer how the different factors interact to shape ESD projects and outcomes.

Chapter 6

Research findings and analysis: insights arising from Portuguese comparison

This chapter will present the main results of the questionnaire applied to the selected Portuguese state-funded primary schools, in order to analyse the current importance of ESD in the schools' curricula and agendas and to provide some ideas for future projects[91], taking into account the English case studies and the 'Sustainable schools' initiative. The gathering and analysis of data from Portugal started with a request from my sponsor and ended up as an important exercise, giving significance to the context and highlighting important differences/resemblances between the two countries.

Besides presenting the main findings of the development of ESD in the studied Portuguese schools, this chapter is also used to contextualise the English study and should be understood as a sort of 'assistant case'. It aims to explore the role of the context in the development of ESD in primary schools, using the Portuguese case as a way of deepening the understanding of the complexity of factors and influences playing a role in the development of ESD in primary schools. By gathering data in England and Portugal, two countries with significant cultural and structural differences in their educational system and in the stage of development of ESD, the research provides important information about the main similarities and differences in the way ESD is understood, implemented and assessed in state-funded primary schools, revealing the way the context shape this process.

My research focused only on primary schools and, although the questionnaire was applied to a small number of schools, it highlights some important aspects about current ESD practices and how those relate to the context, perceptions and ideas of staff and organisations. Due to time constraints, it was not possible to include Portuguese case studies in the research, and so the questionnaire applied provides specific information on some of the research interests, but does not allow an in-depth analysis of the Portuguese reality. Since this questionnaire was translated and adapted from the English questionnaire it allowed a comparison between the two countries in particular questions.

The research, led by Schmidt et al. (2010)[92] aimed to map and characterise the situation of ESD in Portugal, and so my questionnaire can complement these findings by giving insights about how ESD is developed, why is developed, what are the ideas and perceptions teachers

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[91] A requirement from FCT (Science and Technology Foundation) my Portuguese sponsor was to provide findings about implications and recommendations for future projects in Portugal. So, this chapter will focus on the results of the questionnaire applied to the Portuguese schools, having in mind these considerations that will be developed in the conclusive chapter.

[92] Summarised on chapter four (point 4.2).

and headteachers have about sustainability and ESD and what are the main factors that seem to contribute or hinder this process.

Having these objectives in mind, my questionnaire was divided into four parts[93]: 1) Description of the school; 2) Organisation of the school; 3) Sustainability meanings and sources of information of the respondents; 4) ESD in the school. The chapter starts by describing and analysing the keys findings of the Portuguese questionnaire and ends with an examination of the main similarities and differences between the English and the Portuguese schools, in order to understand the importance of the context in the development of ESD.

Sustainability is mainly defined as 'protection of the natural environment', being the first choice of the respondents (31%), or as 'using resources carefully and efficiently' (29%). Other answers pointed at are the 'long term development', 'global citizenship', or the 'balance between human beings and the natural environment', as shown in the figure below. The main sources of information about sustainability are the television (31%), together with films and documentaries, and the internet (24%), followed by newspapers, books, academic journals, and courses and/or in-service days.

Figure 46 - Definitions of sustainability according to the questionnaire respondents
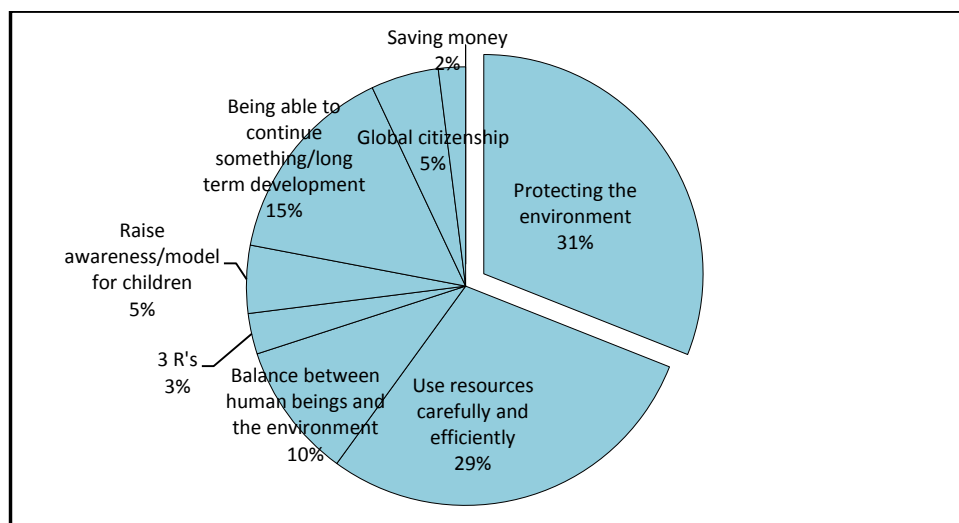
There is a strong link between the concept of sustainability and the conservation of the environment and the natural resources in the respondent's answers, highlighting the close

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[93] The Portuguese questionnaire is the same as the one applied to the selected English primary schools, with the exception of the last part about the 'Sustainable schools' strategy. The English questionnaire was translated into Portuguese and adapted to the national context, and can be found in appendix 5, together with the English version.

connection between ESD and EE in the Portuguese education system, as stressed before[94].
Also, the fact that only 9% of the respondents stated courses or/and in-day services as the main source of information about sustainability reveals the lack of formal training concerning ESD, resulting in a non-structured training or skills development[95].

Connected with the definition of sustainability are the themes the respondents think are the most important, to them personally and to be taught in schools. The graphics below illustrate that 'the protection of the natural environment' (25%), 'renewable energy' (12%) and 'recycling' (12%) are the issues respondents consider the most important ones. The themes schools feel they should teach do not differ much, since 'depletion of the natural resources' is the most selected issue (27%)[96]. There is also a visible correspondence between ideas about sustainability and environmental protection, that if one considers 'depletion of natural resources' in a broader sense, where the natural environment and its richness are the main concern, despite the motifs behind it (e.g. for the benefits of humans, to continue with our lifestyles, etc.). I believe the emphasis on the 'natural aspects' rather than the social ones (such as global inequalities, poverty, etc.) demonstrates, to a certain extent, the respondents' mental links between sustainability and the natural environment.

Figure 47 - Most important issues about sustainability as consider by the questionnaire respondents


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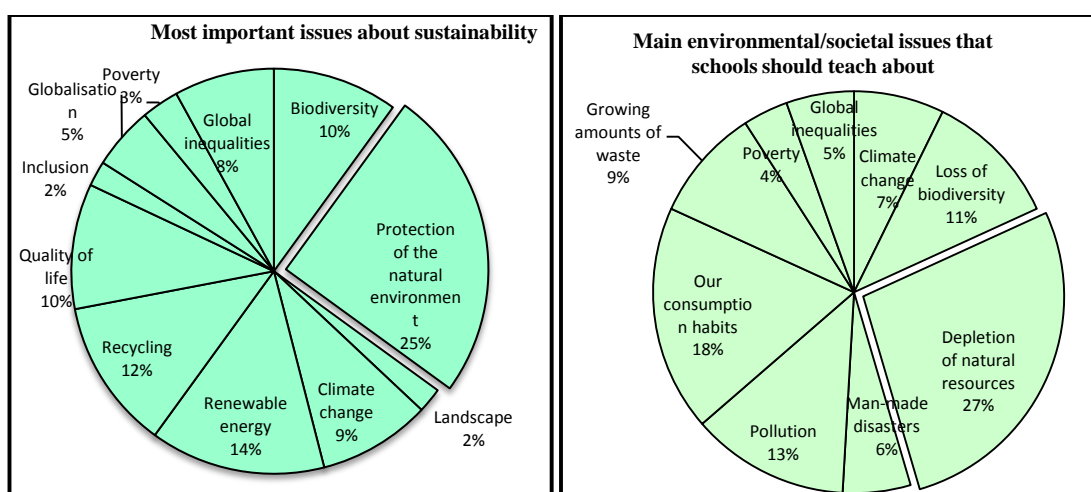
[94] In this case, the question in the questionnaire was open and so the respondent answers were aggregated into categories. The pie chart represents the total of answers divided by the categories created according to the main aspects mention in the answers.

[95] The respondents were asked to select three sources of information about sustainability that they consider most relevant. To build the graphic an account of the different votes for each source of information was calculated and so the pie chart illustrates the total votes divided by the different sources and which are more important.

[96] In these two questions, the respondents were also asked to choose the three most important issues (a) about sustainability (b) that schools should teach about.

Looking at the role of schools in the promotion of sustainability, the data show that the vast majority of respondent schools (87%) strongly agrees that schools should have a greater role in instilling good practices concerning the protection of the environment and the main reasons appointed are the promotion of 'habits and attitudes for the future' (34%) and the 'need to look after the planet' (33%). When asked about the benefits of ESD for children, the respondents think that ESD 'increases awareness and responsibility' (33%); contributes to 'future quality of life' (21%); increases the 'ability to make good life choices' (16%); and contributes to both the 'development of good habits' (16%) and 'ensuring a positive future' (9%). These findings suggest that respondents associate the learning of ESD mainly with a 'better future' and quality of life, but also as an education that increases the awareness and responsibility of children as future citizens, highlighting the moral aspect of it.

Figure 48 – Questionnaire respondents' opinions about the role of schools in promoting good practices concerning the protection of the planet
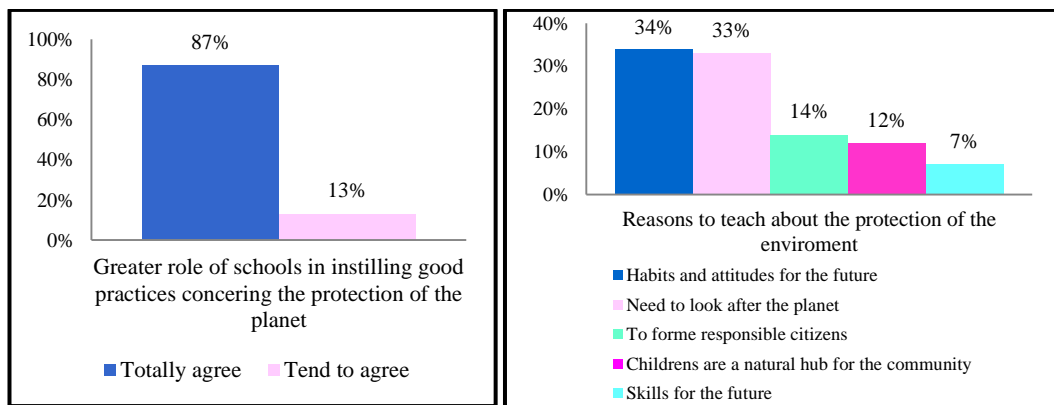

The respondents consider themselves to be familiar with the concept of sustainability, but they think the school community is not all that well informed. This information is more interesting when compared with the time spent with ESD activities and future plans.

**Figure 49 – Questionnaire respondents' familiarity with the concept of sustainability**
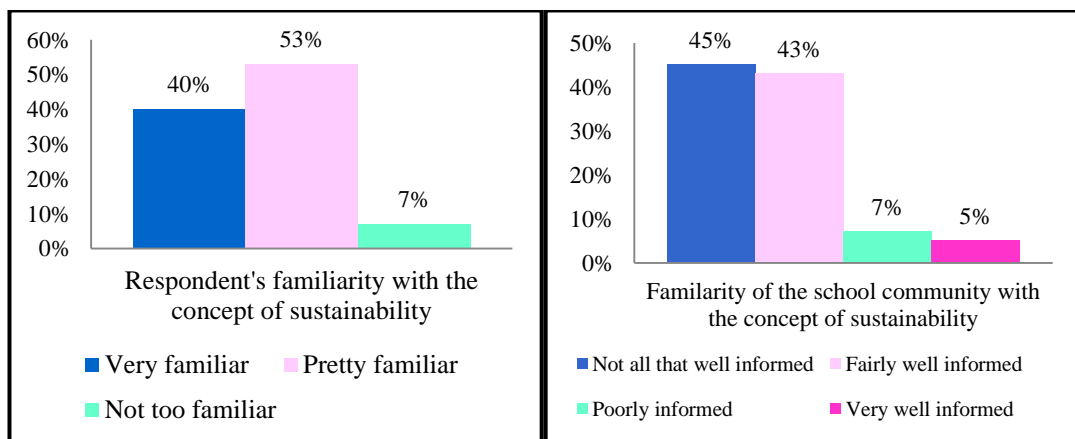
The majority of respondents (75%) considers that ESD is taught very often, however, only 1% stated that it is taught more than three hours per week; 44% of the respondents said that between one and three hours per week are spent teaching ESD and 36% less than one hour per week. The lack of time allocated to ESD and the fact that there is no reference to it in the national curriculum may on the one hand, explain the perception of it being taught very often (for a non-existent curricular or extra-curricular subject) and, on the other hand, confirms the idea that the school community is fairly or not well informed about sustainability.

**Figure 50 - Regularity of ESD teaching according to the questionnaire respondents**
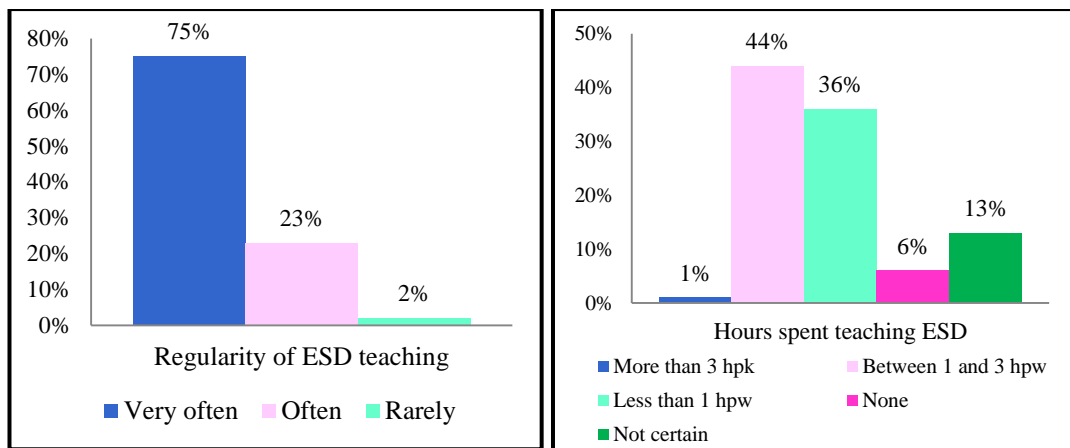
In terms of future plans, only a little more than half of the schools (56%) have plans to develop more activities related to ESD and those are concerned mainly with plantation activities (vegetable plots 28%), involvement of parents in the school's events (26%), and the 'Eco-schools' awards (20%). It is relevant the fact that 44% of the schools do not have further plans to develop activities, especially when one looks at the current projects found in the different schools, as illustrated in the figure below.

Figure 51 - Plans to develop more activities related to ESD according to the questionnaire respondents
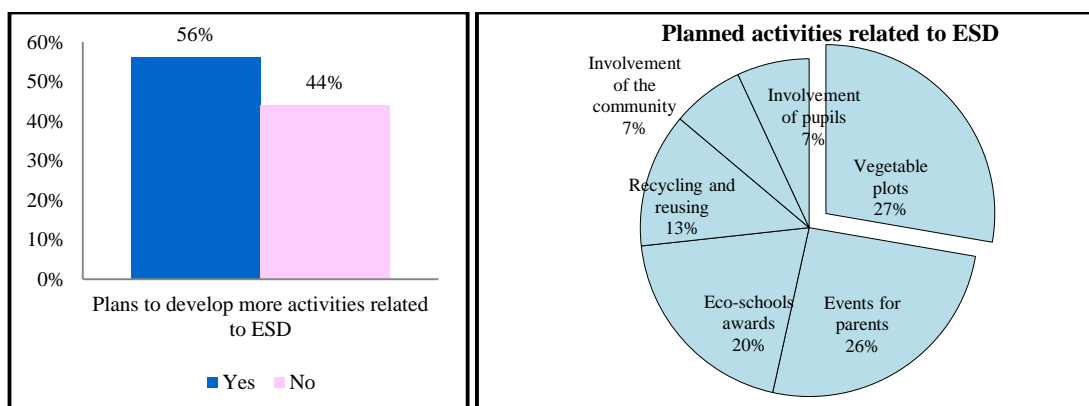
When asked about actions developed in the school for environmental reasons, during the last term, the graphic below shows that the separation of waste for recycling is the category that more schools reported (53%), followed by the reduction of energy consumption, disposable items and water consumption, each reported by less than 40% of the respondents. The less regular actions in schools, according to the respondents, are those related to purchasing, so less than 20% of schools buy eco-friendly products and only 9% consume locally sourced products. Also, the monitoring of commodities and activities is low across the respondents, with less than 30% of schools monitoring all the range of commodities/activities – except for recycling material, which is monitored by 35% of the respondents. Recycling material, water, electricity and paper are the goods/services more assessed by the schools. This monitoring is done mainly by the staff, but some respondents (35%) state that the children are also involved in the process. The information is available to the whole school in 82% of the cases through lessons, meeting and in the 'Eco-schools' meetings. The monitoring of modes of transport is practically inexistent, since only 1% of the respondents stated that there is an assessment on it[97].

Figure 52 - Measures and assessment of respondent schools' consumptions according to the questionnaire respondents
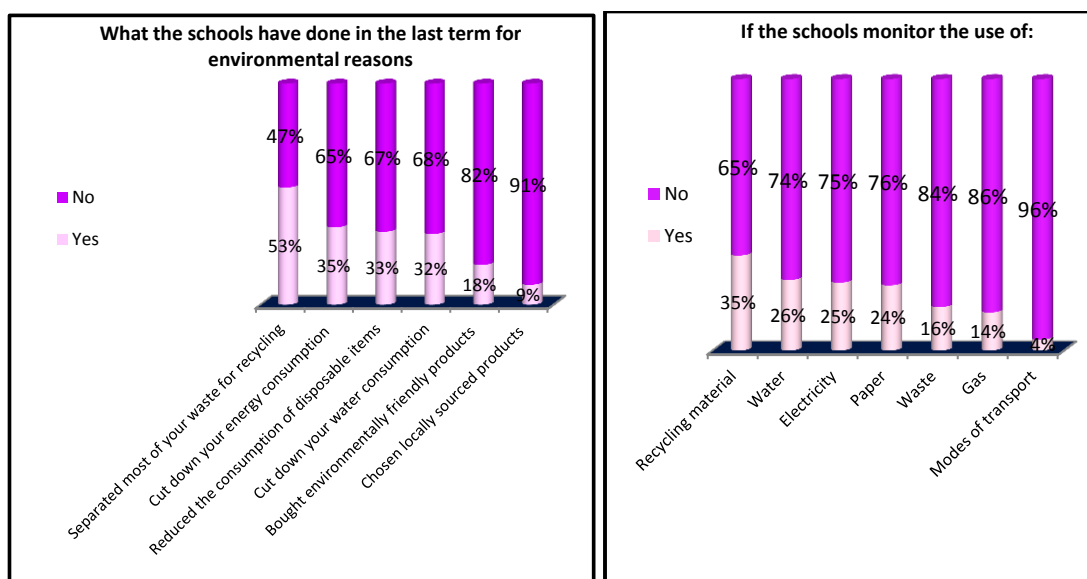

Others aspects frequently associated with ESD, such as the use of the outdoor space to teach and the importance of raising awareness about healthy meals/lunchboxes were also part of the questionnaire and the answers of the respondent schools reveal that almost half of the schools (47%) use the outdoor space very often to teach, at least once a week, but a considerable number (26%) are not certain about it, and the remaining schools use it less

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[97] In these two questions the possible answers were yes or no, so the graphics illustrate the percentage of schools stating whether they have done the activity or not.

often, once a month or once per term. The fact that many schools cannot state clearly how often this space is used may be related with the unstructuredness of ESD activities and the lack of a clear space of ESD in the schools' life.
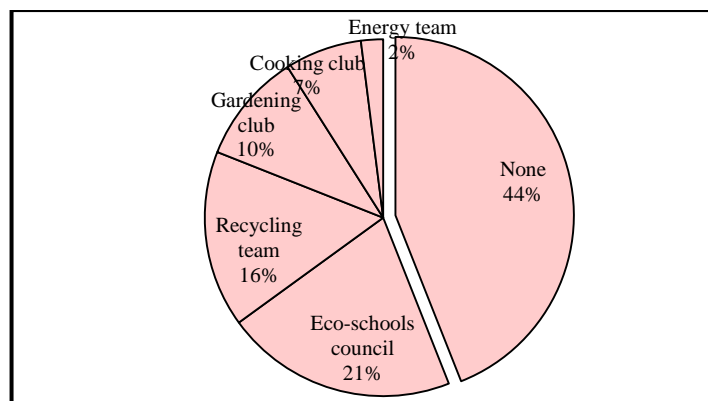
All the respondents affirm that the school explains to pupils the importance of healthy meals through special events, parents meetings and lessons. Most of the schools (55%) said that this is done frequently and the rest stated that is done termly (17%), monthly (16%) or annually (12%). A large percentage of schools (73%), however, does not source the ingredients or prepare the meals, but these are provided by the local authority or other agencies, revealing the constraints of schools concerning the purchasing aspect and the potential lack of power to purchase locally produced ingredients or more environmental friendly products.

Figure 53 - Regularity of the use of the outdoor space and 'talks' about healthy meals according to the questionnaire respondents
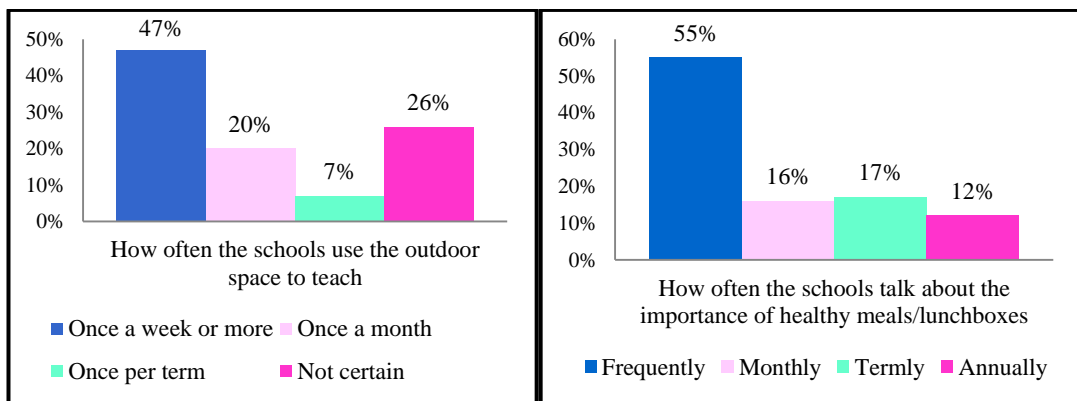

Almost half of the schools (44%) stated that pupils' clubs or teams are inexistent in the school, and the one present in more schools is the 'Eco-school' council/team (21%), followed by the recycling team (16%), the gardening club (10%), the cooking club (7%) and the energy team (2%).

Figure 54 - Pupils' clubs existent according to the questionnaire respondent schools

Looking at the more visible aspects of sustainability in the buildings and grounds of schools, one can see that the most common features in the schools are recycling bins, with half of the respondents affirming that their school has them. Recycling bins are followed by raised-bed gardens (44%), and energy efficient lighting (33%), as presented in the figure below. More structural features such as installed roof and wall insulation, double glazing and water saving systems are present in less than 30% of the schools. The features more rarely found in the respondent schools are wind turbines, rainwater storage system, wildlife areas or farm animals, each found in 5% of the schools or less[98].
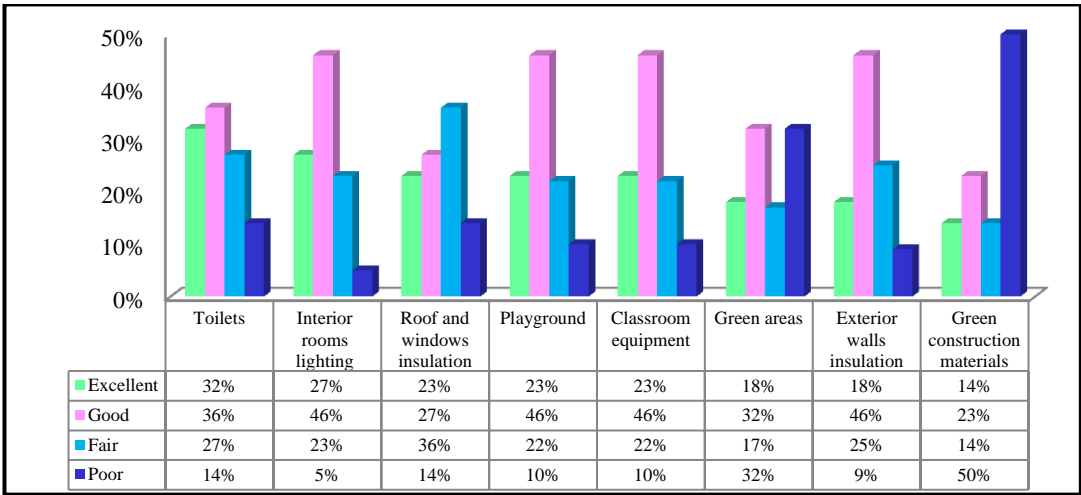
Figure 55 - Eco-features of the schools as reported in the questionnaire
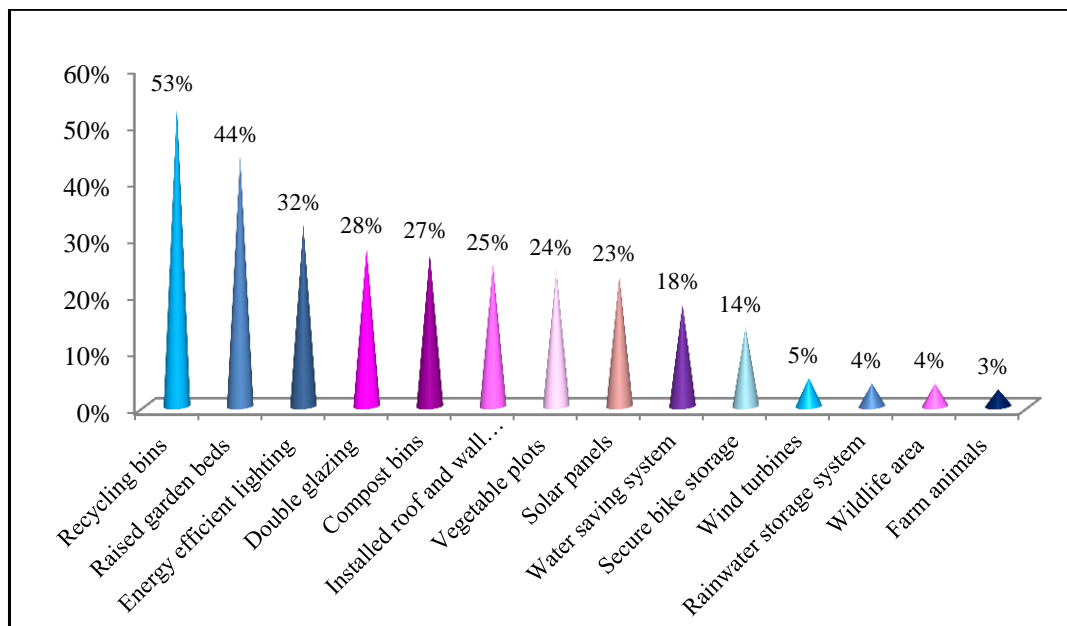
Also, half of the respondents stated that the use of green construction materials is poor and a significant number (32%) said that the green areas are also poor. Other aspects such as insulation, lighting, classrooms, and playgrounds are considered to be generally good, as shown in the graphic below.

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[98] The question asked the respondents to select all the features that the school has. The graphic illustrates the percentage of schools stating that those features can be found in their schools.

Figure 56 - Conditions of the school building and grounds as described in the questionnaire

	Toilets	Interior rooms lighting	Roof and windows insulation	Playground	Classroom equipment	Green areas	Exterior walls insulation	Green construction materials
Excellent	32%	27%	23%	23%	23%	18%	18%	14%
Good	36%	46%	27%	46%	46%	32%	46%	23%
Fair	27%	23%	36%	22%	22%	17%	25%	14%
Poor	14%	5%	14%	10%	10%	32%	9%	50%

An unconducive building and playground are considered to be an obstacle to ESD activities (11%), although are not the most important ones. Shortage of time to do more activities (27%) and lack of financial resources for the development of projects (25%) are the two major obstacles according to the respondents. Other issues, such as lack of support from local authorities, lack of motivation, knowledge, and availability are also seen as potential barriers[99].

Figure 57 - Main barriers to the implementation of ESD in schools according to the questionnaire respondents

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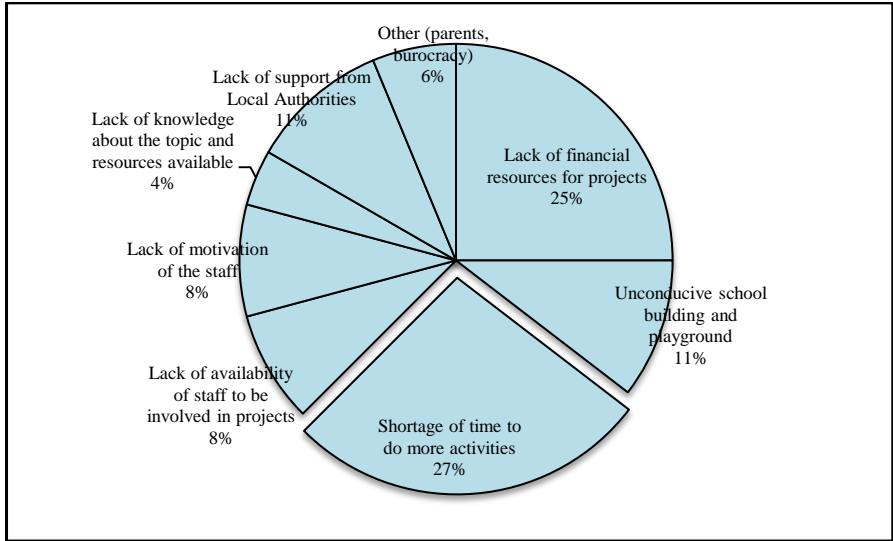
[99] In this question the respondents were asked to choose the three main barriers to the implementation of more ESD activities in schools and so the results presented in the graphic result from the total number of choices that each barrier had.

Although the shortage of time and financial resources are seen as the main obstacles to the promotion of ESD in schools, there are more specific reasons highlighted by the respondents that can give a clearer picture about the problem. The graphic below shows that although there is reference to 'very tight budgets' (7%) and 'government cuts' (5%) it seems that the major problem is related to heavy workloads and to the amount of projects to develop in an already overcrowded curriculum, together with a lack of information, difficulty in finding the resources and in some cases the old age of buildings and limited green spaces[100]

Figure 58 - Main barriers to ESD explained by the questionnaire respondents
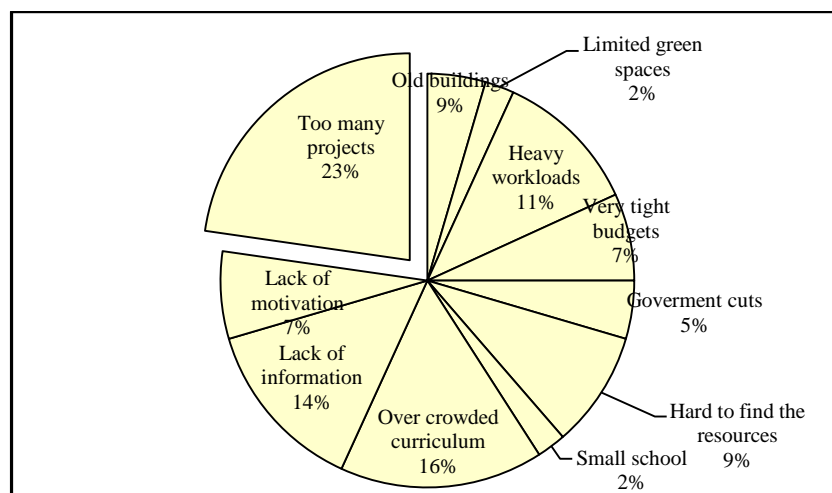
Summing up, the data shows that perceptions, ideas and practices concerning ESD are mainly related to ESD's environmental aspect, and that projects are developed usually through the 'Eco-schools' programme and in the grounds of the schools. There is a strong feeling that schools should have an important role in transmitting and instilling values and practices for the protection of the planet and those are mainly concerned with moral premises that can provide guidance to develop 'responsible and caring citizens'.

There is also a sense that the familiarity with the concept of sustainability changes among different actors related to schools, since the respondents considered to be familiar with the concept but think that the school community is not very familiar with it. Furthermore, the lack of an official reference to ESD in the curriculum makes it difficult to assess ESD practices, so the findings about schools considering that ESD is taught very often can be explained by the fact that ESD is an extra-curricular activity that includes almost anything done in the grounds or in the building of schools such as activities related to green spaces, energy consumption, 'good habits' or awareness about environmental problems.

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[100] This question was an open question where the respondents were asked to explain their choices about the barriers in the previous question. All the answers were then aggregated into categories.

6.1 The role of the context in developing ESD in primary schools

The application of the questionnaire to the selected schools in Portugal provided useful information that complements previous studies about ESD in the country and allowed an understanding of the main differences and similarities between the Portuguese and the English cases. Despite the useful insights that the Portuguese data bring to the understanding of the role of the context in developing ESD in primary schools, there are also limitations. The fact that the research did not develop case studies in Portuguese schools and the number of schools that answered the questionnaire being relatively low, limits the amount of comparisons that can be done between the two countries and the conclusive arguments that emerge from its analysis. Nevertheless, the data collected in Portugal provided the opportunity to deepen the understanding of the way the different factors play a role in the development of ESD, helping in the explanation of the multiplicity of issues involved in ESD.

It was expected that ESD was more developed in English schools than in Portuguese schools, given that there has been a greater effort in England for making ESD a priority through different schemes and projects developed by the former government and different NGOs, as described in previous chapters. Despite this expectation, I found the following similarities:

a) In both countries,sustainable development is mainly defined by talking about the need to protect the natural environment and use resources more carefully;

b) ESD is seen as a way of developing responsible citizens and providing habits and attitudes for a better future;

c) The majority of schools, in both countries, agree that schools should play a greater role in instilling habits for the protection of the environment;

d) There is a general lack of formal training in both countries, however, some of the English schools provided training for the staff;

e) The main sources of information are the Internet and the television;

f) The areas and eco-features more present in schools are recycling and recycling bins, vegetable plots, compost bins and energy efficient lighting, common in both countries, but with a bigger percentage of English schools stating the existence of eco-features;

g) In the majority of schools the major barriers to implement further ESD activities are lack of time and financial resources.

These similarities can be partially explained by looking at the important role of NGOs in delivering ESD in schools, as shown in chapter four and further discussed in chapter five. Martin (1996:44) highlights the influence of NGOs on Environmental Education, stating that

NGOs, especially the biggest environmental agencies, are able to influence public perceptions of areas of concern, and thus "the environment become closely identified with the interest of the biggest conservation bodies". Brown (1991:820) talks about "bridging organisations" and suggests that NGOs can play key roles in dissemination specific visions and influence institutions and policies. DCSF (2008c) also established the connection between the eight doorways of the 'Sustainable schools' strategy and the different programmes developed by different NGOs[101], suggesting that the different doorways could be developed by using the framework proposed by, for example the 'Eco-schools' programme or the 'Food for life' partnership, leading to a high degree of standardisation in terms of features and projects developed between the schools.

Together with the important role of NGOs in developing ESD in primary schools, we could also observe that the media, especially the television and the Internet, exert a great influence in the knowledge and information that the staff from the different schools have about sustainable development. In combination with the influence of the media, one can also observe the increasing importance of the global system in the shaping of national education policies (Rizvi & Lingard 2010:3), helping to explain the similarities found in both countries, despite the physical distance between them.

Now looking at the differences, one can observe that several points are divergent:

a) The regularity of ESD activities – compared to the number of English schools (20%) stating that ESD is taught very often, a majority of the Portuguese schools (73%) holds the same opinion. However, when one looks at the hours spent with it, the English schools have a biggest percentage in more than three hours per week and there is a similar amount of schools in both countries spending between one and three hours per week with ESD activities;

b) Assessment – it is lower in the Portuguese schools and the activities that are more frequently assessed are recycling, water and energy use; in the English case there is a more frequent assessment of the commodities in schools with an emphasis on electricity, modes of transport, paper and gas use;

c) Clubs and teams – there are many more schools with clubs and a greater variety of clubs and teams in the English schools, and since clubs are a privileged way of developing ESD it can be more difficult for Portuguese schools to have ESD activities;

d) Future plans – The percentage of English schools, stating that they have plans for developing more ESD activities is far greater than the Portuguese, 84%

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[101] See figure 25.

against 56%. The areas that the schools want to develop, however, are similar: the outdoors and the 'Eco-schools' awards.

These findings suggest that the ESD perceptions and projects developed in both countries are very similar, but there are also differences. These differences are mostly concerned with the people involved, the time and the resources allocated to ESD, and are important because they reveal, to a certain extent, the importance of the context and the way the different factors influence ESD.

So, thinking about the diagram presented in chapter five (figure 45) about the factors that influence the development of ESD in the schools, the external agendas (e.g. NGOs, sustainable development goals), the resources available (e.g. time, people, space), the geographical context (e.g. location, size), the instrumental factors (e.g. knowledge, training), the personal interests (e.g. motivations, perceptions), and the 'random' factors (e.g. luck, timing), one can argue, looking at the main differences between the two countries, that despite the common perceptions and motivations about sustainable development and the similarities in the projects developed, the majority of the Portuguese schools researched have less activities, less people involve, and less opportunities to develop further ESD.

These differences and the Portuguese case emphasise and clarify some of the findings gathered with the English case. It is highly noticeable after this analysis that the pupils' clubs and teams, much more common in England than in Portugal, are an important space and time to develop ESD-related activities; that the outdoor space, also more abundant in British schools, is a privileged space to develop ESD projects; that the assessment of some of the things that contribute to the environmental impact of schools (e.g. consumption of energy, water, paper) is also more frequent In England than in Portugal.

Having begun as a requirement from my sponsor, the Portuguese questionnaire turned into a way of emphasising the factors that play a greater role in the development of ESD in primary schools, by providing the contrast needed to understand the role of the context. It delivered the data to understand better to what extend the ESD practices are standardised, what kind of elements influence that standardisation and what are the specificities and the divergences beyond that standardisation.

The next and final chapter, will bring together the key findings of the research, the main arguments of the ESD literature and the 'Sustainable schools' policy goals, in order to contrast practices with expectations. I will look at differences in interpreting and describing what ESD should be, should promote and should achieve according to these three different sources.

Chapter 7

Reassessing the 'Sustainable schools' policy, literature & practices of ESD

This final analytical chapter aims to contrast the core ideas presented by some of the most influential ESD literature[102] and the 'Sustainable schools' policy with the practices found in the schools. I will focus on some of the key findings of my research, in order to contribute to a better understanding of how these three 'actors' (literature, policy and schools) influence each other and shape the design and practise of ESD.

My main interest in this chapter is to analyse further the relationship between schools and sustainable development, by expanding my findings from chapter five. The 'Sustainable schools' policy suggested that sustainable development supports schools' core objectives and improves the areas of interest to Ofsted; in turn, schools support national sustainable development policies through the programme (DCSF 2009c). These assumptions are common in the literature and policies. However, the evidence of those benefits and how these relationships are developed, have only been partially researched. My research offers an important contribution to understand the factors playing a role in the way schools influence the achievement of sustainable development and of the benefits and problems sustainable development brings to schools.

With the aim of providing an analytical summary that presents concisely some of the key arguments, the information was gathered from three sources – 'literature' where ideas and contributions of different authors are discussed; 'policy' where the contributions of the 'Sustainable schools' strategy are analysed; and 'schools' referring to the practices found in the study schools (both in the case studies and the questionnaire[103]). The information in this chapter has been abbreviated so the contrast could be more easily perceived.

The previous chapters look at the core ESD literature, the 'Sustainable schools' policy and the study schools in detail, and so with this chapter I am aiming at discussing some broad and general differences/similarities between these different agents and not to engage in detail with the specificities of each contribution. This chapter aims to provide a 'bridge' between the main arguments in the literature, the suggestions of the policy and the practices of the schools. The use of the word 'actors' to describe the different discourses and interpretations concerning ESD has the main purpose of highlighting the differences interplays among these

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[102] By 'influential ESD literature' I mean mainly the literature which is more often cited in official reports and articles and better known, especially in Britain. My choices of the literature reviewed in chapter two shaped the authors I am mentioning in this chapter.

[103] The use of data from the case studies and the questionnaire, in this chapter is justified by the nature of the chapter, which pretend to highlight the main differences between some of the literature, the 'Sustainable schools' strategy and my findings. I believe that the inclusion of a diversity of data from different sources make this contrast more relevant and provide a more robust evidence of my claims.

three levels of comprehension of the relationship between sustainable development, education for sustainable development and schools.

By looking at four key points: (i) practices; (ii) purposes; (iii) experiences; and (iv) expectations[104] of ESD I will present evidence about the differences and similarities concerning the perception and the implementation of ESD. Each title of the following sub-sections represents my key arguments regarding the way I perceived the variances in interpreting and describing what ESD should be, should promote and should achieve according to the different 'actors'.

The importance of 'small' and visible projects in contrast with the 'big' and ambitious plans proposed by some of the literature and policies as well as the doubts raised by some of the staff about the claimed long-term effects of ESD are going to be debated with the aim of contributing to the discussion of pressing and unanswered questions such as the role of schools and education in the transition to a 'greener and fairer' world, or the kind of 'sustainability' schools are supposed to develop and promote.

7.1 Practices: from large to small

My argument here is that there is a 'messiness' in the way ESD is developed in the schools. 'Messiness' in the sense that ESD is mainly developed without a clear and organised structure in the studied schools.

There is a focus on 'small' projects whenever opportunities arrive. There is a tendency to develop 'fashionable' programmes such as the 'Forest schools' and call it ESD, despite the lack of a clear connection between this programme and sustainable development goals. Policy and literature fail to take account of this 'messiness', and so most of the policy/literature's proposed achievements are unrealistic. As stressed by Ney (2009), most contemporary policy problems are messy in the sense that they involve a great amount of uncertainty and complexity. For Ney (2009:25), problems such as climate change are messy because of the conflicts they generate about how best to solve them. Thus, as discussed in chapter two, sustainable development is a difficult and contested concept, with different facets, interpretations and usages, which together with the complexity of the context where schools operate, explain the 'messiness' involved in the development of ESD.

The policy and the selected literature tend to describe ESD as a process, but there is little acknowledgement about both how this process starts and the 'randomness' involved in many of the projects developed. The literature presents a tendency to assume that this development

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[104] These four points emerged from the themes that appeared as most relevant in the literature review and data analysis, together with the objectives of the study and the research questions proposed. The four points presented were also chosen because they would allow a more visible contrast between the way the three 'actors' perceive and describe ESD.

is rational, organised and planned. Webster and Johnson (2008:122), for example, suggest different stages of implementation which presuppose designing, planning and developing ESD in schools until it becomes its main feature, transforming schools into 'sustainable places'.

However, the schools researched revealed that ESD is mainly introduced and developed through small projects whenever opportunities arrive. After some time, in some of the schools, ESD starts to be planned in advanced and further activities developed following a specific plan, but most of the time it does not occur so. There does not seem to be a clear structured programme but rather a more random development, shaped by different factors and contexts over time. The quotes below summarise this idea,

> It (ESD) started with one project in 1997 which was not necessarily about sustainability but with time it lead to more improvements in the grounds (…) We started doing small little projects which led to everything else and so the main work has been done maybe in the last 10 years or so. (PHSE teacher, Peace School)

> I think you have to start small, start with things that you can do in a school. Start with small things, look at the electric lighting, look at perhaps children growing their own fruit and vegetables. So I think it is acting small and really have lots of hands on for the children. Put the children and teachers back in touch with their environment, use the outdoors as a resource for learning. (Year 5/6 teacher, Green School)

It is not only in the initial stages that schools tend to focus on small projects whose driving force is not necessarily ESD. There are indeed projects developed in the schools where ESD was the main instigator, but there are also many examples where ESD just happens to be related to or has the same kind of interests/purposes as the projects schools want to develop. A good example is the popular 'Forest schools' programme which has several aims such as to teach about the natural environment, how to handle risks, how to solve problems, cooperate with others, develop self-awareness, empathy, independence, self-esteem and confidence. Despite being a programme that it is done outdoors, the 'Forest schools' is much more oriented towards the development of personal skills than to the development of awareness about the protection of the natural environment.

The 'Sustainable schools' policy suggested several measures schools could implement in order to become more 'sustainable', from small projects such as turning off appliances and lights, to larger projects such as the use of renewable energy. The policy suggested that by following these steps schools would be 'sustainable' by 2020 (DCSF 2006). The merging of small projects into bigger ones is what actually happens in schools: from initiatives such as the development of vegetable plots or the reduction of energy consumption, a vast number of activities emerged and after some time those activities became part of the schools' routine. However, and as described in chapter five, there are several additional factors that shape the

way ESD is interpreted, developed and practised in schools, from the school's location to the skills and interests of staff and pupils. As a result, to assume that there is a starting point and that there is a certain path schools should take in order to become 'sustainable', as suggested by some of the authors (e.g. Orr 2004, Webster and Johnson 2008), and the 'Sustainable schools' policy, equates to ignoring the complex influences and constraints I have accounted for and suggests a rather superficial image of ESD practices.

The GHG emissions from schools continue to rise along with the emergence of policies to reduce the environmental impact of institutions. The sustainable development concept is used in political, social and economic discourses transmitting the message about the importance of using resources more responsibly in order to 'save the planet'. Schools as privileged places of education are naturally seen as *the institution* where children can learn and practice an education that is not just about facts and numbers, but is also about values and attitudes that can resemble sustainable development ideals (Sterling 2001). However, the most common features found in the studied schools were recycling bins, vegetable plots and raised-bed gardens. This suggests either that the pathway towards sustainable development has been covered through very small steps and very specific projects, or that the outcomes of these projects will not be 'sustainable' schools and 'sustainable 'children, but rather schools and children that recycle and grow vegetables. How children that recycle and grow vegetables can lead us to sustainable development remains to be discovered.

7.2 Purposes: from everything to anything

My second argument is related to the way ESD is developed in schools, from small projects to large and more 'theoretical' ones: the purposes ESD may serve vary greatly between literature, policy and schools. All three 'agents' (literature, 'sustainable schools' policy, and the studied schools) seem to agree that schools and education have a fundamental role in the promotion of ESD and in the transition to a fairer, greener, sustainable society. However, ESD can serve numerous and divergent purposes both inside and outside the schools.

By titling this section 'from everything to anything', I am arguing that ESD is presented by the policy and some of the literature as an education that should cover almost everything, from human rights to renewable energy, from knowledge to practice, from values to behaviours (Huckle 2009). In the schools I studied, that 'everything' is transformed, however, into 'anything': any project developed outside the classroom, any project that involves the contact with the environment, any activity designed to promote awareness about social or environmental problems.

It is common to find in literature, ESD being described as an education that should be holistic, interdisciplinary, participative, critical, systemic, and relational. An education that is less about facts and more about the skills and knowledge one needs to live sustainably, in a

greater harmony with the natural environment. The aims of ESD are presented mostly by focusing on the thinking skills and experiences that ESD can provide in order to achieve future sustainability.

> An education that should be holistic, pluralistic, community-oriented, for life on Earth. (Porrit 1984:195)

> Any role for ESD should first focus on the mind-set and the institutional and cultural practices that have created our unsustainable present. (Manteaw 2012:379)

My case studies also express, to some extent, this idea: ESD should be cross-curricular and make the links between the different subjects and activities. However, when one looks at the way ESD is defined by the different members of the staff, one can see that the focus is mainly on activities that could enhance the contact with the natural world and habits for the future.

> To teach students through the environment, to teach them about the importance of looking after the natural habitats and wildlife (…) To teach them to reuse, grow what we eat and to be kind to the trees and to nature. (Teacher assistant and Nurture group/horticulture coordinator, Green School)

> It is a cross-curricular education because the world isn't segmented, everything is linked together (…) For us here is to recycle, reuse, essentially just making ourselves aware of the impact of our actions and how we can minimise those actions in a sustainable way. (Sustainability coordinator, Outdoor School)

The quotes above provide evidence about the way staff from different schools link the idea of sustainability with almost anything the school does related to the environment, from growing vegetables to reuse and recycle. The connections perceived by the staff between those projects and the expected outcomes are also visible. Despite the evidence provided by some authors who suggest that only 5% of the people would change for the "love of the planet" (Webster 2004), staff's perceptions are related to the idea of enhancing the connections with the natural world and caring for the environment,

> To put children and teachers back in touch with their environment, use the outdoors as a resource for learning, be creative, to build up connections with the real world, with the outdoors and with nature. (Year 5 teacher, Green School)

> To instill in the children a kind of understanding of the need to care for the environment, to be sustainable (…) Teach them things that can make their lives better in the future. (Energy School, deputy headteacher)

Comparing the different ways of defining and understanding ESD, it is clear that definitions go from wider ones to narrow ones, in the sense that ESD is described in the literature as an education with specific characteristics but without really mentioning the 'practicalities' of that education. In other words, the literature does not really reflect about what it means in

practice to have a holistic, participative, relational education. The 'Sustainable schools' policy prefers to describe an 'ideal' model of a school that should promote specific actions and practices without discussing what would be needed in order to have those actions and practices in schools. The schools refer to ESD by talking mainly about specific activities that can be associated with this particular type of education and the values and behaviours they expect to imprint in the children. Therefore, broad and wide concepts, such as holistic and participative are often translated into practice by growing vegetables and recycling and, in turn, those activities become the main idea that comes to mind when schools think about ESD.

There is a lack of research on how the ESD process is developed; on how principles and ideals are implemented in schools; on how turning off lights and other 'minor' gestures can contribute to the wider sustainable development goals.

ESD's essence, nature, or how it should be developed in schools, is also a matter of interpretation. There seems to be an agreement among the different actors that ESD should not be seen or treated as another subject, but rather as a kind of meta-subject or idea that informs the way the school is organised. The schools I researched tend to see ESD as an umbrella which comprises not only most of the activities done outdoors or related to healthy lifestyles promotion, resource use efficiency and inclusion awareness, but also as the idea behind many of the schools' projects and activities. ESD it is not seen as another subject then, but it is, to a certain extent, treated as one with the focus on activity-based projects.

> We try to embed it (ESD) in everything that we do, so there is not something that we are teaching as a completely separate subject. It is something that motivates us (…) If you look closely you will realise that everything that we do it is about sustainability. (Headteacher, Outdoor school)

The questionnaire and the case studies reveal that ESD is an important topic for most of the schools, with 64% of the English respondents schools stating that is taught often or very often and with further plans to develop more activities in the future, especially in the English case. However, when one looks at some of the activities proposed by the 'Sustainable schools' policy, together with the practices of schools and the lack of agreement about what ESD is or its relevance compared with core subjects, there is an impression that ESD is treated as anything slightly related to environmental or social awareness. As a result, the activities developed under its domain are much more practical than 'theoretical', much more content oriented than critical thinking oriented, much more centred in 'hot' topics and global problems than in the development of a more contextualised, local ESD.

There are then differences between the 'ideal' form of ESD described by the literature which should include not only practical activities, but also provide room for reflection and

discussion about those activities, and the 'non-ideal' form of ESD, which is developed in schools.

> The inclusion of some sustainability ideas such as 'biodiversity', 'carrying capacity' or 'equity' in the curriculum may be an encouraging start, but if ESD becomes assimilated within a mainstream which otherwise remains unaffected, we shall achieve little (…) It requires the elaboration of a lived sustainable education paradigm which includes, but goes beyond the curriculum, to embrace and suggest a new participative epistemology. (Sterling 2001:19)

The 'Sustainable schools' policy tried to provide a model of 'sustainable school' that could develop some of the ideas proposed by the literature and other reports, presented ESD as a way of teaching the core subjects. ESD was seen by the policy as a kind of driving force that could guide the schools in a certain direction. The schools translated these ideas into practice focusing more on practical activities than on curricular and discussion oriented ones, or in radical reforms that would transform the way one conceives schools.

In 2006, UNESCO proposed that ESD should cover topics as diverse as climate change, biodiversity, poverty reduction, peace, consumerism, citizenship, energy, among others. Tilbury (2011) presents an education shift proposed by ESD, which should go from passing knowledge to understanding and from raising awareness and changing behaviours to changing the mental models. Yet, according to my findings, the most common way to develop ESD still relies on passing knowledge, developing skills and raise awareness, or as put by Sterling (2004) "learning as maintenance".

7.3 Experiences: from indoors to outdoors

The focusing on the importance of the outdoors, this sub-section is used to discuss the significance of 'practising' ESD versus 'learning' ESD, an important debate within academia. The outdoors is a privileged space to practise activities connected to ESD in all the study schools, where the pupils can participate in the activities, rather than just hear about it. The outdoor space is used for teaching and learning once a week or more for almost half of the questionnaire schools (49%). The connections between the concept of sustainability and the environment are also visible, with 24% of the English schools stating that the protection of the environment is one of the most important issues about sustainability.

There is a strong tendency in all the schools I researched to develop those features that are more easily visible, recognisable and connected with the outdoors. Outdoor activities, visible eco-features, activity-based projects, extra-curricular events and clubs are the aspects most commonly found in schools and related to ESD. The importance of having pupils 'acting sustainably' is one of the arguments presented by schools to develop the grounds or the

buildings. The learning aspect is also mentioned, but is appears as if it is the practical aspect that is more relevant to the schools.

This prevailing way of developing ESD in schools diverges greatly from the one presented by some of the scholars, who tend to promote an ESD that focuses mainly on its learning aspect. Scott (2009a) actually argues, as mentioned in chapter one, that it should be enough for schools to "address sustainability in its work with young people through imaginative and engaging teaching, and stimulating opportunities for learning", without the need to have 'sustainable' buildings.

Other authors hold different conceptions of the purposes of education in relation to sustainability. Sterling (2001, 2004) and Huckle (n/d), for instance, state that it is important to 'practise what you preach' and to 'lead by example', meaning that the fact that the school is making efforts to save energy or to have an eco-building can be important to the educational aspect of ESD and should not necessarily be seen only as a way of saving money or reduce CO_2 emissions for a bigger purpose. As stressed by Eisner (1979), schools teach much more (and much less) than they intend to teach. As discussed in chapter two, Eisner (1979) considered that schools do not teach only the explicit subjects, but that all the other aspects existent in schools, such as the organisational structure, the furniture, and the physical characteristics, or the implicit curriculum, influence what pupils learn and how they learn. Titman (1994), focusing on the grounds of schools, argues that the way the grounds are managed and maintained have a considerable influence on children's attitude and behaviour.

The 'Sustainable schools' policy aimed to increase the importance of ESD in schools and it tried to encompass not only the learning process, but also the physical and the social aspects of schools. If one looks at the eight doorways is clear that the strategy tried to be inclusive and to provide to the school ideas and activities to develop the three areas (campus, curriculum, community), however, and as explored in chapter four, the emphasis and resources available for each doorway differ greatly. There is a clear emphasis on the first five doorways, which comprise mainly the campus and material aspects of ESD, such as saving energy and water, promoting healthy lifestyles, and reducing waste and consumption. The remaining three doorways are related to the social aspect and the links with the community; they provide less guidance to school in terms of resources available or ideas for activities.

The policy, although supporting a type of ESD that should be developed in the different spaces of the school, placed a greater emphasis on the saving resources facet, providing tips and advice on how to make the school more efficient and less wasteful. There is the argument that the curriculum should be enriched with the activities developed outdoors or with the improvements in the building and grounds, however, most of the activities proposed

in the policy are 'practical' and the links to the curriculum subjects should then be constructed by the different teachers.

In short, the influential literature is interested in the development of critical thinking and in the promotion of awareness in order to fight our unsustainable patterns of development, while the policy focus is on the promotion of practical actions that could benefit both schools and national sustainable development goals. The schools researched tend to see ESD as a way to develop their own interest, agendas and projects.

The ways ESD is interpreted and practised has implications on the resources needed and on the expected outcomes. So if, for instance, one wants to develop 'only' the learning aspect of ESD, assuming that it is possible to teach about ESD without practicing, there is no need to invest in the physical attributes of the school. But if the objective of ESD is to reduce school's CO_2 emissions, then a strong emphasis should be placed on energy efficient measures. Questions such as what does one want ESD for? How are we going to achieve a 'greener and fairer' world (assuming that it is policy makers and schools want)? Or what does it mean 'greener and fairer'? Ought to be asked more often before assumptions about the knowledge, skills and resources needed are posed.

7.4 Expectations: from conviction to hesitation

Literature, policy and schools agree on the important role of formal education in promoting sustainable development. The questionnaire shows that the clear majority of respondents, (96%), fully agreed or tended to agree on schools having an important role to play in instilling good habits and practices concerning sustainability. The case studies provide some further insight about this aspect:

> Schools have a very strong position to really drive sustainability. (ESD coordinator, Outdoor School)

> I think education has a huge role. Definitely, definitely (…) we are asking the children to take reasonable steps to be as sustainable as possible and what I would hope is that our children now do that by nature they just do it as a habit as sort of something that we would naturally expect them to do. (Headteacher, Outdoor School)

> My own view from an education sense, education should be a much broader thing and certainly not just concentrate on the English, Maths and Science. There is so much more to education from the performing arts to, you know, the eco issues (…) Schools should have a more active role in the promotion of sustainability." (Headteacher, Energy School)

Despite the emphasis on the importance of schools in promoting sustainability, the staff seemed cautious in making big claims about the role of schools. At the same time that there is an immediate agreement about the role of schools in this context, words such as 'hope', a

'more active role', 'reasonable' are also frequent words, suggesting that staff's expectations are less mystical and more pragmatic. The same can be said about the effects ESD would have on the future behaviour and values of the pupils. As discussed before, most of the staff tended to be cautious when asked about the potential long-term effects of ESD, talking about the external factors (parents, secondary school, media, etc.) that can undermine those outcomes, while some of the literature and the policy tend to establish a direct link between education and societal transformations, assuming that mass education and schooling can be culturally transformational.

> Teachers can and should be seen as a proxy for future generations (…) that we aspire to a time when all schools are microcosms of the world as it will need to be in 2025, that is: living exemplars of sustainability practice. (Porrit et al. 2009)

> It is not education, but education of a certain kind, that will save us. (Orr 2004:15)

The authors tend to assume several problematic things here, as discussed before: (a) that there is a certain kind of education needed to achieve sustainability; (b) that children can learn in schools the knowledge and skills needed to live sustainably in the future; (c) that ESD has long-term impacts that goes beyond the school years. Some of the most recent literature about environmental education brings back the problems in these assumptions, since it questions the long-term impacts of environmental education, "planting a seed in the hope that environmental behaviours will emerge later on" (Liddicoat & Krasny 2013:295) ignores the fact that there are many intervening factors between now and then, present and future, as we have been highlighting along the chapters.

The 'Sustainable schools' policy refers in numerous documents (e.g. *Sustainable schools self-evaluation. Driving schools improvement through sustainable development*, DCSF 2009c*; Climate change and schools. A carbon management strategy for the school sector*, DCSF 2010b), the important role of schools in the promotion of ESD and how schools can contribute to the national sustainable development goals. Some examples:

> As places of learning, schools can help pupils understand our impact on the planet and encourage them to weigh up the evidence themselves. As models of good practice, they can offer young people the chance to contribute to sustainable living, and demonstrate good practices to others. (DCSF 2009c:5)

> Schools are able to cultivate individuals with the values, skills and self-confidence to make positive contributions to their family, community, environment, and wider world. (DCSF, 2009c:25)

The 'Sustainable schools' policy tends to assume that pupils are "passive recipients of outcomes of the policy process rather than actors in the process" (Gough 1997:41). There is an emphasis on individual behavioural change, assuming that is what is needed for

addressing environmental issues, without acknowledging the complex nature of behaviour change (Stevenson 2013:151) or the fact that pupils learn and practise different things prior to and after school, as mentioned by Scott (2013:14) – behaviours that may not necessarily conform with ESD principles. Scott argues that schools' practices are often based around tacit assumptions about pupils' knowledge and interests without acknowledging that pupils go to school with experience, knowledge and concerns that derive from their families and networks, and that may or may not be favourable to what schools want to promote.

Final thoughts

Holdsworth, Thomas & Hegarty (2013:352) argue that, to date, the literature has focused on setting an agenda for the integration of sustainability into public education and offers principles that could develop the foundations of ESD. However, there is a lack of research on how these principles might be implemented. The contrast between the views and purposes of the different actors developed in this chapter, provide an important contribution to the understanding of the differences between rhetoric, policy and practice, and about the complexities schools are dealing with. The 'rhetoric-reality' gap is, however, a well-established concept in ESD and so the fact that it continues to exist and continues to be relevant demonstrates the current need of research that can contribute to the advancement of its understanding.

Stevenson (2013:150) argues that what is needed is "evidence-informed policy, instead of evidence-based policy", since it is necessary to acknowledge the factors that shape the educators' decisions about their practice, such as their professional knowledge and values, and not only to address what seems to work. Scott & Gough (2003:77) argue that there is a propensity in the literature to suggest that policies are more frequent and more developed than actual practices in education and some argued that the 'discourse of policy' differs in important ways from the practices. My research demonstrates that if there are a considerable number of policies and reports about ESD, the number of practices about ESD found in the schools and the number of schools developing some kind of activity slightly related to ESD is equally large. The differences are mainly related to the intentions behind the development of the projects, to the activities and places selected for the development of those projects, and to the ambitions and expectations of the possible results.

Although the literature discusses some of the problems involving the implementation of ESD in schools and its potential outcomes, it tends to focus on the debate on the nature and definitions of ESD, without really engaging with the implementation by schools of this type of education.

The 'Sustainable schools' policy presented an 'ideal' model of schools, where not only the buildings and grounds would be transformed into models of consumption and waste efficiency, but the curriculum would also include the knowledge and skills for promoting the development of sustainable development inside and outside the school gates, along with the involvement of the local community. The policy, however, considered neither what need changing in order to have these 'ideal' schools, nor what these changes would mean for the educational system.

The case-study schools developed many of the suggestions and ideas comprised by ESD as suggested in the influential literature and policy reports or by other projects such as the 'Eco-schools'. However, they also present differences in terms of users, purposes, the importance of those activities, and the context surrounding those activities: motivations, availability of resources, school's location, staff, networks, etc.

The desirable long-term outcomes of ESD described by the policy and literature have to take into account these internal and external influences. Definitions, purposes, agendas and problems shape the way ESD is developed and implemented in schools. Due to its broad and vague nature almost anything can be considered ESD and so there the need to clarify what schools should aim for. For example, do we want more schools with recycling bins? Do we want more schools with recycling bins and activities to promote awareness about recycling? Or, we want schools with no recycling bins because there is no waste generated? There is certainly a difference between i) the outcome of having recycling bins in schools, ii) the outcome of having recycling bins, a recycling team, a curricular link with those activities to raise awareness about the need to recycle; and iii) not having recycling bins at all because all the products are re-used by the school.

Literature, policy and schools seem to agree that there is a change that needs to occur in our relationship with the environment and with each other; that schools should be the centre of that change; and that children are our hope for achieving this change using ESD as the model. However, most of the literature does not really demonstrate successfully the causal connections between projects and outcomes. Most of the policies do not take into account the changes implied for having ESD at the heart of schools and at the centre of education; and most of the schools I researched juggled ESD with many other demands and agendas. Those schools with stronger commitment and with better support and resources, increase the activities and users of the projects; those either less committed or with fewer possibilities reduce the features and activities offered and shape those to the school's context. However, "less bad doesn't mean good" (Webster & Johnson 2008) and what happens in practice is 'business as usual, but greener and fairer', sometimes 'greener' and sometimes 'fairer' and not the sudden and magical transformation of schools into 'sustainable' places where no

waste is produced, the energy is provided by renewable sources and where the children will be 'sustainable' and caring future citizens.

Conclusions

This study intended to analyse the relationship between sustainable development and primary schools, looking at the way ESD becomes embedded in primary schools' ethos and practices. With this specific analysis, the research planned to question the motivations to develop ESD in schools and identify the internal and external factors playing a role in this relationship. The research analysed ESD practices in primary schools, both in England and Portugal, and has provided evidence of how the ideals of sustainable development are translated into practices and of the main factors influencing that process.

In order to answer the main research question: what the limitations of ESD in the shift to a 'greener and fairer' world are, this thesis researched three other sub-questions: a) how is sustainability translated into practice in state-funded primary schools? b) how important is the promotion of ESD in primary schools' agendas? and c) how was the 'Sustainable schools' project designed to prepare pupils for current and future environmental and social challenges.

Starting by looking at the first sub-question, with the aim of analysing the way sustainability and sustainable development are translated into practice in primary schools, the research concludes that these concepts have been compartmentalised into different topics (e.g. energy, water, waste) and those have been subsequently translated into specific activities that are believed to promote certain habits, knowledge and skills.

"Wicked problems require clumsy solutions" (Vermeij at al. 2006:17). "Clumsy solutions" recognise the "essential contestation that makes every solution and definition of the problem an essential part of the problem" (Stahl & Cimorelli 2012:19). For Stahl & Cimorelli (2012), "tame problems strategies" do not work well with wicked problems, since the nature of these problems does not allow a simplification or a breaking down into the different components.

> The wicked problem is more than the sum of its components. Each aspect of the wicked problem is an integral part of the problem (…). Wicked problems reflect dynamic, interrelated systems in which social processes are an important component (…) therefore, finding solutions to wicked problems requires a different strategy. (Stahl & Cimorelli 2012:20)

In the case of sustainable development and education for sustainable development, there is the sense that only a 'clumsy' range of solutions could help to tackle these complex concepts, using a flexible and holistic approach. However, what is most commonly seen is the simplification of the problem, by breaking down the concept of sustainable development into its different components. The 'Sustainable schools' policy, some of the studied schools and other programmes, tend to practice ESD by dividing it into themes (e.g. energy, waste, global citizenship) and develop projects to each of the themes. This approach may be the

possible approach given the educational and societal models, but it contrasts with the complex and "messy" nature of sustainable development.

One of the key findings of the research is the evidence of the standardisation of ESD practices, features and projects in the different schools. This standardisation is visible on the similar practices developed by schools in different parts of England (e.g. the existence of vegetable plots in all the case study schools and in 67% of the schools from the questionnaire) and in Portugal[105], with similar practices as those found in the English schools, such as raised-bed gardens, vegetable plots and solar panels.

Together with this standardisation there is also the tendency to emphasise the visible and material aspects of sustainability. In the 'doing' versus 'teaching about' dilemma faced by the schools, it is the 'doing' aspect that ends up winning the contest, with schools focusing mostly on activity-based projects that allow the involvement of the pupils and can enable the reduction of schools' environmental impact. By looking at the activities developed in the schools' grounds, the investment in eco-features and the focus on having 'eco-clubs' for the pupils, it is easily perceived the emphasis on the material aspects of ESD.

Rather unsurprisingly, outdoor activities (e.g. growing vegetables, 'Forest schools' activities) and projects that allow the involvement of the pupils (e.g. energy club, cooking club, peace club) are the most common practices developed by the schools and those more easily perceived as ESD. When questioned about the motivations to develop these specific projects, the staff from the different schools stated that they have the aim of promoting awareness and raise habits such as turning off lights, saving water or recycling, and activities that have an influence on the environmental impact of schools and demonstrate a commitment towards sustainable development. Sentences such as "taking responsibility", "provide a model for children" are common in the discourse of teachers and headteachers of the studied schools, and the questionnaire shows that half of the respondents believe that ESD should form responsible citizens and habits for the future.

The second sub-question was designed to analyse the importance of ESD in primary schools' agendas, and the conclusion is that sustainable development and sustainability are perceived as something important by all the respondents, with 96% of the English schools, fully agreeing or tending to agree that schools in general should play a greater role in instilling good habits and practices concerning the protection of the planet. ESD is something that, in general, schools aim at and enjoy doing, with the different people stating that ESD is positive for the school, the pupils and the community. The case study schools, as schools already

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[105] The inclusion of data from the Portuguese schools in the conclusions is used mainly to reveal the role of the context in developing ESD and the importance of designing a more 'localised' ESD if one wants schools to address local and national environmental problems.

committed with ESD, referred to the passion felt towards the topic saying things such as "we are passionate about sustainability", "it is something we are very passionate about in the school", "it is something I always felt quite strongly about", revealing the importance of the personal interest and motivation to the development of ESD.

There are, however, differences among the schools related to the time spent with the projects, the variety of activities and the interconnectedness of the different programmes developed, more easily perceived when compared to the Portuguese case. The availability of the staff and interests, the resources available, the school's location and size, as well as the social networks, are factors that, combined, explain the differences in the time, uses, users and potential outcomes of the projects.

The way ESD is perceived and used in the different schools, as a way of saving energy in Energy School or as a way of developing multiculturalism in Peace School, for example, demonstrates that the role ESD has in the schools' agendas depends on different factors and will produce, potentially, different outcomes. The practices found in the schools cannot be explained by looking only at the existence of certain characteristics, features or interests, since it is the combination of these different factors that explain why schools have the same projects but different uses, or the same motivations but different resources. This conclusion was only possible due to the use of the different research methods since the time spent in the schools and the questionnaire provided complementary information on how features in schools are used and practices are developed.

The context plays an important role in shaping the way ESD is practised in schools. This concept of context is used here as an element that comprises not only the material features surrounding the schools, and its organisational arrangements, but also the ideological, social, political and economic environments inside and outside the schools' gates. The findings from the Portuguese case are valuable evidence about the way the context influences ESD practices. As stressed before, there is not any ESD strategy or policy in Portugal (Schmidt 2010:12) and never was. England and Portugal have significant cultural and structural differences in their educational system and in the stage of development of ESD and still there are many similarities in the motivations to develop ESD activities, in the practices developed and in the features of the schools.

A standardised ESD, promoted by many of the programmes such as the 'Eco-schools' programme, with straightforward, simple and detailed steps, paths and expected results it is the easiest way to involve a large number of schools. However, if this standardisation of practices facilitates the enrolment of schools and the development of activities, it can also be prejudicial to a more contextualised ESD, a critical point if one wants ESD to address local and national problems. So, for example, if one looks to the English case (as discussed in chapter five) the major environmental problems revolve around waste generation, loss of

biodiversity, pollution, climate change. Although these problems can be considered global and affecting all regions, there are specificities that should be taken into account. Portugal, for example, suffers from problems that barely affect England: forest fires, water shortage, desertification of the interior and rural areas, while some problems found in England may be less relevant to teach about in Portuguese schools.

My findings reveal that there is a mixture of standardisation and divergence between schools and between countries. A standardisation that is visible in the practices developed and a divergence that is detectable on the time, the resources and the intentions on the development of those practices.

A third sub-question the research aimed to answer was the way the 'Sustainable schools' project was designed to prepare pupils for current and future environmental and social challenges. By providing a kind of ESD instruction book, the strategy delivered standardised guidelines on how to increase awareness about environmental problems and on how to reduce energy/water consumption, focusing mostly on the management of the buildings and on individual behaviour change.

The argument brought up by several authors (e.g. Sterling 2001, Scott & Gough 2003) about the importance of providing critical thinking, flexibility, creativity, autonomy and reflexivity about sustainable development and its implications, rather than prescriptive and uneventful tasks and activities, it is generally weak in the 'Sustainable schools' strategy (and in many other programmes such as the 'Eco-schools'), since these programmes adopt the position of providing a certain type of knowledge and skills which are believed to lead us to a more 'sustainable' future. The strategy tried to incorporate ESD in the different areas of schools by proposing a model which comprised the external aspects (schools buildings, grounds, consumption, etc.), internal (what is taught, where and how it is taught) and relational (the role of schools in the community and vice-versa). It aimed to have a holistic approach to sustainable development, presenting it as a process and not as something that could be achieved and rewarded. However, the division into eight doorways and the provision of guidelines to develop specific activities with the aim of achieving certain outcomes can be seen as an approach similar to the 'Eco-schools' programme, where 'ready-to-use' lesson plans and projects are provided.

With the analysis of ESD practices and of the factors shaping these practices, my research was ultimately interested in identifying the limitations of ESD in the shift to a 'greener and fairer world', the main research question. These limitations are abundant, shaped by external and internal constraints, as explained throughout the thesis. Some of these restraints are related to the educational model and the way schools and the national curriculum are organised, with a strong focus on core subjects and academic targets, leaving ESD without a 'natural' place in the schools. There is an argument present in the discourse of the different

schools analysed about the pressure to achieve good results and the difficulty in finding the 'right' combination between academic results and ESD activities. This is true especially for Multicultural and Energy schools, and is also visible in the questionnaire answers.

Related to this constraint, one find the problems expressed by the schools' staff when asked about the barriers to develop more ESD projects: shortage of time due to an overcrowded curriculum; difficulty in finding the resources and the funds to implement the projects; lack of knowledge and training; or the unconducive building and grounds. Some of the studied schools overcame these internal limitations whenever the 'right' conditions were in place. However, if ESD depends on 'chance', luck, 'right' conditions, then its results will also be affected by this 'randomness' and its prediction highly compromised.

As if these internal constraints were not sufficient, there are also external conditions, social aspects which can undermine the long-term outcomes of ESD. These are primarily related to the dominant economic and social models that promote opposite messages to those defended by ESD, as stressed by different authors (e.g. Orr 2004, Webster 2004, Waters 2005, Palmer 2006, Zeyer & Kelsey 2013) and which offers little opportunities to practice what pupils learn in schools in their everyday lives, with few exceptions such as recycling or turning off lights.

Other problems faced by ESD, are related to the lack of synchronisation and a consistent policy between different levels of education and different socialisation actors. These gaps prevent the development of the seed 'planted' in the pupils in primary schools, as stated by some of the staff interviewed. As stressed in chapter five, there is little correlation between most pressing national environmental and social problems and schools' practices related to ESD. When asked about the main environmental and social issues schools should teach about, only 9% and 7% selected pollution and loss of biodiversity, respectively, being however two of the most pressing problems that the UK is facing.

There is some evidence in my research and previous reports (e.g. Birney & Reed 2009, Gayford 2009, Barrat & Barrat 2009) that ESD can have benefits for schools and pupils, namely it can improve the aesthetic elements of the grounds, diversify the activities promoted, increase the self-esteem and the motivation of pupils and staff, diminish the consumption of energy and water. As discussed in chapters two and seven, some of the ESD literature, tend to speak of "planting a seed in the hope that environmental behaviours will emerge later on" (Liddicoat & Krasny 2013:216). It is very common to find in the literature, schools and education to be placed as the key actors in the transition to a sustainable society. For example: "a dramatic change in our mindset and behaviours is required and education is one tool that shapes and informs how we think and act." (Holdsworth, Thomas & Hegarty 2013:350); "Education for sustainability can play a key role in both short- and long-term developments." (Terry 2008:66). However, the benefits that can be measured and quantified

are related to specific aspects and specific outcomes and are not a guarantee of the long-term impact of ESD.

Jickling & Wals (2013:84) describe three possible relationships between sustainable development and education: (i) "Big brother sustainable development" where education is characterised as an instrument that can help realised the sustainable development agendas; (ii) "Limited freedom" where education's freedom is bounded by sustainable development and so freedom to think outside the sustainable development box is limited; (iii) "Enabling thought and action" with a focus on a dynamic and evolving relationship and the development of opportunities to questioning sustainable development assumptions and prescriptions. This research has shown that the way sustainable development is perceived and used changes among different agents, and those differences are more evident among the people that theorise about ESD and those that practise it in schools; between people that make decisions in schools (the headteachers) and those that implement projects (the teachers, the teaching assistants). These differences highlight the importance of exploring the diverse factors that shape the development of ESD in schools, presented in this research, and how the different 'actors' handle this complexity. Therefore, using this analogy one can conclude that:

- The 'Sustainable schools' policy and some of the core ESD academic literature understand sustainable development as the 'big brother' of ESD, informing the way education should be restructured in order to realise its broader agendas;

- It is a relationship based on hopes and expectations about the future, without acknowledging the internal, external and contextual elements influencing and constraining the potential outcomes;

- The case-study schools tend to have 'limited freedom' and or will/knowledge to develop projects that enable critical thinking and question assumptions about sustainable development;

- The majority of projects and practices found in the schools tend to accept sustainable development as an unproblematic concept, revealing that the discussions about the nature and different goals of this type development are not that relevant outside the academic discourses;

- The complexity of sustainable development and the ambitious design and goals proposed by the core ESD literature and policies tend to be translated into rather modest practices in schools, such as turning off lights or recycling.

These general conclusions highlight the importance of looking at the ESD design and ESD development processes in schools. My research offers insights into these processes and the meanings, purposes and practices of schools, contributing to an area of knowledge that is

understudied and not fully comprehended: how sustainable development shapes ESD and how ESD is practised in schools.

Implications of the research

My analysis of the processes through which sustainable development becomes embedded in schools' ethos and practices, allows the understanding of the importance of different shaping factors. One of the major interests of policy makers and schools it is to have evidence of the long-term effects and benefits of ESD in schools, community and pupils, and although my research cannot provide that evidence, since such evidence would not be visible until the pupils turn into adults, it provides robust insights about the gaps between schools' practices, sustainable development goals and literature assumptions.

The benefits of having ESD in schools were highlighted by the different actors, and despite the lack of an assessment of those benefits it was evident that the schools that develop ESD projects were pleased with the result, and that pupils and parents seemed satisfied about the projects and more aware about sustainable development and its implications. However, particular unintended outcomes for some of the pupils I interviewed were also visible. These unintended outcomes include guilt, dissatisfaction and displeasure with the state of the world and the impact of humans on the environment. Such outcomes should then be acknowledged by schools and policy makers whenever awareness about environmental and social problems is promoted.

Unintended outcomes are one of the consequences of "messy" problems, as mentioned before. In this particular case, the problems ESD may bring to pupils and schools are especially connected to broader social, economic, and cultural media. As discussed in chapter two, the predominant values, messages and ideas of our Western society, mainly promoted through the mass media, are in opposite with the values, messages and ideas promoted by ESD. The organisation of our society, the institutions and the physical structures provided little support to practice what children learn in schools related to ESD.

As stressed by Eisner (1973), schools teach in harmony with the culture where they are emerged. There is the need to recognise the influence of the dominant social paradigm upon education (Sterling 1996), before assumptions are made about the impacts ESD might have in the society or in the long-term attitudes of children.

Some of the schools studied are as 'sustainable' as it gets in England. If one assesses their work according to the 'Eco-schools' suggestions or the 'Sustainable schools' doorways one realises that these schools did accomplish most of the requirements and can be called 'sustainable' if a sustainable school is one that saves energy, and reduce the production of waste; inclusion is promoted and the pupils, staff and local community are involved in these processes. However, if one assesses these schools by the parameters of the ideals of

sustainable development, these schools are not 'sustainable' as they still use the same unsustainable resources, values and materials, just a bit less, in consonance with what is happening in the society in general. Sustainable development is perceived as 'using less' not as using differently, using different things, or as 'stop using' (Webster 2008:43).

By stressing the problems of developing ESD in an 'unsustainable' society, and by referring to some of the practices developed by the schools, such as turning off the lights or growing vegetables, as 'minor' actions compared to some structural changes that could be undertake in the curriculum and campus of schools, I am not devaluating the benefits these actions and practices may have to children and schools, but rather highlighting the need to discuss the present outcomes and the expectations behind the development of such practices.

As mentioned before, there is significant research on the benefits of children' regular contact with the natural environment (e.g. Birney & Reed 2009; Gayford 2009), confirmed in the reports of Ofsted about the researched schools and in the discourse of the staff I interviewed. These benefits are somehow divided between benefits for the environment and the society and for the children in terms of the development of physical and mental skills and emotional health. My critique focuses mostly, not on the current and potential future benefits of ESD for the children, but rather on the lack of seriousness in political decisions, educational reforms, and societal changes, continuing to place all the hopes in the 'modest' activities developed by some of the schools and without acknowledging some of the most important limitations of those practices.

The relevance of asking beforehand 'what does one want ESD for?' is related to the need to allocate adequate resources in a more efficient way, since resources would be then consistent with the objective ESD is meant to achieve. However, even if this key question – what does one want ESD for? is answered, there are still further complexities to take into account. For instance, many activities I observed in schools cannot entirely fulfil their purpose due to the lack of interaction between schools and other institutions; due to the lack of knowledge and information about the whole process; or due to the lack of resources to implement more holistic projects. An example, if the objective is to reduce the carbon footprint of schools, then the focus on direct emissions is not sufficient as stressed before, since a large amount of CO_2 emissions are from indirect sources and so on.

A large number of difficult questions remain unanswered, even if the core literature pretends to have already solved the problem. How should sustainability be developed in schools? Where should schools stop their journey towards sustainability? What kind of changes would be needed inside and outside schools to develop further ESD? What are the consequences of developing a prescriptive idea/model of sustainable development? What are the long-term effects of ESD? These are central questions that are difficult to answer for, which nobody has the final word.

The answer about the main purpose of ESD seems to be implicit and self-evident in most of the reports, articles and schools' practices – to provide knowledge to develop the skills and values that would lead us to a to a 'greener and fairer' world, to a 'sustainable' world. The society projects its idealised vision on education and schools answer back with modesty. Planting a tree on a 'grey' school ground could make it greener, but is that what we mean by 'greener'? Establishing a link with a school in Africa could make an English school fairer, but is that the 'fairness' we want?

My research provided partial answers to these relevant questions by revealing what being 'sustainable' means to the different actors and how those perceptions are then shaped by the different factors and their combinations when school practices are developed. It also provided data about the benefits and problems ESD brings to schools, and what the expectations behind the development of 'eco-features' and curricular projects are. It provided further evidence about the gaps between some of the literature claims, the 'Sustainable schools' policy aims and the schools practices, revealing the maladjustment between expected outcomes and achievable results.

As privileged socialisation agents, schools will always be at the heart of the social and educational changes aimed by societies, such as sustainable development. However, without further analysis about the social implications of the development of ESD or about what one can expect to achieve by developing this type of education in schools, there will be little progress in the provision of evidence about the claimed outcomes of Education for Sustainable Development.

Turning off the lights in schools, an unpretentious habit acquired throughout repetition, became a symbol of sustainable development, a cornerstone in the pathway towards a 'greener world'. Campaigns such as the one promoted by WWF on the Earth day (2011), "Turn off the lights, wear something bright", the Energy topic suggested by the 'Eco-schools' programme and the Energy and Water doorway by the 'Sustainable schools' strategy, or the 'Switch off fortnight 2013' sponsored by the POD[106] (EDF energy), help to explain this phenomenon: minor gestures with major connotations. The idea that a complex and contested idea can be put into practice using simple, short-term and sporadic activities may result in a large waste of resources and, even more dangerous, in the belief that schools will lead us to a sustainable society with their vegetable plots, solar panels and wildlife gardens.

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[106] In September 2008 EDF Energy launched The Pod, a free online learning resource that helps teachers to educate children about energy, water, transport, waste and biodiversity.

Bibliography

Adams, W. (2009) *Green development: Environment and sustainability in a developing world* London: Routledge

Agyeman, J. (2001) "Ethnic minorities in Britain: short change, systematic indifference and sustainable development" *Journal of environmental policy & planning,* 3(1) 15-30

Alderson, P. (2004) Ethics. In: Fraser, S.; Lewis, V.; Ding, S.; Kellett, M. & Robinson, C. (Eds.) *Doing research with children and young people* London: Sage Publications, pp.34-46

Almeida, A. & Vieira, M. (2006) *A Escola em Portugal* Lisboa: Imprensa de Ciências Sociais

Ashden-UK Programme, online at: http://schoolsonline.britishcouncil.org/accreditation-and-awards/isa/uk-schools/about (Accessed on 12th January 2012)

Association for women's rights in development, online at: http://www.awid.org/News-Analysis/Rio-20-Special-Focus/Women-s-groups-statements-and-reactions-Folder/%28offset%29/10 (Accessed on 04th of March 2012)

Austin, H.; Dwyer, B. & Freebody, P. (2003) *Schooling the Child. The making of students in classrooms* London: RoutledgeFalmer

Balint, P.; Stewart, R.; Desai, A. & Walters, L. (2011) *Wicked environmental problems: managing uncertainty and conflict Washington*, DC: Island Press

Barrat, H. & Barrat, R. (2009) "Children researching their urban environment: developing a methodology"*, Education*, 37(4) 371-384

Barrett, J. (2001) "Component ecological footprint: developing sustainable scenarios, impact assessment and project appraisal", *Resource Management*, 19(2) 107-118

Bazeley, P. & Jackson, K. (2013) *Qualitative data analysis with NVivo* Colorado: Sage

Becker, E. & Jahn, T. (Eds.) (1999) *Sustainability and the Social Sciences. A cross disciplinary approach to integrating environmental considerations into theoretical reorientation* London: Zed books

Becker, E.; Jahn, T. & Stiess, I. (1999) Exploring uncommon ground: sustainability and the Social Sciences. In: Becker, E. & Jahn, T. (Eds.) *Sustainability and the Social Sciences. A cross disciplinary approach to integrating environmental considerations into theoretical reorientation* London: Zed books, pp1-22

Bell, M. (2009) *An invitation to Environmental Sociology* London: Sage

Berkhout, F.; Leach, M. & Scoones, I. (Eds.) (2003) *Negotiating environmental change. New perspectives from social science* Cheltenham: Edward Elgar Publishing Limited

Berryman, T. (2000) "Looking at children's relationships with nature from a developmental perspective: towards an appropriate curriculum" *Environmental education and the*

contemporary world, Processing of the International Congress Environmental Education and the contemporary world, Lisbon

Biesta, G. (2008) "What kind of citizen? What kind of democracy? Citizenship education and the Scottish Curriculum for Excellence", *Scottish Educational Review*, 40(2) 38-52

Biodiversity Reporting and Information Group (BRIG) (Ed. A. Maddock) (2007) "UK Biodiversity Action Plan. Report on the Species and Habitat Review", *UK Biodiversity Partnership*

Birney, A. & Reed, J. (2009) *Sustainability and renewal: findings from the leading sustainable schools research project*, Nottingham: National College for Leadership of Schools and Children's Services

Blaikie, N. (2000) *Designing social research: the logic of anticipation* Malden: Polity

Blank, G. (2004) "Teaching qualitative data analysis to graduate students", Social Science Computer Review, 22(2) 187-196

Blewitt, J. (2004) "The Eden project – making a connection", *Primary curriculum research*, 2 (3) 175-189

Bonnett, M. (2002) "Education for Sustainability as a Frame of Mind", *Environmental Education Research*, 8(1) 9-20

Bourdieu, P. & Passeron, J. (1990) *Reproduction in education, society and culture* London: Sage Publications Ltd

Bowers, C. (2000) "Towards eco-justice pedagogy". Paper presented at the *European Educational Research Association Conference*, Edinburgh, 20-23 September

Brannen, J. (2008) The practice of a mixed methods research strategy: personal, professional and project considerations. In: Bergman, M. (Ed.) *Advances in mixed methods research* London: Sage

Brown, D. (1991) "Bridging organisations and sustainable development" *Human Resources*, 44(8) 807-831

Bryman, A. (2001) *Social research methods* Oxford: Oxford University Press

Bryman, A. (2006) "Integrating quantitative and qualitative research: how is it done?" *Qualitative Research*, 6(1) 97-113

Bulmer, M. (1982) *Sociological research methods. An introduction* London: The Macmillan Press

Bunn, R. (2008) "Building a future", *TES NewspaperOnline*

Burgess, R. (1993) *In the field. An introduction to field research* London: Routledge

Burgess, R. (1997) *A pesquisa de terreno: uma introdução* Oeiras: Celta Editora

Burke, C. & Grosvenor, I. (2003) *The school I'd like. Children and young people's reflections on an Education for the 21st century* Oxon: RoutledgeFalmer

Bruges, J. (2001) *The little Earth book* Bristol: Alastair Sawday Publishing

Capra, F. (1982) *The Turning Point: Science, Society, and the Rising Culture* New York: Simon and Schuster

Capra, F. (1996) *The web of life. A new synthesis of mind and matter* London: Flamingo

Caria, T. (2002) *Experiência etnográfica em ciências sociais* Porto: Afrontamento

Caring Schools in South Africa, online at:
http://www.nelsonmandela.org (Accessed on 20th of July 2011)

Carlsson, M. & Jensen, B. (2006) Encouraging environmental citizenship: the roles and challenges for schools. In: Dobson, A. & Bell, D. (Eds.) *Environmental citizenship* Cambridge: MIT Press

Castells, M. (1996) *The Rise of the Network Society, The Information Age: Economy, Society and Culture* Vol. I., Oxford: Blackwell

Chawla, L. (2007) "Childhood experiences associated with case for the natural world: a theoretical framework for empirical results" *Children, youth and environments,* 17(4) 144-170

Corcoran, P. & Wals, A. (2004) *Higher education and the challenge of sustainability: problematics, promise, and practice* Dordrecht: Kluwer Academic Publishers

Costa, J. (1986), *Introducao a Metodologia das Ciências Sociais* Porto: Edições Afrontamento

Coughlan, S. (2012) "Primary Schools to rise to 1,000 pupils in places shortage", 14 March 2012, *BBC News Education & Family*, Online at http://www.bbc.co.uk/news/education-17273218

Creswell, J. & Clark, V. (2007) *Designing & Conducting Mixed Methods Research* London: Sage

Davis, J. & Cooke, S. (2007) "Educating for a healthy, sustainable world: An argument for integrating health promoting schools and sustainable schools" *Health Promotion International*, 22(4) pp. 346-353

DCSF (2006) National Framework for sustainable schools, online at: http://www.teachernet.gov.uk/sustainableschools/

DCSF (2007a) *Building schools for the future* Norwich: HMSO

DCSF (2007b) *The children's Plan* Norwich: HMSO

DCSF (2007c) *Top tips to reduce energy and water use in schools* London: HMSO

DCSF (2007d) *Top tips for sustainable school travel* London: HMSO

DCSF (2008a) *Sustainable schools: a brief introduction* London: HMSO

DCSF (2008b) *Planning a Sustainable School. Driving school improvement through sustainable development* London: HMSO

DCSF (2008c) *Sustainable Schools: How national recognition schemes can support your school's progress* London: HMSO

DCSF (2008d) *Extended Schools: building on experience* Nottingham: HMSO

DCSF (2008e) *Top tips to develop the global dimension in schools* London: HMSO

DCSF (2008f) *Top tips for purchasing in schools* London: HMSO

DCSF (2008g) *Sustainable schools teaching resources: Primary* London: HMSO

DCSF (2009a) *Top tips for school food and catering services* London: HMSO

DCSF (2009b) *Delivering Sustainable Communities through Sustainable Schools. Guidance for Local Authority Office* London: HMSO

DCSF (2009c) *S3: Sustainable school self-evaluation. Driving schools improvement through sustainable development* London: HMSO

DCSF (2009d) *A bursar's guide to sustainable school operation* London: HMSO

DCSF (2009e) *Top tips to reduce waste in schools* London: HMSO

DCSF (2010a) *Evidence of impact of Sustainable School* London: HMSO

DCSF (2010b) *Climate change and schools. A carbon management strategy for the school sector* London: HMSO

De Vaus, D. (2002) *Surveys in social research* London: Routledge

DEFRA (1998) Sustainable development educational panel: first annual report. Online at: http://www.tidec.org/sites/default/files/uploads/Sustainable_Development_Education_Panel_Annual_Report_1998.pdf

DEFRA (1999) *A better quality of life. Strategy for sustainable development for the UK* London: TSO

DEFRA (2002) *Achieving a better quality of life. Review of progress towards sustainable development* London: TSO

DEFRA (2005) *Securing the Future: Delivering UK sustainable development strategy* London: TSO

DEFRA (2006) *OECD Environmental Performance Review. The UK's progress report* London: HM Government

DEFRA (2008) *Sustainable indicators in your pocket* London: TSO

DEFRA (2009) *Sustainable indicators in your pocket* London: TSO

DEFRA (2010) *Sustainable indicators in your pocket* London: TSO

DEFRA (2011a) *Mainstream sustainable development. The Government's vision on what this mean in practice* London: TSO

DEFRA (2011b) *Biodiversity 2020: A strategy for England's wildlife and ecosystem services* London: HR Government

Department of the Environment (1990) *This common inheritance: Britain's Environmental Strategy* London: TSO

DfES (2003) *Every child matters* Norwich: HMSO

DfES (2005) *Learning for the Future: The DfES Sustainable Development Action Plan* London: HMSO

DfES (2006a) *Sustainable school for pupils, communities and the environment* Nottingham: HMSO

DfES (2006b) *Sustainable schools initiative year of action,* online at: http://www.teachernet.gov.uk/sustainableschools/support/support.cfm?id=54 (Accessed on 12th March 2010)

Department of Education (2012) *Top tips for sustainability in schools*, online at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/187037/DFE-32056-2012.pdf (Accessed on 09th June 2012)

Department of Energy and Climate Change (2008) UK Climate Change Act 2008, HR Government, online at: http://www.legislation.gov.uk/ukpga/2008/27/pdfs/ukpga_20080027_en.pdf (Accessed on 25th May 2012)

Department of Energy and Climate Change (2012) *UK greenhouse gas emissions: performance against emissions reduction targets,* online at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/211907/Progress_towards_targets_2012_provisional_figures.pdf (Accessed on 23rd September 2012)

Dillard, J.; Dujon, D. & King, M. (Eds.) (2009) *Understanding the Social Dimension of Sustainability* New York: Routledge

Dixon, D. (2009) *Developing a green leader model for primary schools* Centre for Research and development: University of Lincoln

Dobson, A. (1996) "Environmental sustainabilities: an analysis and a typology", *Environmental Politics*, 5(3) 401-4028

Dobson, A. & Bell, D. (Eds.) (2006) *Environmental Citizenship* Cambridge: MIT Press

Donald, R. (2012) "The UK's outsourced emissions almost double its carbon footprint", The *Carbon Brief Blog*, 12 March 2012, Online at: http://www.awid.org/News-Analysis/Rio-20-Special-Focus/Women-s-groups-statements-and-reactions-Folder/%28offset%29/10 (Accessed on 23rd September 2012)

Dressel, P. (1979) Education for uncertainty: the role of evaluation. In: King, E. (Ed.) *Education for uncertainty* London: Sage, pp51-72

DTI (2003) *Our energy future – creating a low carbon economy, the UK Energy White Paper* Norwich: HR Government

Dunlap, R. (2010) The maturation and diversification of environmental sociology: from constructivism and realism to agnosticism and pragmatism. In: Redclift, M. & Woodgate, G. (Eds.) *The international handbook of environmental sociology* Cheltenham: Edward Elgar, pp15-32

Eco-Schools Programme, online at: http://www.extendedschools.co.uk/Home%20Admin.asp?nid=26&pid=26 (Accessed on 07th April 2011)

Eichstaedt, P. (2011) *Consuming the Congo: War and Conflict Minerals in the World's Deadliest Place* Chicago: Lawrence Hill Books

Ellis, M.; Alexander, V.; Cronin, A.; Dickinson, M. & Fielding, J. (2006) "Triangulation and integration: processes, claims and implications", *Qualitative Research*, 6(1) 45-59

Elshof, L. (2005) "Teacher's interpretation of sustainable development", *International Journal of Technology and Design Education,* 15, 173–186

Eisner, E. (1979) *The educational imagination on the design and evaluation of school programs* Ohio: Merril Prentice Hall

Environmental Schools in Brazil, online at: http://www.itaquaweb.com.br/regional/9-itaqua/479-escola-ambiental-amplia-atividades-educativas (Accessed on 05th September 2010)

European Environment Agency (2010) *The European Environment – state and outlook 2010* Copenhagen

Extended Schools, online at: http://www.extendedschools.co.uk/Home%20Admin.asp?nid=26&pid=26 (Accessed on 03rd August 2011)

Fien, J. (1993) *Education for the environment. Critical curriculum theorising and environment education* Victoria: Deakin University Press

Food For Life Partnership, online at: http://www.foodforlife.org.uk/ (Accessed on 16th February 2011)

Forest Schools Programme, online at: http://www.forestschools.com/what-are-forest-schools.php (Accessed on 05th April 2011)

Forsyth, T. (Ed.) (2005) *Encyclopaedia of international development* London: Routledge

Foster, J. (2001) "Education as sustainability", *Environmental Education Research*, 7(2) 153-165

Fowler J. (2002) *Survey Research Methods* London: Sage

Fraser, S.; Lewis, V.; Ding, S.; Kellett, M. & Robinson, C. (Eds.) (2004) *Doing research with children and young people* London: Sage Publications

Freitas, M. (2006) "Educacao ambiental e/ou educacao para o desenvolvimento sustentavel? Uma analise centrada na realidade portuguesa" *Revista Ibero-Americana de Educacion* 41, 133-147

Frumkin, H. (2001) "Beyond Toxicity: human health and the natural environment", *American Journal of Preventive Medicine*, 20(3) 234–240

Gallagher, M. (2009) Ethics. In: Tisdall, E., Davis, M. & Gallagher, M. (Eds.) *Researching with children & young people. Research design, methods and analysis* London: Sage, pp91-112

Garcia, R. (2006) *Sobre a Terra. Um guia para quem lê e escreve sobre o ambiente* Lisboa: Público

Gayford, C. (2009) *Learning for sustainability: from the pupils' perspective* Surrey: WWF-UK

Gillborn, D. (1990) *Race, Ethnicity and education: teaching and learning in multi-ethnic schools* London: Unwin-Hyman/Routledge

Global Action Plan, Stockholm Environment Institute, Eco-logica Lts (2006) *UK schools carbon footprint scoping study*

Godoy-Shimizu, D.; Armitage, P.; Steemers, K. & Chenvidyakarn, T. (2011) "Using display energy certificates to quantify schools' energy consumption", *Building Research & Information*, 39 (6) 535-552

Goodfellow, M & Andrew-Power, K. (2007) *Raising standards: Making sense of the sustainable schools agendas* London: Specialist Schools and Academies Trust

Gottlieb, D.; Vigoda-Gadot, E.; Haim, A. & Kissinger, M. (2012) "The ecological footprint as an educational tool for sustainability: A case study analysis in an Israeli public high school" *International journal of educational development* 32, 193-200

Gough, A. (1997) *Education and the environment: policy, trends and the problems of marginalisation* Melbourne: Australian Council for environmental research

Granville, S.; Laird, A.; Barber, M. & Rait, F. (2002) *Why do Parents Drive their Children to School? Transport Research Series* Edinburgh: Scottish Executive Central Research Unit

Green Schools Project, online at:
 www.greenschools.net (Accessed on 17th March 2010)

Greene, C.; Caracelli, V. & Graham, W. (1989) "Towards a conceptual framework for mixed-methods evaluation designs" *Educational evaluation and policy analysis* 11(3) 255-274

Groundwork (2009) *Progress summary for mainstreaming sustainable schools*, online at: www.groundwork.org.uk (Accessed on 12th February 2011)

Gudmundsdottir, G. & Brock-Utne (2010) "An exploration of the importance of piloting and access as action research" Educational Action Research, 18(3) 359-372

Hanley, N. & Atkinson, G. (2003) Economics and sustainable development: what have we learnt, and what do we still need to learn? In: Berkhout, F.; Leach, M. & Scoones, I. (Eds.) *Negotiating environmental change. New perspectives from social science* Cheltenham: Edward Elgar Publishing Limited, pp77-108

Hannigan, J. (1995) *Sociologia ambiental: a formação de uma perspectiva social* Lisboa: Instituto Piaget

Hannigan, J. (2006) *Environmental Sociology. A social constructionist perspective* London: Routledge

Harrison, C.; Comber, C.; Fisher, T.; Haw, K.; Lewin, C.; Lunzer, E.; McFarlane, A.; Mavers, D.; Scrimshaw, P.; Somekh, B. & Watling, R. (2002) *ImpacCT2: the impact of information and communication technologies on pupil learning and attainment* London: DfES

Harvey, F. (2012) "Britain merely 'outsourcing' carbon emissions to China, says MPs", *The Guardian*, online at: http://www.awid.org/News-Analysis/Rio-20-Special-Focus/Women-s-groups-statements-and-reactions-Folder/%28offset%29/10 (Accessed on 22th March 2012)

Healthy Schools Programme, online at: http://www.healthyschools.org.uk/ (Accessed on 04th April 2012)

Herriott, R. & Firestone, W. (1983) "Multisite qualitative policy research: optimizing description and generalizability", *Educational Researcher*, 12(2) 14-19

Hicks, D. (2002) *Lessons for the future. The missing dimension in education* London: Routledge Falmer

Higgins, P. (2009) "Into the big wide world: sustainable experiential education for the 21st century" *Journal of experiential education,* 32(1) 44-60

HMSO (1988) *Education Reform Act 1988*, online at: http://www.legislation.gov.uk/ukpga/1988/40/pdfs/ukpga_19880040_en.pdf (Accessed on 12th May 2011)

Holdsworth, S.; Thomas, I. & Hegarty, K. (2013) Sustainability education: theory and practice. In: Stevenson, R; Brody, M., Dillon, J. Wals, A. (Eds.) *International handbook of research on environmental education* Oxon: Routledge, pp349-358

House of Commons Environmental Audit Committee (2003) *Learning the sustainability lesson*, Volume I, London: The Stationary Office Limited

Howard, P. (1978) *Weasel Words* London: Hamish Hamilton

Huckle (n/d) "Primary education in changing times", *Burning Issue* n. 5

Huckle, J. (n/d) *Education for sustainability: some guidelines for curriculum reform* South Bank University

Huckle, J. (2004) Critical realism: a philosophical framework for higher education for sustainability. In: Corcoran, P. & Wals, A. (Eds.) *Higher education and the challenge of sustainability: problematics, promise, and practice* Dordrecht: Kluwer Academic Publishers

Huckle, J. (2006) *A UK indicator for the impact of formal learning on knowledge and awareness of sustainable development: proposals from the Sustainable Development Commission*, online at:
http://john.huckle.org.uk/publications_downloads.jsp (Accessed on 22th June 2011)

Huckle, J. (2008) "An Analysis of New Labour's Policy on Education for Sustainable Development (ESD) with Particular Reference to Socially Critical Approaches", *Environmental Education Research*, 14 (1) 65 – 75

Huckle, J. (2009) "Consulting the UK ESD community on an ESD indicator to recommend to Government: an insight into the micro-politics of ESD", *Environmental Education Research*, 15 (1) 1-15

Huckle, J. (2010) *Exploring the contradictions*, online at: http://www.aeiforum.eu/images/bibliography/en/SusSchsJH09Notes.pdf

Huckle, J. & Sterling, S. (1996) *Education for Sustainability* London: Earthscan

Inclusion Award Project, online at:
http://www.inclusionmark.co.uk/ (Accessed on 09th April 2011)

Instituto Nacional de Estatistica, online at:
http://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_publicacoes&PUBLICACO ESpagenumber=5&PUBLICACOESrevista=00&PUBLICACOEStema=5414265 (Accessed on 27th March 2012)

International Schools Award Project, online at:
http://schoolsonline.britishcouncil.org/accreditation-and-awards/isa/uk-schools/about (Accessed on 01st May 2011)

IPCC (2007) *Fourth assessment report: Climate change 2007* Cambrigde: Cambridge University Press

IUCN (1980) *World Conservation Strategy. Living resource conservation for sustainable development*, online at: http://data.iucn.org/dbtw-wpd/edocs/WCS-004.pdf (Accessed on 16th May 2012)

IUCN, UNEP & WWF (1991) *Caring for the Earth: a strategy for sustainable living,* online at: http://coombs.anu.edu.au/~vern/caring/care-earth1.txt (Accessed on 20th May 2012)

Jackson, L. (2007) *Leading sustainable schools: What the research tells us* London: Worldwide Fund for Nature

Jansen, H. (2010) "The Logic of Qualitative Survey Research and its Position in the Field of Social Research Methods", *Forum: Qualitative Social Research*, 11 (2) Art.11

Jickling, B. (1992) "Why I don't want my children to be educated for sustainable development", *Journal of Environmental Education*, 23(4) 5-8

Jickling, B. & Wals, A. (2008) "Globalisation and environmental education: looking beyond sustainable development", *Journal of Curriculum Studies*, 40(1) 1-21

Jickling, B. & Wals, A. (2012) "Debating education for sustainable development twenty years after Rio. A conversation between Bob Jickling and Arjen Wals", *Journal of education for sustainable development*, 6(1) 49-57

Jickling, B. & Wals, A. (2013) Probing normative research in environmental education: ideas about education and ethics. In: Stevenson, R; Brody, M.; Dillon, J. & Wals, A. (Eds.) (2013) *International handbook of research on environmental education* Oxon: Routledge, pp.74-86

Johnson, R. & Onwuegbuzie, A. (2004) "Mixed methods research: a research paradigm whose time has come", *Educational Researcher*, 33(7) 14-26

Kearns, G. (1991) "This common inheritance: green idealism versus tory pragmatism", *Journal of Biogeography*, 18(4) 363-370

Kingsmead primary school, online at
http://clc2.uniservity.com/GroupRenderCustomPage.asp?GroupID=176912&ResourceId=22 26306 (Accessed on 08th February 2012)

Lafferty, W. & Meadwcroft, J. (Eds.) (2000), *Implementing sustainable development in high consumption societies* Cambridge: Cambridge University Press

Lavery, A. & Smyth, J. (2003) "Developing environmental education, a review of a Scottish project: International and political influences, *Environmental education research*, 9(3) 359-383

Lélé, M. (1991) "Sustainable Development: A Critical Review", *World Development,* 19 (6) 607-621

Liddicoat, K. & Krasny, M. (2013) Research on long-term impacts of environmental education. In: Stevenson, R; Brody, M.; Dillon, J. & Wals, A. (Eds.) *International handbook of research on environmental education* Oxon: Routledge, pp.289-297

Lindstrom, M. & Seybold, P. (2003) *BrandChild: remarkable insights into the minds of today's global kids and their relationship with brands* London: Kogan Page Ltd.

Louv, R. (2005) *Last Child in the Woods: saving our children from nature-deficit disorder* Chapel Hill: Algonquin Books

Manteaw, O. (2012) "Education for sustainable development in Africa: the search for pedagogical logic", *International Journal of Educational Development*, 32, 376-383

Martin, P. (1996) A WWF view of education and the role of NGOs. In: Huckle, J. & Sterling, S. (Eds.) *Education for sustainability* London: Earthscan

Martin, S.; Dillon, J.; Higgins, P.; Peters, C. & Scott, W. (2013) "Divergent evolution in education for sustainable development policy in the UK: Current status, best practice, and opportunities for the future", *Sustainability*, 5, 1522-1544

Mason, J. (1996) *Qualitative Researching* London: Sage

Mason, J. (2004) The legal context. In: Fraser, S.; Lewis, V.; Ding, S.; Kellett, M. & Robinson, C. (Eds.) *Doing research with children and young people* London: Sage Publications, pp. 23-32

Matthews, H.; Hendrickson, C. & Weber, C. (2008) "The importance of carbon footprint estimation boundaries", *Environmental science & technology*, 42(16) 5839-5842

Meadows, D.; Meadows, D.; Randers, J. & Behrens III, W. (1972) *Limits to Growth* New York: New American Library

Mol, A. & Spaargaren, G. (2000) "Ecological modernisation theory in debate: a review", *Environmental Politics*, 9, 17-49

National Children's Bureau (2011) *Active transitions: a guide to promoting active and sustainable travel for children making the transition from primary to secondary school*, online at: http://www.ncb.org.uk/media/26949/activetransitions2011.pdf (Accessed on 18th May 2012)

Natural England (2008) *State of the natural environment 2008* Worcester, online at: http://publications.naturalengland.org.uk/publication/31043?category=118044 (Accessed on 02nd May 2012)

Natural England (2010) *Lost life: England's lost and threatened species* Worcester, online at: http://publications.naturalengland.org.uk/publication/32023 (Accessed on 15th May 2012)

NCSL (2007) *Head for the future*, online at: http://www.ncsl.org.uk/programmes/headforthefuture/index.cfm

Ney, S. (2009) *Resolving messy policy problems* London: Routledge

NHS Information Centre (2012) *Statistics on obesity, physical activity and diet: England 2012,* online at:
http://www.aso.org.uk/wp-content/uploads/downloads/2012/03/2012-Statistics-on-Obesity-Physical-Activity-and-Diet-England.pdf (Accessed on 05th August 2011)

Ofsted, online at:
http://www.ofsted.gov.uk/inspection-reports/find-inspection-report (Accessed on 19th July 2011)

O'Neill, J.; Light, A. & Holland, A. (2008) *Environmental values* London: Routledge

O'Riordan, T. (Ed.) (1995) *Environmental science for environmental management* Essex: Longman

Ofsted (2008) *Schools and sustainability: A climate for change* London: HMSO

Ofsted (2009) *Education for sustainable development: improving schools, improving lives* Manchester: HMSO

Onwuegbuzie, A. & Leech, N. (2004) "Enhancing the interpretation of significant findings: the role of mixed methods research", *Eastern Educational Research Association* Florida: Clearwater

Orr, D. (1992) *Ecological Literacy. Education and the transition to a Postmodern World* New York: State University of New York Press

Orr, D. (2004) *Earth in Mind: on education, environment, and the human prospect* Washington: Island Press

Orr, D. (2005) *Ecological Literacy: Educating Our Children for a Sustainable World* San Francisco: Sierra Club Books

Palmer, J. (1998) *Environmental Education in the 21st Century. Theory, Practice, Progress and Promise* London: Routledge Falmer

Palmer, S. (2006) *Toxic childhood. How the modern world is damaging our children and what we can do about it* London: Orion Books Ltd

Parsons, T. (1964) *Social Structure and Personality* London: Free Press of Glencoe

Pearce, D.; W. Markandya, A. & Barbier, E. (1990) *Blueprint for a Green Economy* London: Earthscan Publications

Porritt, J. (1984) *Seeing Green: the politics of ecology explained* Wiley-Blackwell

Porritt, J. (2008) Preface. In: Webster, K. & Johnson, C. *Sense and sustainability. Educating for a low carbon world* TerraPreta

Porritt, J.; Hopkins, D.; Birney, A. & Reed, J. (2009) *Every Child's Future: leading the way* Nottingham: National College for Leadership of Schools and Children's Services, online at: www.nationalcollege.org.uk/index/docinfo.htm?id=33294&filename=every-childs-future-leadingthe-way.pdf

Punch, S. (2009) Researching childhoods in rural Bolivia. In: Tisdall, E., Davis, M. & Gallagher, M. (Eds.) *Researching with children & young people. Research design, methods and analysis* London: Sage, pp.89-96

Recycle Now Organisation, online at: http://www.recyclenow.com/ (Accessed on 02nd October 2011)

Redclift, M. (Ed.) (2005) *Sustainability. Critical concepts in the Social Sciences* Oxfordshire: Routledge

Redclift, M. & Woodgate, G. (Eds.) (2000) *The international handbook of Environmental Sociology* Cheltenham: Edward Elgar

Rees, W. (1992) "Ecological footprints and appropriated carrying capacity: what urban economics leaves out" *Environment and Urbanization,* 4(2) 121-130

Reid, A.; Jensen, B.; Nikel, J. & Simovska, V. (Eds.) (2008) *Participation and learning. Perspectives on education and the environment, health and sustainability* Springer

Rein, M. (1983) *From policy to practice* London: Macmillan

Ricard, M. (2012) The recognition of sustainable development in the French educational system. In: Stoltenberg, U. & Holz, V. (Eds.) *Education for sustainable development – European approaches* Lorrach: Vas-Verlag

Richards, L. (1995) Transition work! Reflections on a three-year NUD IST project. In: Burgess, R. (Ed.) *Studies in qualitative methodology: Vol. 5. Computing and qualitative research* Greenwich: JAL, pp. 105-140

Rittel, H. & Webber, M. (1973) "Dilemmas in a general theory of planning" *Policy sciences,* (4) 155-169

Rizvi, F. & Lingard, B. (2010) *Globalizing education policy* Oxon: Routledge

Robinson, M. (2001) *The microfinance revolution: Sustainable finance for the poor* DC: The World Bank

Robottom, I. (1987) (Ed.) *Environmental Education: practice and possibility* Victoria: Deakin University

Rose, C. (1990) *The dirty man of Europe: the Great British pollution scandal* Michigan: Simon & Schuster

Ross, H. (2011) *Sustaining the impact* – Research report

Royal Horticultural Society, online at:
http://apps.rhs.org.uk/schoolgardening/default.aspa (Accessed on 05th November 2011)

RPSB Wildlife Action Awards, online at:
http://schoolsonline.britishcouncil.org/accreditation-and-awards/isa/uk-schools/about
(Accessed on 14th February 2012)

Sachs, W. (2010) Globalization, convergence and the Euro-Atlantic development model. In: Redclift, M. & Woodgate, G. (Eds.) *The international handbook of Environmental Sociology* Cheltenham: Edward Elgar, pp262-275

Santos, M. (2011) *Educacao para a cidadania – proposta curricular para os ensinos basico e secundario*, online at: www.dge.mc.pt/educacaocidadania (Accessed on 24th March 2012)

Sarre, P. & Smith, P. (1991) *One world for one Earth: saving the environment* London: Open University

Schmidt, L. (1999) *Portugal ambiental: casos & causas* Oeiras: Celta Editora

Schmidt, L. (2010) "O pontape na porta", *Feito e Dito*, Dossier para o desenvolvimento sustentavel, pp34-39

Schmidt, L.; Nave, J. & Guerra, J. (2010) *Educacao ambiental: balanco e perspectivas para uma agenda mais sustentavel* Lisboa: ICS Imprensa de Ciencias Sociais

Schnack, K. (1998) Why focus on conflicting interests in environmental education?, *Environmental Education for Sustainability* Frankfurt amMain: Peter Lang, pp83-96

Schnack, K. (2008) Participation, education, and democracy: implications for environmental education, health education, and education for sustainable development. In: Reid, A.; Jensen, B.; Nikel, j. & Simovska, V. (Eds.) *Participation and learning. Perspectives on education and the environment, health, and sustainability* Springer, pp181-196

Schumacher, E. (2001) Preface. In: Sterling, S. (2001) *Sustainable education. Re-visioning learning and change* Bristol: Green Books

Scott, W. (n/d) *Sustainable Schools: an initial appreciation and critique*, Schemes Limited

Scott, W. (2007) *Raising Standards: making sense of the sustainable schools agenda* London: Specialist Schools and Academies Trust

Scott, W. (2009a) *Blog: chicken and egg*, National Sustainable Schools Online Conference 2009

Scott, W. (2009b) *International and UK contexts for learning for sustainability: a brief comment on issues*, UK National Sustainable Schools Conference, Preston

Scott, W. (2011) "Sustainable schools and the exercising of responsible citizenship – a review essay", *Environmental Education Research*, 17 (3) 409-423

Scott, W. (2013) "Lessons from sustainability", *Primary Geography*, Spring 2013

Scott, W. & Gough, S. (2003) *Sustainable Development and Learning: framing the issues* London: Routledge

SDC (2009) *Every Child's Future Matters* London: Sustainable Development Commission, online at:
 www.sd-commission.org.uk/file_download.php?target=/publications/downloads/ECFM_report.pdf
(Accessed on 10th October 2011)

Seror, J. (2005) "Computers and qualitative data analysis: paper, pens, and highlighters vs. screen, mouse, and keyboard", *Tesol Quarterly*, 39(2) 321-328

Shallcross, T.; Robinson, J.; Pace, P. & Wals, A. (2006). *Creating sustainable environments in our schools.* Oakhill: Trentham Books Lt

Sheperd, J. (2011) "Almost a quarter of state school pupils are from an ethnic minority", 22 June 2011, *The Guardian*, online at:
http://www.guardian.co.uk/education/2011/jun/22/quarter-state-school-pupils-from-ethnic-minority (Accessed on 26th November 2011)

Shove, E. (2003) *Comfort, cleanliness and convenience: the social organisation of normality* Berg

Sibley, D. (1991) "Children's geographies: some problems of representation" *Area*, 23, 269-270

Simon, R. (2012) "UK carbon emissions: where do they come from and how have they changed?", *The Guardian*, 07 Feb 2012, online at:
 http://www.guardian.co.uk/news/datablog/2012/feb/07/uk-carbon-emissions-come-from
(Accessed on 07 March 2012)

Slattery, P. (2006) *Curriculum development in the Postmodern Era* New York: Taylor and Francis Group

Smyth, J. & Shacklock, G. (1998) *Re-making teaching. Ideology, policy and practice.* London: Routledge

Social Research Association, online at: www.the-sra.org.uk/ethicl.htm (Accessed on 10th October 2010)

Soddart, H. & Cruickshank, E. (Eds.) (2011) *A pocket guide to sustainable development governance* Stakeholder Forum & Commonwealth Secretariat

Solidarity Schools Stamp Project in Brazil, online at: http://www.facaparte.org.br/?cat=7 (Accessed on 12th February 2011)

Stables A. (2010) "New Worlds Rising", *Policy Futures in Education*, 8(5)

Stake, R. (1995) *The art of case study research* London: Sage

Stahl, C. & Cimorelly, A. (2012) "A demonstration of the necessity and feasibility of using a clumsy decision analytic approach on wicked environmental problems", *Integrated Environmental Assessment and Management*, 9(1) 17-30

Standish, A. (2009) *Global perspectives in the geography curriculum. Reviewing the moral case for geography* London: Routledge

Sterling, S. (1992) *Good Earth-keeping, education, training and awareness for a sustainable future* UNEP-UK

Sterling, S. (1993) Environmental education and sustainability: a view form holistic ethics. In: Fien, J. *Education for the environment. Critical curriculum theorising and environment education* Victoria: Deakin University Press

Sterling, S. (1996) Education in change. In: Huckle, J. & Sterling, S. *Education for sustainability* London: Earthscan

Sterling, S. (2001) *Sustainable education. Re-visioning learning and change* Bristol: Green Books

Sterling S. (2004) Higher education, sustainability and the role of systemic learning. In: Corcoran, P. & Wals, A. (Eds.) *Higher Education and the Challenge of Sustainability: Contestation, Critique, Practice, and Promise* Dordrecht: Kluwer Academic

Sterling, S. (2005) *Linking thinking. New perspectives on thinking and learning for sustainability* Aberfeldy: WWF Scotland

Sterling, S. (2011) *Sustainable education. Re-visioning learning and change* Devon: Green books

Stevenson, R. (1987) Schooling and environmental education: contradictions in purpose and practice. In: Robottom, I. (Ed.) *Environmental education: practice and possibility* Victoria: Deakin University Press, pp 70-89

Stevenson, R. (2013) Researching tensions and pretensions in environmental/sustainability education policies: from critical to civically engaged policy scholarship. In: Stevenson, R; Brody, M.; Dillon, J. & Wals, A. (Eds.) *International handbook of research on environmental education* Oxon: Routledge, pp.147-155

Stevenson, R; Brody, M.; Dillon, J. & Wals, A. (Eds.) (2013) *International handbook of research on environmental education* Oxon: Routledge

Stibbe, A. (2009*) The handbook of sustainability literacy. Skills for a changing world* Devon: Green Books Ltd

Stone, M & Barlow, Z. (Eds.) (2005) *Ecological literacy. Education our children for a sustainable world* San Francisco: Sierra Club Books

Sustainability and Environmental Education, online at:
http://se-ed.co.uk/edu/ (Accessed on 18th June 2010)

Sustainable Development Education Panel (1998*) Education for sustainable development in the schools sector*, a report to DfEE/QCA, ("The Holland report") online at: http://www.tidec.org/sites/default/files/uploads/Sustainable_Development_Education_Panel _Annual_Report_1998.pdf (Accessed on 03rd April 2011)

Sustainable Development Education Panel (2003) Learning to Last: the Government's Sustainable Development Education Strategy for England, online at: http://www.desd.org.uk/UserFiles/File/new_articles/england/defra/sdep/SDEP%202003-Learning_to_Last-Govt_SD_Ed_Strategy.pdf (Accessed on 06th October 2010)

Sustainable Schools Project in the USA, online at:
http://www.sustainableschoolsproject.org/ (Accessed on 17th November 2010)

Sustainable Schools Australia, online at:
www.sustainableschools.com.au (Accessed on 08th January 2011)

Sustainable Schools Brazil, online at:
www.ecocentro.org/vida-sustentavel/habitats/ (Accessed on 30th July 2010)

Swift, D. (1969) *The sociology of education: introductory analytical perspectives* London: Routledge & Kegan Paul Ltd.

Symons, G. (2008) *Practice, Barriers and enablers in ESD and EE: a review of the research* Shrewsbury: SEEd

Teixeira, F. (2003) *A educação ambiental em Portugal* Lisboa: LPN

Terry, S. (2008) *The Green School. How your school can achieve and promote sustainability* Norwich: Adamson Publishing Ltd

The Telegraph (2010) "Primary league tables 2010: How to read the Key Stage 2 results", online at:
 http://www.telegraph.co.uk/education/primaryeducation/8199743/Primary-league-tables-2010-how-to-read-the-Key-Stage-2-results.html

Tilbury, D. (2011) *Education for sustainable development: An expert review of processes and learning* Paris: UNESCO

Tilbury, D. & Mulà, I. (2009). *Review of Education for Sustainable Development Policies from a Cultural Diversity and Intercultural Dialogue: Gaps and Opportunities for Future Action* Paris: UNESCO.

Titman, W. (1994) *Special places; special people. The hidden curriculum of school grounds* Surrey: WWF UK

Tisdall, E.; Davis, M. & Gallagher, M. (Eds.) (2009) *Researching with children & young people. Research design, methods and analysis* London: Sage

UN WomenWatch, online at: http://www.un.org/womenwatch/feature/climate_change/downloads/Women_and_Climate_ Change_Factsheet.pdf (Accessed on 15th April 2012)

UNCED (1992a) *Rio Declaration on Environment and Development*, Rio de Janeiro, online at: http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm (Accessed on 16th April 2010)

UNCED (1992b) *Agenda 21: programme of action for sustainable development*, Rio de Janeiro, online at: http://sustainabledevelopment.un.org/index.php?page=view&nr=23&type=400&menu=35 (Accessed on 16th April 2010)

UNDP (2011) *Human development report: Sustainability and equity – a better future for all*, New York, online at: http://hdr.undp.org/en/reports/global/hdr2011/ (Accessed on 17th April 2011)

UNEP (2000) *Global environment outlook*, online at: http://www.unep.org/geo/GEO2000/english/Index.htm (Accessed on 05th February 2012)

UNESCO (1977) *The Tbilisi Declaration, Intergovernmental Conference on Environmental Education*, October 14-26, 1977, Georgia, online at: http://www.gdrc.org/uem/ee/tbilisi.html (Accessed on 03rd March 2011)

UNESCO (2002) *Education for sustainability. From Rio to Johannesburg: Lessons learnt from a decade of commitment* Johannesburg

UNESCO (2006) *Education for sustainable development toolkit* Paris

United Kingdom National Commission for UNESCO (2008) *ESD in the UK in 2008: A survey of action. The UN Decade of Education for Sustainable Development, 2005-2014* London

United Kingdom National Commission for UNESCO (2010) *Education for Sustainable Development in the UK in 2010* London

United Kingdom National Commission for UNESCO (2013) *Education for Sustainable Development in the UK - Current status, best practices and opportunities for the future* London: UNESCO, online at: http://www.unesco.org.uk/uploads/Brief%209%20ESD%20March%202013.pdf (Accessed on 08th April 2013)

United Nations (1998) *Kyoto Protocol to the United Nations Framework Convention on Climate Change* Bonn

Vare, P. & Scott, W. (2007) "Learning for a change: exploring the relationship between education and sustainable development", *Journal of Education for Sustainable Development*, 1(2) 191-198

Vermeij, M.; Douglas, M.; Ellis, R.; Engel, C.; Hendriks, F.; Lohmann, S.; Ney, S.; Rayner, S. & Thompson, M. (2006) The case for clumsiness. In: Vermeij M. (Ed.) *Clumsy solutions for a complex world: governance, politics plural perceptions* New York: Palgrave MacMillan

Wackernagel, L.; Onisto, L.; Linares, A.; Falfan, S.; Garcia, J.; Guerrero, A. & Guerrero, G. (1997) *Ecological footprints of nations: how much nature do they use? – How much nature do they have?,* Toronto: The Earth Council:

Waite, S. (2007) "Memories are made of this': some reflections on outdoor learning and recall" *Education 3-13: International Journal of Primary, Elementary and Early Years Education,* 35(4) 333-347

Waters, A. (2005) Fast-food values and slow food values. In: Stone, M & Barlow, Z. (Eds.) *Ecological literacy. Education our children for a sustainable world* San Francisco: Sierra Club Books, pp98-115

WCED (1987) *Our Common Future* Oxford: Oxford University Press

Webster, K. (2004) *Rethink. Refuse. Reduce…* Shrewsbury: FSC

Webster, K. & Johnson, C. (2008) *Sense and sustainability. Educating for a low carbon world,* TerraPreta

Weelie, D. & Wals, A. (2002) "Making biodiversity meaningful through environmental education" *International journal of science education,* 24(11) 1143-1156

Weilbacher, M. (1993) "The renaissance of the naturalist". *Journal of Environmental Education*, 25(1) 4-7

Wells, N. & Lekies, K. (2006) "Nature and the life course: pathways from childhood nature experiences to adult environmentalism" *Children, Youth and Environments,* 16(1) 1-24

Welsh, E. (2002) "Dealing with data: Using NVivo in the qualitative data analysis process" *Forum Qualitative Data Research*, 3(2) Art. 26

Wickstrom, G. & Bendix, T. (2000) "The 'Hawthorne effect' – what did the original Hawthorne studies actually show?" *Scandinavian Journal of work, enviroment & health,* 26(4) 363-367

WRAP (2008) *The nature and scale of waste produced by schools in England* Oxon

WWF (2005) *Linking thinking. New perspectives on thinking and learning for sustainability* Aberfeldy: WWF Scotland

WWF (2008) *Living planet report 2008* Gland

WWF (2010) *Living planet report 2010: biodiversity, biocapacity and development* Gland

WWF-UK (2006) *Counting consumption: CO_2 emissions, material flows and ecological footprint of the UK by Region and Devolved Country* London

Yearley, S. (1996) *Sociology, Environmentalism, Globalisation. Reinventing the Globe* London: Sage

Yin, R. (2009) *Case study research: design and methods* Thousand Oaks: Sage

Young L. & Barrett, H. (2000) "Adapting visual methods: action research with Kampala street children", *Area,* 33(2) 141-152

Zeyer, A. & Kelsey, E. (2013) Environmental education in a cultural context. In: Stevenson, R; Brody, M.; Dillon, J. & Wals, A. (Eds.) *International handbook of research on environmental education* Oxon: Routledge, pp206-212

Appendices

Appendix 1 – Photos from the case study schools

Appendix 2 – Documents from the case study schools

Appendix 3 – Field diary guideline

Appendix 4 – Interviews guideline

Appendix 5 – Questionnaires (English and Portuguese)

Appendix 1 - Photos from the case study schools

Photo 1 – Green School in Bali

Photo 2 – Vegetable grow plots, Green School

Photo 3 – Vegetable plots for each year group, Outdoor School

Photo 4 – Wildlife area, Peace School
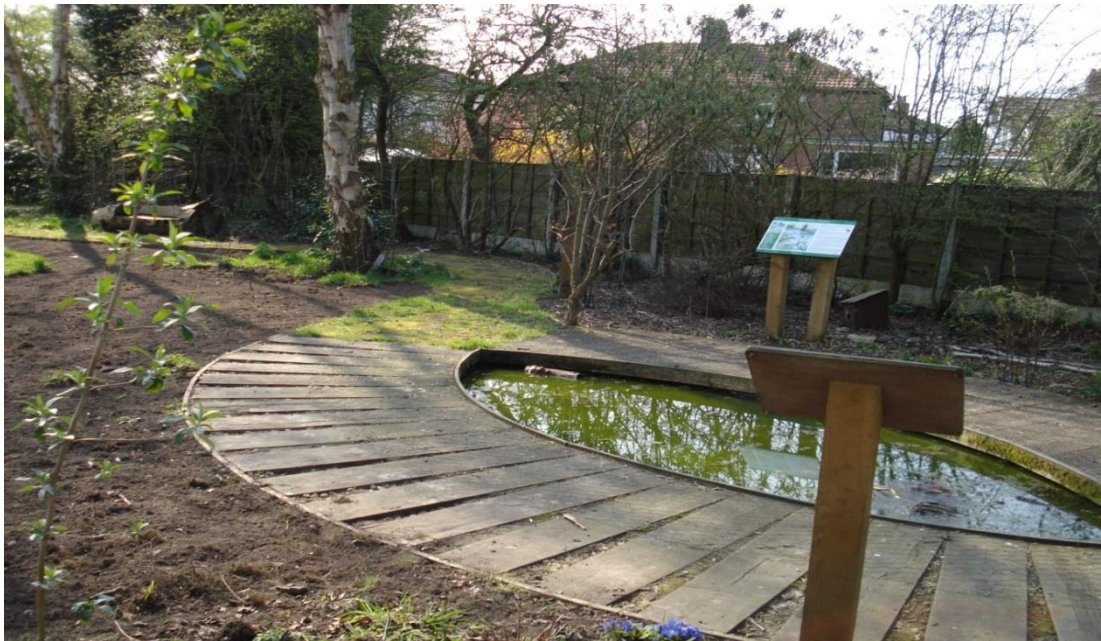
Photo 5 – Wildlife area, Energy School

Photo 6 – Outdoor classroom inside the wildlife area, Peace School

Photo 7 – Insect hotel and woodpile in the wildlife area, Peace School

Photo 8 – Ladybug hotel, grounds Green School

Photo 9 – Chickens and pigs in the grounds of Green School

Photo 10 – Labyrinth garden, Peace School

Photo 11 – Secure bike storage, grounds, Green School

Photo 12 – Poster in the hall of Peace School about recycling and the recycling team

Photo 13 – Example of spacecraft made with plastic bottles and other used materials for an art project, Green School (2011)

Photo 14 – Example of an old tyre used in the grounds of Outdoor School to grow plants

Photo 15 – Interior of the new building, Green School

Photo 16 – Rainwater harvesting system in the grounds of Outdoor School

Photo 17 – Boxes which allow remote monitoring of utility meters, project from Energy School together with the company Research Machines

Photo 18 – Green School energy cabin and wood pellets silo

Photo 19 – Rainwater monitoring unit, Green School

Photo 20 – Example of a sheet used in the "Darwin's game", Outdoor School

Photo 21 – "Darwin's game" Outdoor School

Photo 22 – Poster in the hall of Peace School informing about the energy management policy of the school and the energy team actions
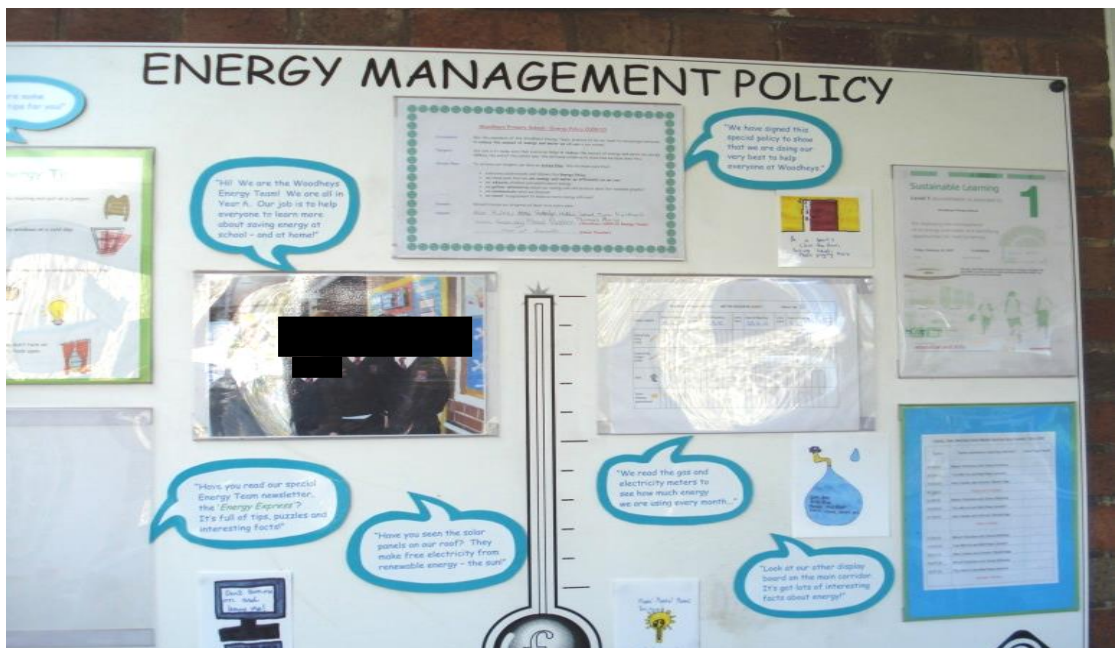
Photo 24 – Example of a weekly menu from Multicultural School where various options are available: vegetarian meal e.g. cheese hot pot, mash potatos & sweet corn, organic meat and international food e.g hala bolognaise or falafel & pitta bread

Photo 25 – Garbage bin in the grounds of Multicultural School with empty crips and chocolate packages

Photo 26 – Grounds, Peace School

Photo 27 – Grounds, Outdoor School

Photo 28 – The "Active learners" group from Green School visiting the local farm

Photo 29 - Local farm which children from Outdoor School visit regularly

Photo 30 – Land with pond next to Multicultural School

Appendix 2 – Documents from the case study schools

Figure 1 – Example of a campaign in a newsletter (2011) of Green School appealing to the parents to bring some unwanted items to the school so they can be recycled

Figure 2 –Extracts of the Geography Policy document, 2010, Peace School

Introduction

This policy outlines the teaching, organisation and management of geography taught and learnt at ▆▆▆▆▆ Primary School.

The policy has been drawn up as a result of staff discussion and has the full agreement of the Governing Body. The implementation of this policy is the responsibility of all teaching staff. The responsibility for monitoring and review rests with the Geography co-ordinator.

Our Aims

Through our teaching of geography we aim to:
- ➢ stimulate pupils' interest in and curiosity about their surroundings
- ➢ develop their understanding of the world as future global citizens
- ➢ increase their knowledge and understanding of the changing world
- ➢ encourage pupils to ask questions and propose solutions to environmental problems
- ➢ develop pupils' competence in specific geographical skills
- ➢ foster a sense of responsibility for the earth and its resources

Through Geography we can also:
- ➢ Improve pupils' skills in literacy, numeracy and ICT
- ➢ Develop pupils' thinking skills
- ➢ Promote pupils' awareness and understanding of gender, cultural, spiritual and moral issues
- ➢ Develop pupils as active global citizens

Strategies for the teaching of Geography

4. Where possible we use our fantastic school grounds to enrich the children's experiences in geography. For example, pond dipping or bird watching in the Wild Area, links with PE using the Orienteering Trail and Nature Trails through the arboretum.

5. For six years we have been linked to two schools in Durban, South Africa through the 'Afritwin' project. This link has proved invaluable to the school and has enabled staff and pupils to gain a deeper understanding of another country and culture. It is embedded in the curriculum and as an extra-curricular activity.

6. We are an Eco School, and so sustainability is very important to us.   Pupils are given every opportunity to participate in a wide variety of activities, e.g. Eco School Council, Recycling Team and Energy Team.

Figure 3 – Song learned in music called "things that matter", Peace School

Things That Matter

We've got the edge on the things that matter
We don't let things lie.
Eat healthy food and you won't get fatter
Think of what you buy…
We don't let things lie.

Trying to find a way to live
Our lives on Planet Earth.
It needs to last for years to come.
Let's show them what it's worth.
Chorus

Heating up an empty room
It doesn't make much sense.
Who are all the lights on for?
It costs much more than pence.
Chorus

Garbage mountains underground
Are growing all the time.
There has to be a better way
Recycle what you can.
Chorus

Figure 4 – WWF Poster used in a session of Philosophy for children in Peace School (2011)

Figure 5 - Examples of Year 2 pupil's draws about the rain forest project
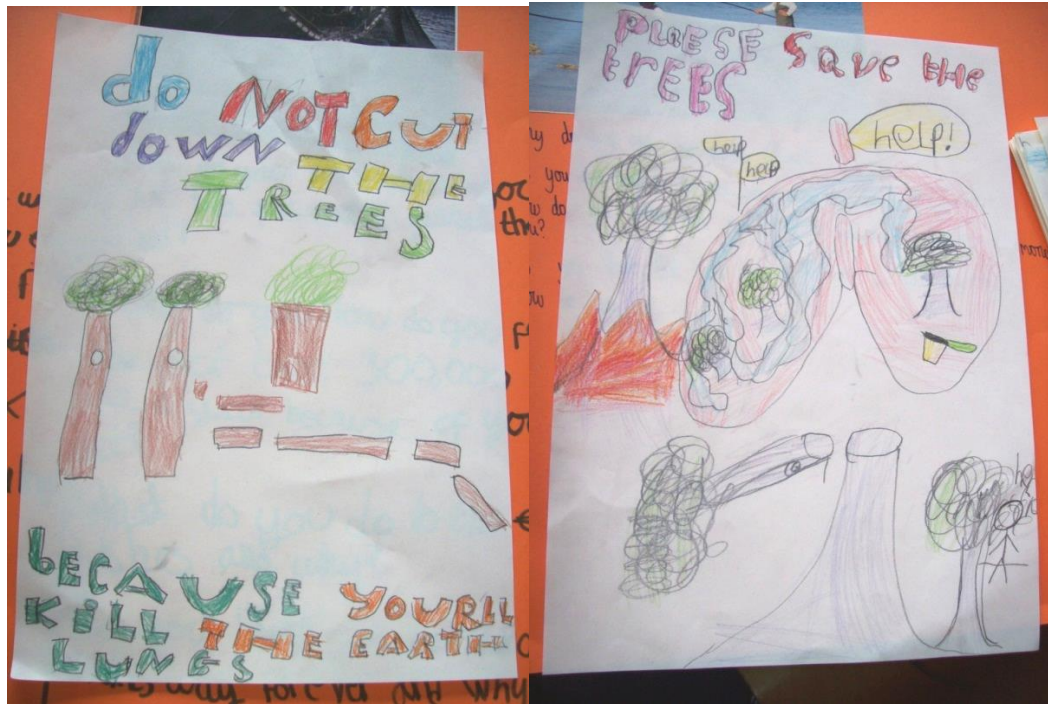
Figure 6 - Example of pupil's work about sustainable and non-sustainable fishing, Year 6 Multicultural School
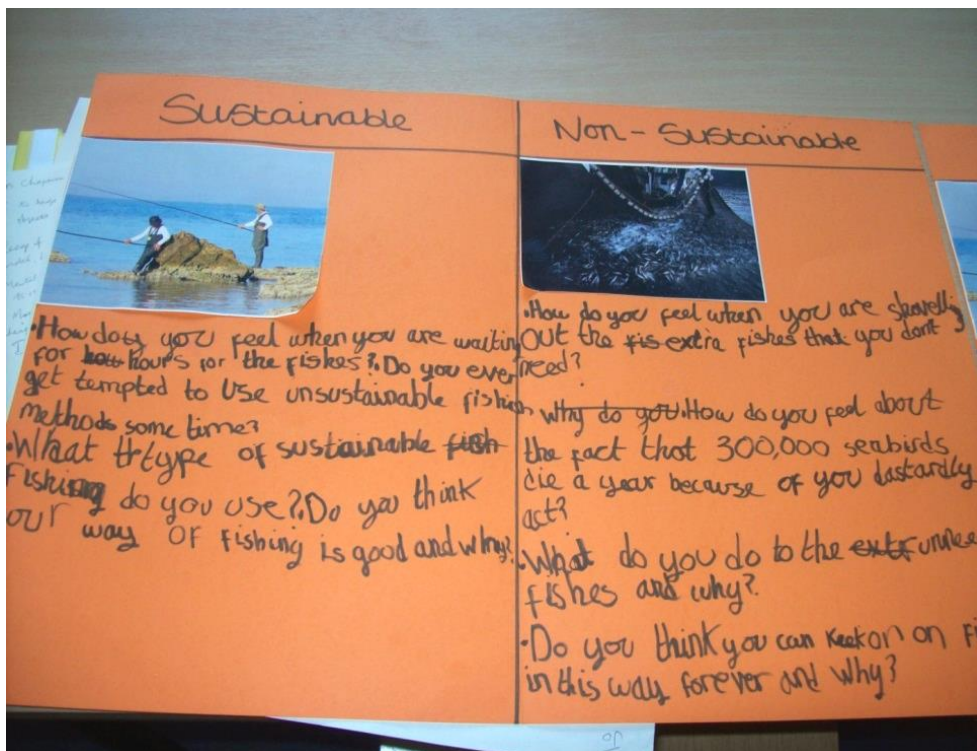
Figure 7 – Example of an activity of the recycling team of Peace School

Our Recycling Team

There are 24 children in our new Recycling Team! They do a very important job, making sure that we use paper on both sides before throwing it into the blue paper bins.

Have you been carefully using the paper bin in *your* classroom?

Figure 8 – Example of sheet with activities for one of the meetings of the Peace Club in Peace School

Peace club meets in room 4 on Tuesdays.
Each half term the club :-

Peace Quotes: -

1) Uses the labyrinth.

2) Writes peace poems/prayers.

3) Looks at relaxing DVDs and listens to calming music.

4) Updates the display board with new work/photos.

5) Create/play games, (including the peace mala treasure hunt.)

6) Develop ideas to help children who aren't enjoying playtime.

7) Runs a combination of Peace & Play Pals at break times.
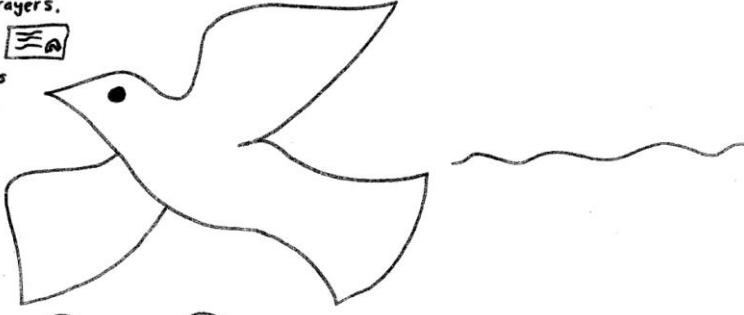
8) Use the internet for research.

Peace Symbols:-

Figure 9 – Example of a worksheet used in a PHSE lesson to teach children about the differences between countries and cultures

Masud and Me

Recently we looked at the differences between the lives of people in rich and poor countries around the world. We cannot choose where we are born. Here is an exercise to help you to understand how lucky we are to live in the UK.

Read the accompanying sheet, which tells you about the life of Masud, a 10-year-old boy who lives and works in the railway station in Dacca, a large city in Bangladesh. Both his parents are dead and he has to look after himself.

You	Masud
When do you (a) get up and (b) go to bed? I get up at 7.30am I go to bed at 9.00	When does he (a) get up and (b) go to 'bed'? I get up 6.00 and I go to bed at 9.00.
How often do you eat every day? I eat there times a day.	How often does he eat every day? Once a day if he had finished his
How do the adults in your life treat you? They treat me whe they know me.	How do the adults in his life treat him? they treat him really bad I think its not fair.
What is your home like? big warm staf.	What shelter does he have? Cold Small not staf
What is your idea of a perfect day? having Lots of fun with my family	What might be Masud's idea of a perfect day? a day off work
If you could give Masud just one gift, what would it be? Give three reasons for your choice. I would give him warm clothes and a new family. * because his	

Figure 10 – Example of a worksheet about prejudice used in a PHSE lesson in Peace School

Figure 11 – Poster in the hall of Peace School with the "eco-tip of the week" where the greenhouse gas emissions caused by plane traveling are explained and how it can be reduced

Figure 12 – Examples of adult courses in Green School published in the newsletter (2011)

COURSES !!!!!   All welcome!

Monday
Gymnastics 5.00 pm
Tuesday
Numeracy 9.30 am
Literacy 12.30 pm
CACHE Level 2 starting 14 September
Ballroom Dancing various classes throughout the evening for
beginners and improvers. Adults and children welcome. 6.30pm onwards
Wednesday
Bowbridge United a weekly club for parents who want to get to know
the school. 9am
Gymnastics 5.00 pm
Slimming Club 6.30 pm
Thursday
Hawtonville Ladies - 9.30 - 12.00 noon
Family History starting 20 January 2011
Friday
ICT in the Media Suite
Gymnastics 5.00 pm
Ballroom Dancing various classes throughout the evening for
beginners and improvers. Adults and children welcome. 6.30pm onwards
Saturday
Guitar classes 9.30am
FURTHER INFORMATION ON ABOVE
COURSES AVAILABLE FROM SCHOOL OFFICE

Figure 13 – Examples of volunteer opportunities published in the newsletters (2011),
Outdoor and Energy Schools

Newsletter October 2011/12, School 3

We are happy to welcome parents in to the school and there are many ways in which parents contribute to the school day, making and playing, reading and maths games with the children, cooking, swimming, shared reading, scribing for children who find writing difficult, listening to and talking to small groups and accompanying groups on visits. Any parents who have spare time to spend within school on a volunteer basis is very much appreciated. Please approach one of the office staff if you are available and willing to help.

Newsletter January 2012, School 4

Can You Help?

Lunchtime Supervisor Assistant (Dinner Person): We have a vacancy for a LSA immediately after half-term. The post involves helping and supervising children in the lunch hall and playgrounds. It also necessitates setting and clearing tables.

Hours: 1¼ hours each day.

Figure 14 – An event in Energy school to raise money for a charity and an appeal in the newsletter (2011) to support another charity

Children In Need /Anti-Bullying Week - Sun 20 Nov 2011 (website)

It was a really strange day but one that raised a staggering £669.96 for Children In Need and Anti-Bullying Week. Most of the staff came to school dressed as Smurfs! Here they are at the start of our school assembly on Friday morning.

Since 1991, Link Romania has been working to make a difference in the lives of poor and needy people in Romania and other Eastern European countries. Although the needs of the people no longer make headlines in the West, they are still as pressing as ever.

Their annual Family Shoebox Appeal has been running since 1992 and has delivered smiles to thousands of people in Eastern Europe over the years. In fact, we have sent over of 450,000 shoeboxes to over 80 different locations!

It's a really simple idea, anyone can get involved, and we are always keen to have more people join our national network of supporters. Your Family Shoeboxes of gifts are given to families who often have to make a choice between buying food or fuel at Christmas time – buying presents is just not a priority. Many of these families do not have running water, heating or electricity. Some live in appalling conditions, often living in just one or two rooms, and life for them is a real struggle to survive.

Fill a shoebox full of smiles

If you are able to donate a shoebox please bring it to the school office by 3.30pm on Monday 31st October

Thank you

Figure 15 – "Values themes" discuss weekly in Green and Multicultural Schools

> **Head teacher** ▉▉▉▉ **writes**……. as your children may have told you, we are having special *Values* themes of the week. This week the value is 'Quality'. Each value is featured in school assemblies and used in some Personal, Social & Health Education (PSHE) lessons. We also refer to them when discussing issues in class or the playground. For example, if a child does really good work we will tell him or her that we are pleased with the 'high quality'. I want ▉▉▉▉ to have high quality in all that we do and I expect all children to share this view. This will mean that each child, as well as the school as a whole, will benefit. If you can suggest improvements to the quality of any aspect of school life, please let me know.

Figure 16 – Example of "the language of the month" initiative in Multicultural School's newsletter

The ▉▉▉▉ **Weekly News**

Volume 3, Issue 4   Friday 7th October 2011

The language of the month is ……Akan - Twi

Language of the Month for October is Akan - Twi (pronounced chwee) which is an Akan language that is the principal native language of Ghana, spoken over much of the southern half of that country, by about 52% of the population. At ▉▉▉▉ we have a few pupils with Ghanaian heritage, speaking either Akan - Twi or Akan - Fante. The choice of Twi this month also reflects the fact that it is Black History Month. To celebrate and to learn more about Ghanaian art and culture some pupils in Year 5 will be attending a workshop studying the Adrinka symbol art of Owusu-Ankomah. To say 'good morning' say 'ma-achay' (maakye) and to say 'good afternoon' say 'ma-aha' (maaha). Finally here is a short story from Ghana:

A cow was grazing in a field of grass. This field was near a pond which was full of frogs. When the frogs saw him some of them exclaimed, "This fellow is extremely big." Just as they said this, one of the frogs remarked, "I can blow myself up as big as this cow." No sooner had he said it, than he began to blow himself up, and he went on blowing until he burst.

Figure 17 – Pupil's work about healthy lunchboxes during a PHSE lesson in Peace School (2010)

Figure 18 – Example of a writing exercise using the school's chickens as the topic, from the "active learners" in Green School

Figure 19 – Example of a mathematics exercise using the pigs from the farm they visit regularly as the topic, from the "active learners" in Green School
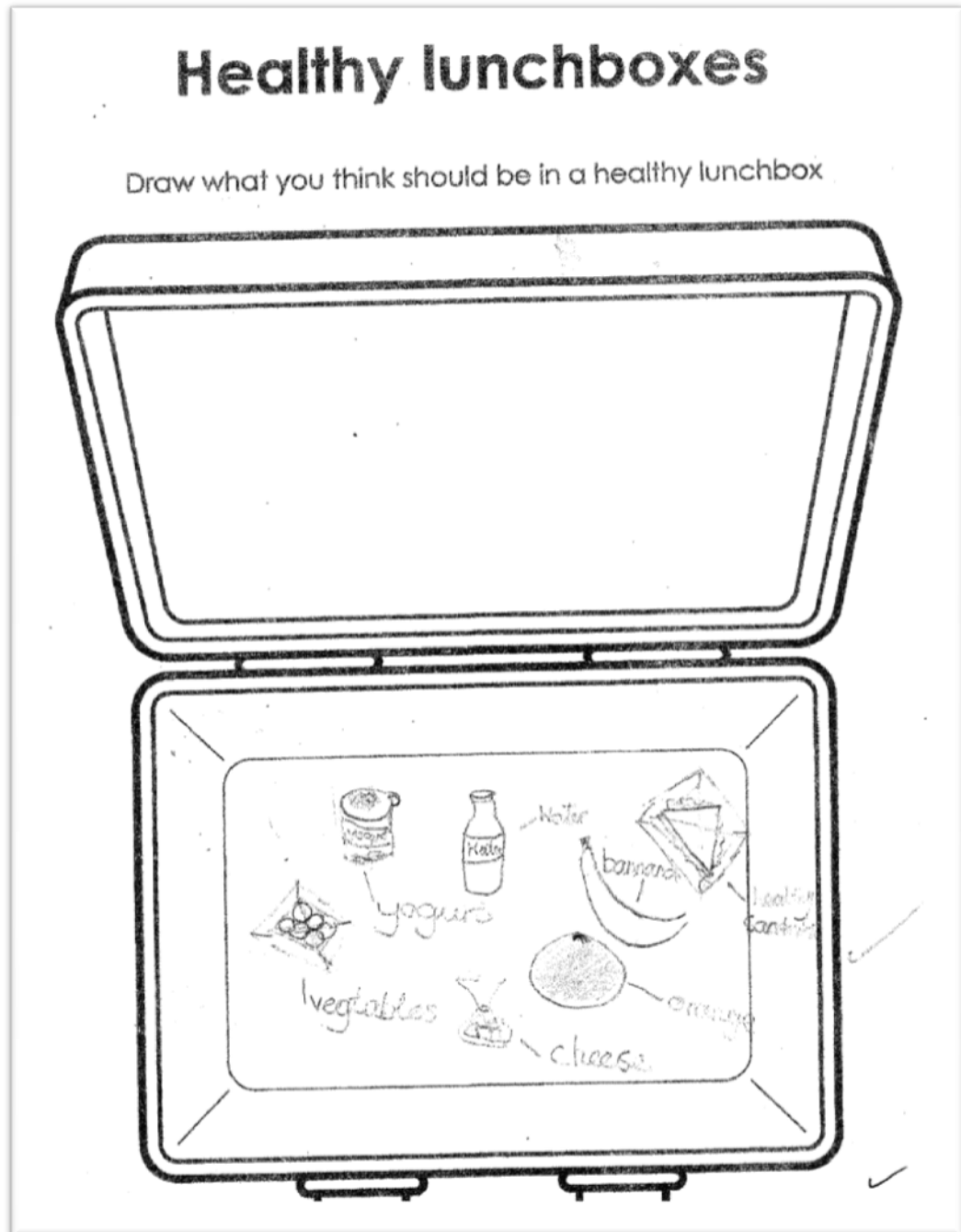
Figure 20 – Picture used during the sessions with the pupils to talk about ESD

Figure 21 – Picture used during the sessions with the pupils to talk about ESD
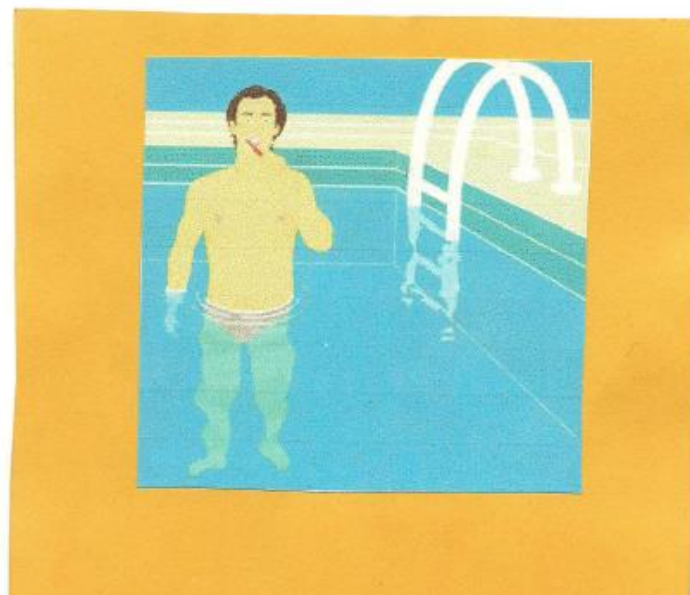
Figure 22 – Picture used during the sessions with the pupils to talk about ESD
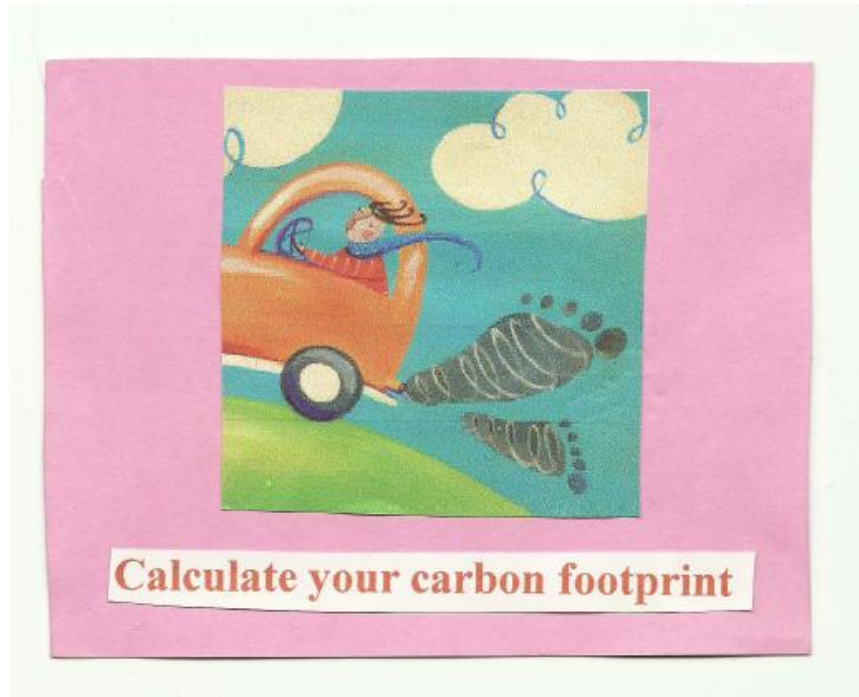
Figure 23 – Picture used during the sessions with the pupils to talk about ESD

Figure 24 – Picture used during the sessions with the pupils to talk about ESD

Figure 25 – Picture used during the sessions with the pupils to talk about ESD
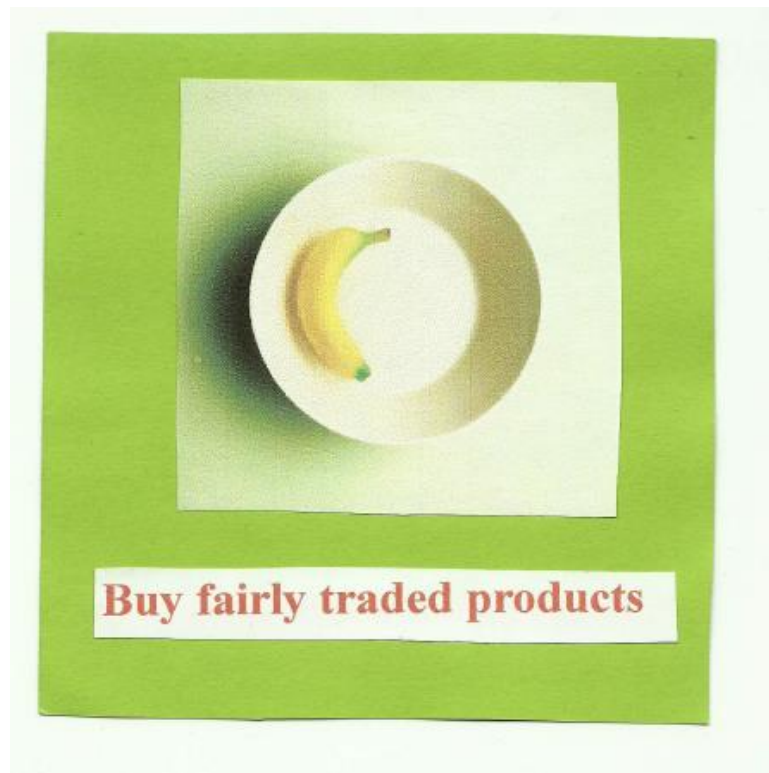
Figure 26 – Picture used during the sessions with the pupils to talk about ESD
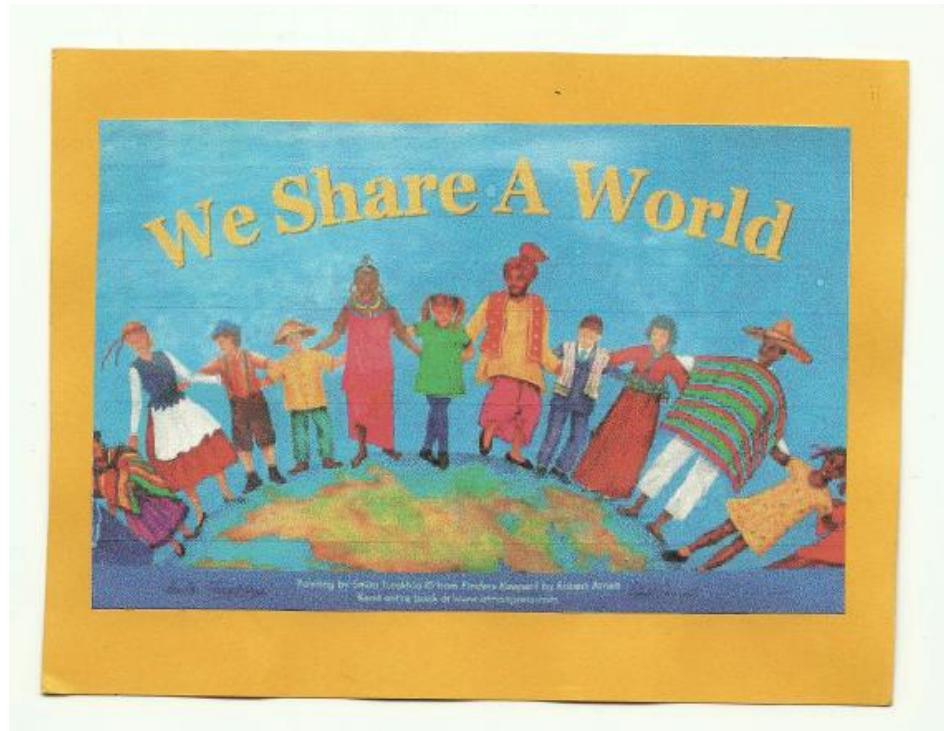
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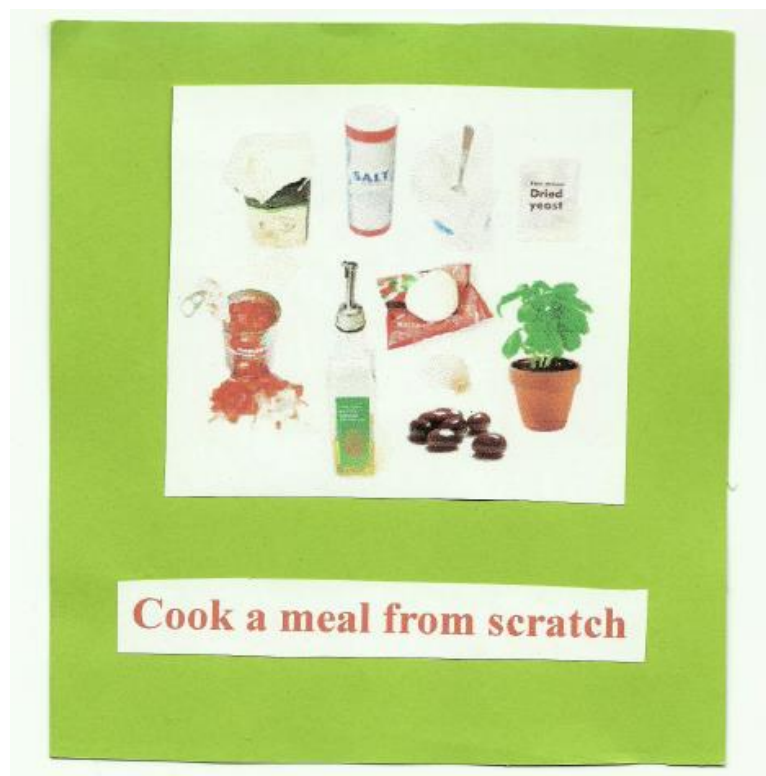
Figure 28 – Picture used during the sessions with the pupils to talk about ESD

Appendix 3 – Field diary guideline

Date: Time: Local:

Description	Reflection
Description of the agents (appearance, ways of talking, dress, moving, act)	Thoughts, reflections, feelings, speculations, ideas, problems, doubts, conflicts.
Description of the dialogues (words, gestures, facial expressions)	
Description of the physical space	
Description of the event	

Appendix 4 – Interviews guideline

a) Headteachers - Interview guideline

I)   Personal details

Tell a little bit about you and your work (since when are you in the school, jobs you had before…)

II)   Relation to sustainability

Meanings of sustainability

2.1 - What does sustainability means for you?

2.2 – Is sustainability an important issue for your life outside the school? Why? If yes, when did it start to became important and how?

2.3 – Your vision of a sustainable school: main difficulties and main rewards

2.4 – What do you think that can be done in order to have more schools involved with education for sustainability?

Education for Sustainable Development and Environmental Education

2.5 - Do you think sustainable education and environmental education is an important issue for your school?

    2.5.1 - Why?

    2.5.2 - When did it start to be tackled in the school?

    2.5.3 - How many hours and what kind of activities do you have in the school related to sustainability?

    2.5.4 - Do you think those are enough? Would you prefer to have more or less activities?

    2.5.5 – Do you think that activities related to learning for sustainability have any impact on the pupil's perceptions and attitudes? Why?

    2.5.6 – In your opinion, what are the main incentives and barriers to the implementation of sustainable education in schools?

Sustainable Schools Strategy

2.6 - Are you familiar with the sustainable schools initiative?

2.6.1 - (if applicable) How are the 8 doorways approached and developed in the school life (meals, transport, etc)?

2.6.2 – Is there any measurement of the performance of the school in relation to sustainability?

2.6.3 - If yes, is it internal or external? What are the main achievements so far?

2.6.4 – Did you have any support from local authorities or volunteer organisation to implement those measures in the school? Did you ever ask for it?

2.6.5 – Did the sustainable schools initiative have any impact in your school? What do you think that will happen now with the change of the government?

III)   Description of the school

3.1 – Description of the area where the school is located

3.2 – How many pupils are enrolled in the school? How many classes do you have in the school? How many pupils per class? Number of pupils entitled for free school meals? What is the percentage of pupils from minority ethnic groups? What is the number of pupils that use English as a second language?

b) Teachers - Interview guideline

I)   Personal details

Tell a little bit about you and your work (since when are you in the school, jobs you had before…)

II)   Skills and training

2.1 – What is the subject that you teach? How many hours per week?

2.2 – How many pupils do you have in you class and what is the range of ages?

III)   Relation to sustainability

Meanings of sustainability

3.1 - What does sustainability means for you?

3.2 – Is sustainability an important issue for your life outside the school? Why? If yes, when did it start to became important and how?

Education for Sustainable Development and Environmental Education

3.3 - Do you think sustainable education and environmental education is an important issue for your school?

3.3.1 - Why?

3.3.2 - How many hours and what kind of activities do you have in the school related to sustainability?

3.3.3 - Do you think those are enough? Would you prefer to have more or less activities?

3.3.4 – Did you have any training related with education for sustainability? If yes, inside or outside the school?

3.3.5 – Do you think that activities related with learning for sustainability have any impact on the pupil's perceptions and attitudes? Why?

3.3.6 – What are the main incentives and barriers to the implementation of sustainable education in schools?

Sustainable Schools Strategy

3.4 - Are you familiar with the sustainable schools initiative?

3.4.1 - (if applicable) How are the 8 doorways approached and developed in the school life (meals, transport, etc)?

3.4.2 – Is there any measurement of the performance of the school in relation to sustainability?

3.4.3 - If yes, is it internal or external? What are the main achievements so far?

c) Parents – Interview guideline

I)   Relation to the school

1.1 – Why did you choose this school? What is your opinion about the school?

1.2 – (if applicable) Did the fact of the school being concerned with the issue of sustainability had any influence in choosing it?

II)   Relation to sustainability

2.1 – Are you familiar with the concept of sustainability? What does it mean for you?

2.2 – Do you consider it important for you? Why?

2.3 – Do you do any of these actions like: recycling, cycling or walking to the work, turn the lights and electronic equipment off when you are not using them? How often?

2.4 – Do you think that your child is learning in the school aspects such as how to save energy, the importance of protecting the planet, etc?

2.5 – Do you ever talk to your child about such aspects or involve him/her with them?

2.6 – Do you think that the school (or schools in general) should give more attention and spend more time teaching about sustainability? Why?

2.7 - Do you think that your child have any initiative related with these issues at home or with friends?

<u>d) Questions to children – Group interview</u>

Please choose three pictures from the pile and tell us whatever you want about them. If you don't want to talk about a particular picture, feel free to change with your friend or talk about the other two if you want.

1 – What do you like about your school? What do you dislike or would like to change?

2 – What is your favourite subject? What is your favourite activity in the school?

3 – Describe your school in one word or sentence

4 – Do you think that your school is different from other schools? Why?

6 – Are you familiar with words such as recycling, renewable energy and water conservation, biodiversity, ethnicity, climate change?

7 – What about outside the school? Do you still do some of the activities you learned here, like recycling, turn the lights off, etc.?

9 – Have you heard the word sustainability before? What do you think it means?

Appendix 5 – Questionnaires

English version

Section 1: Description of the school

1. What is the name of your school?

2. What is your role in the school?

3. What is the nearest town?

4. What is the first part of the post code of the school address (e.g "M11")?

5. Which of the following best describes the geographical location of the school?
Rural
Suburban
Urban
Inner City

6. When was the school built?
6.a. Please describe briefly any structural changes to the school since its construction (e.g. extensions, new buildings, new windows with double glazing, etc.)

7. How would you rate the condition and environment of the school?
7.a. Exterior walls insulation
Excellent
Good
Fair
Poor
7.b. Roof and windows insulation
Excellent

Good
Fair
Poor
7.c. Interior rooms lighting
Excellent
Good
Fair
Poor
7.d. Toilets
Excellent
Good
Fair
Poor
7.e. Classroom equipment
Excellent
Good
Fair
Poor
7.f. Green areas
Excellent
Good
Fair
Poor
7.g. Playground
Excellent
Good
Fair
Poor
7.h. Green construction materials
Excellent
Good
Fair
Poor
7.i. Ecological design attributes
Excellent
Good

Fair
Poor
7.j. The overall 'greenness'
Excellent
Good
Fair
Poor

8. Does your school have:
Solar panels
Wind turbines
Installed roof and wall insulation
Water saving system
Rainwater storage system
Double glazing
Energy efficient lighting
Secure bike storage
Recycling bins
Compost bins
Raised-bed gardens
Vegetable plots
Wildlife area
Farm animals
None of the above

Section 2: Organisation of the School

9. How many pupils are enrolled in the school?

10. What percentage of pupils is entitled to free school meals?

11. In your estimation, what is the typical family income of pupils in your school?
Up to £20,000
Between £20,000-£30,000

Over £30,000

12. In your estimation, what is the percentage of pupils from ethnic groups?
12.a. White British
Less than 1%
Between 1% and 5%
Between 5% and 10%
Between 10% and 20%
More than 20%
12.b. Irish
Less than 1%
Between 1% and 5%
Between 5% and 10%
Between 10% and 20%
More than 20%
12.c. Polish
Less than 1%
Between 1% and 5%
Between 5% and 10%
Between 10% and 20%
More than 20%
12.d. Other European
Less than 1%
Between 1% and 5%
Between 5% and 10%
Between 10% and 20%
More than 20%
12.e. Gypsy/Traveller
Less than 1%
Between 1% and 5%
Between 5% and 10%
Between 10% and 20%
More than 20%
12.f. Asian or Asian British
Less than 1%
Between 1% and 5%

Between 5% and 10%
Between 10% and 20%
More than 20%
12.g. African or African British
Less than 1%
Between 1% and 5%
Between 5% and 10%
Between 10% and 20%
More than 20%
12.h. Caribbean or Caribbean British
Less than 1%
Between 1% and 5%
Between 5% and 10%
Between 10% and 20%
More than 20%
12.i. Arab or Arab British
Less than 1%
Between 1% and 5%
Between 5% and 10%
Between 10% and 20%
More than 20%
12.j. Other
Less than 1%
Between 1% and 5%
Between 5% and 10%
Between 10% and 20%
More than 20%

13. Please describe "other"

Section 3: Sustainability

14. How familiar are you with the concept of sustainability?
Very familiar
Pretty familiar
Not too familiar

14.a. Please write down what sustainability means for you

Section 4: Sustainability

15. Please indicate what your three main sources of information about sustainability and environmental issues are:
15.a. 1 ... -- Sources of information
Newspapers
Academic journals
Television
Films and documentaries
Relatives/friends/colleagues/school visitors
Books
The Internet
Events (conferences, fairs, etc.)
Courses and/or in-service days
Other

16. If other please specify

17. When you personally think about sustainability which of the following do you consider the three most important issues?
17.a. 1 ... – Issues
Biodiversity
Protection of the natural environment
Landscape
Climate change
Renewable energy
Recycling
Quality of life
Inclusion
Globalisation
Poverty
Global inequalities
Other

18. If other please specify

Section 5: Sustainability in Schools

19. In general how well informed about sustainability do you feel your school community is?

Very well informed

Fairly well informed

Not all that well informed

Poorly informed

20. Schools in general should play a greater role in instilling good habits and practices concerning the protection of the planet.

Totally agree

Tend to agree

Tend to disagree

Totally disagree

20.a. Please explain why

21. In your opinion, what are the benefits for children of learning about sustainability in school?

22. In your opinion, what are the three main barriers to the implementation of more environmental activities in schools?

22.a. 1 ... – Barriers

Lack of financial resources for projects

Unconducive school building and playground

Shortage of time to do more activities

Lack of availability of staff to be involved in projects

Lack of motivation of the staff

Lack of knowledge about the topic and resources available

Lack of support from Local Authorities

Other

23. If other, please specify

24. Please explain your choices (on question 22) briefly

25. Considering your programmes of study, how often in lesson time, does your school teach issues such as recycling, saving energy, the importance of preserving natural resources, etc.?
Very often
Often
Rarely
Never

26. Could you please estimate how many hours your school spent teaching about issues related with sustainability (e.g. saving energy, recycling, waste, consumption habits, inclusion, etc.) in the last 3 months per class?
None
Less than 1 hour per week
Between 1 hour and 3 hours per week
More than 3 hours per week
Not certain
26.a. Do you think those hours are enough?
Yes
No

27. Has your school done any of the following during the last term for environmental reasons?
Reduced the consumption of disposable items (e.g. plastic bags, certain kinds of packaging, etc.)?
Separated most of your waste for recycling?
Cut down your water consumption
Cut down your energy consumption
Bought environmentally friendly products marked with an environmental label
Chosen locally sourced products
None of the above

28. In your opinion, what are the three main environmental/societal issues that schools should teach about?
28.a. 1 ...
Climate change

Natural disasters
Loss of biodiversity
Depletion of natural resources
Man-made disasters
Pollution
Our consumption habits
Growing amounts of waste
Poverty
Global inequalities
Other

29. If other, please specify

30. Does your school monitor the use of:
Electricity
Water
Gas
Paper
Modes of transport to/from school
Waste or food waste
Recycling material
None of the above
30.a. If yes, who does it and how often?
30.a.i. Is that information made available to the whole school?
Yes
No
30.a.ii. How?

31. Generally speaking, which of the following best describes the provision of cooked meals in your school?
We don't provide cooked meals
The Local Authority or other agency delivers pre-prepared meals
We source our ingredients and prepare meals in our kitchen

32. Does your school explain to pupils and parents the importance of healthy lunchboxes?
Yes
No

32.a. How often and how?

33. In a typical school year, how often do classes in your school use the outdoor space to teach? (excluding sport and PE)
Once a week or more
Once a month
Once per term
Once a year
Not certain
Not at all

34. Does your school have any of these clubs/teams for the pupils?
Cooking Club
Gardening Club
Energy Team
Recycling Team
Eco School Council
Litter Pick Team
Peace Club
Road Safety Team
None of the above

35. Does your school have any of these awards?
Eco Schools 'Green Flag'
Silver Eco Schools Award
Bronze Eco Schools Award
Inclusion Award
Healthy Schools
Investors in People Award
Study Support Award
International Schools Award
None of the above

36. Does your school have any further plans to implement more activities related with environmental education and education for sustainable development?
Yes

No

36.a. If yes, please give some examples of activities your school is planning to do

36.b. If no, please indicate the main reasons why not

Section 6: Sustainable Schools Strategy

37. Are you familiar with the Sustainable Schools Strategy?
Yes
No

Section 7: Sustainable Schools Strategy (1)

38. The Sustainable Schools Strategy focuses on 8 'doorways'; is your school developing any of these areas?
Yes
No
38.a. If yes, which one(s)
Food and Drink
Energy and Water
Travel and Traffic
Purchasing and Waste
Buildings and Grounds
Inclusion and Participation
Local Well-being
Global Dimension

39. Please give examples of some of the initiatives that your school is undertaking (please identify the relevant doorway) If none, please write 'none'

40. How do you see the future of the strategy?

Portuguese version

1. Qual é o nome da sua escola?

2. Qual é a sua função na escola?

3. Qual é a cidade mais próxima da escola?

4. Por favor indique os quatro primeiros números do código postal da escola

5. Qual das seguintes opções descreve melhor a localização geográfica da escola?

Rural

Sub-urbana

Urbana

Centro da cidade

6. Em que ano é que a escola foi construida?

6.a. Por favor descreva resumidamente as mudanças estruturais de maior relevância desde que a escola foi construida (ex. extensões, novos edifícios, janelas com vidros duplos, etc.)

7. Como avalia as condições e o ambiente da escola em relação aos seguintes aspectos?

7.a. Isolamento das paredes exteriores

Excelente

Bom

Razoável

Medíocre

7.b. Isolamento do telhado e das janelas

Excelente

Bom

Razoavel
Mediocre
7.c. Iluminação interior
Excelente
Bom
Razovel
Mediocre
7.d. Casas de banho
Excelente
Bom
Razoavel
Mediocre
7.e. Equipamento das salas de aula
Excelente
Bom
Razoavel
Mediocre
7.f. Àreas verdes
Excelente
Bom
Razoavel
Mediocre
7.g. Àreas de lazer
Excelente
Bom
Razoavel
Mediocre
7.h. Materiais de construção ecológicos
Excelente
Bom
Razoavel
Mediocre

8. Por favor indique se a escola tem:
Painéis solares
Turbinas eólicas

Sistema de isolamento
Sistema de poupança de água
Sistema para recuperação de água da chuva
Vidros duplos
Sistema de iluminação eficiente
Local seguro para bicicletas
Caixotes para reciclagem
Recipientes para compostagem
Canteiros com flores
Hortas
Animais
Nenhuma das opções acima

Secção 2: Organização da Escola

9. Quantos alunos estão inscritos na escola?

10. Na sua opinião, qual é o rendimento familiar mensal típico dos alunos da escola?
Igual ou menor a 500€
Entre 500€ e 1000€
Igual ou superior a 1000€

11. Segundo a sua estimativa, qual é a percentagem de alunos pertencentes aos seguintes grupos étnicos?
11.a. Angolanos
Menos de 1%
Entre 1% e 5%
Entre 5% e 10%
Entre 10% e 20%
Mais de 20%
11.b. Brasileiros
Menos de 1%
Entre 1% e 5%
Entre 5% e 10%
Entre 10% e 20%
Mais de 20%

11.c. Cabo Verdianos
Menos de 1%
Entre 1% e 5%
Entre 5% e 10%
Entre 10% e 20%
More than 20%
11.d. Ciganos
Menos 1%
Entre 1% e 5%
Entre 5% e 10%
Entre 10% e 20%
Mais de 20%
11.e. Chineses
Menos de 1%
Entre 1% e 5%
Entre 5% e 10%
Entre 10% e 20%
Mais de 20%
11.f. Guineenses
Menos de 1%
Entre 1% e 5%
Entre 5% e 10%
Entre 10% e 20%
Mais de 20%
11.g. Indianos
Menos de 1%
Entre 1% e 5%
Entre 5% e 10%
Entre 10% e 20%
Mais de 20%
11.h. Moçambicanos
Menos de 1%
Entre 1% e 5%
Entre 5% e 10%
Entre 10% e 20%
Mais de 20%

11.i. Ucranianos/Romenos/Moldavos
Menos de 1%
Entre 1% e 5%
Entre 5% e 10%
Entre 10% e 20%
Mais de 20%
11.j. Outro
Menos de 1%
Entre 1% e 5%
Entre 5% e 10%
Entre 10% e 20%
Mais de 20%

12. Por favor especifique 'outro'

Secção 3: Sustentabilidade

13. Quão familiar é para si o conceito de sustentabilidade?
Muito familiar
Relativamente familiar
Pouco familiar
13.a. Por favor descreva o que o conceito de sustentabilidade significa para si

Secção 4: Sustentabilidade (Cont.)

14. Por favor indique quais são as suas três principais fontes de informação sobre sustentabilidade e questões ambientais.
14.a. 1 ... -- Sources of information
Jornais
Revistas cientificas
Televisao
Filmes e documentarios
Familiares/amigos/colegas/convidados da escola
Livros
Internet
Eventos (conferencias, feiras, etc.)

Cursos e/ou formacao durante o trabalho
Outro

15. Por favor especifique 'outro'

16. Quando reflecte acerca do conceito de sustentabilidade, quais dos seguintes aspectos considera os três mais importantes?
16.a. 1 ... – Aspectos
Biodiversidade
Proteccao do ambiente
Paisagens naturais
Alteracoes climaticas
Energia renovavel
Reciclagem
Qualidade de vida
Inclusao
Globalizacao
Pobreza
Desigualdades globais
Outro

17. Por favor especifique 'outro'

Secção 5: Sustentabilidade nas Escolas

18. Em geral, quão bem informada a sua escola está sobre o conceito de sustentabilidade?
Muito bem informada
Bem informada
Razoávelmente informada
Mal informada

19. As escolas em geral, deviam ter um papel mais activo na promoção de hábitos e boas práticas para a protecção do meio ambiente
Concordo inteiramente
Tendo a concordar
Tendo a discordar
Discordo inteiramente

19.a. Por favor explique porquê

20. Na sua opinião, quais são (se alguns) os benefícios para os alunos de aprenderem mais sobre o conceito de sustentabilidade nas escolas?

21. Na sua opinião, quais são os três principais obstáculos à implementação de mais actividades relacionadas com o meio ambiente nas escolas?
21.a. 1 ... – **Obstáculos**
Falta de recursos financeiros para os projectos
Edificio escolar e espaco exterior
Falta de tempo para ter mais actividades
Falta de disponibilidade dos professores
Falta de motivacao dos professors e comunidade em geral
Falta de conhecimento sobre o assunto e recursos disponiveis
Falta de suporte das Autoridades Locais
Outro

22. Por favor especifique 'outro'

23. Por favor explique resumidamente as suas escolhas na questão 21

24. Considerando o programa de estudos, com que frequência a vossa escola ensina sobre tópicos como: reciclagem, poupança de energia, a importância da preservação dos recursos naturais, etc.?
Frequentemente
Ocasionalmente
Raramente
Nunca

25. Na sua estimativa, quantas horas a vossa escola despendeu ensinando tópicos relacionados com a 'sustentabilidade' (ex. poupança de energia, reciclagem, lixo, hábitos de consumo, inclusão, etc.) nos últimos três meses?
Nenhuma
Menos de 1 hora por semana
Entre 1 hora e 3 horas por semana
Mais de 3 horas por semana

Não sabe ao certo

25.a. Na sua opinião, essas horas são suficientes?
Sim
Não

26. Considerando a lista abaixo, por favor indique se a vossa escola, por razões ambientais, fez alguma das iniciativas referidas durante o ano lectivo anterior.
Redução do consumo de productos descartáveis (ex. sacos de plástico, certos tipos de embalagens, etc.)
Separação da maior parte do lixo para reciclagem
Redução do consumo de água
Redução do consumo de energia
Compra de produtos 'amigos do ambiente'
Escolha de produtos locais
Nenhuma das opções acima

27. Na sua opinião, quais são os três principais problemas ambientais/societais que as escolas deviam ensinar mais sobre?
27.a. 1 ...
Alteracoes climaticas
Desastres naturais
Perda de biodiversidade
Esgotamento dos recursos naturais
Desastres provocados pelo Homem
Poluicao
Habitos de consumo
Acumulacao crescent de lixo
Pobreza
Desigualdades globais
Outro

28. Por favor especifique 'outro'

29. A vossa escola monitoriza o consumo de:
Electricidade
Àgua
Gás

Papel
Modos of transporte para a escola
Lixo
Material reciclavel
Nenhuma das opções acima
29.a. Se sim, quem o faz e com que frequência?
29.a.i. Is that information made available to the whole school?
Sim
Não
29.a.ii. De que forma?

30. Qual das seguintes opções melhor descreve o fornecimento de refeições na vossa escola?
Não servimos refeições
A Autoridade Local ou outra organização fornece as refeições pré-preparadas
Compramos e preparamos os ingredientes na nossa cozinha

31. A vossa escola explica aos alunos e encarregados de educação a importância de uma alimentação equilibrada e a importância de trazer para a escola alimentos saudáveis?
Sim
Não
31.a. Com que frequência e de que forma o faz?

32. Com que frequência o espaço exterior é utilizado?
Uma vez por semana
Uma vez por mês
Uma vez por período
Uma vez por ano
Não sabe ao certo

33. A vossa escola tem algum destes clubes para os alunos?
Clube de culinária
Clube de Jardinagem
Clube de energia
Clube de reciclagem
Eco-escola
Nenuma das opções acima

34. A vossa escola tem futuros planos para desenvolver mais actividades relacionadas com a educação ambiental e a educação para o desenvolvimento sustentável?
Sim
Não
34.a. Se sim, por favor indique alguns exemplos de iniciativas que a vossa escola planeia fazer
34.b. Se não, por favor indique as principais razões para não o fazer