Title of thesis

"Educating children to educate their families- Information, knowledge and experience diffusion within the family for sustainable lifestyles"

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The candidate confirms that the work submitted is his own and that appropriate credit has been given where reference has been made to the work of others.

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List of acronyms

NFSS	National Framework for Sustainable Schools
EE	Environmental Education
ESD	Education for Sustainable Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
IUCN	International Union for Conservation of Nature
DfES	Department for Education and Skills
UNEP	United Nations Environment Programme
WWF	World Wide Fund for Nature
DETR	Department of the Environment, Transport and the Regions
DESD	Decade in Education for Sustainable Development
NAEE	National Association of Environmental Education
NCC	National Curriculum Council
DCSF	Department for Children, Schools and Families
Ofsted	Office for Standards in Education
FEE	Foundation for Environmental Education
UNCRC	United Nations Convention on the Rights of the Child
IMD	Index of Multiple Deprivation
LSOA	Lower Super Output Area
PE	Physical Education
BTCV	British Trust for Conservation Volunteers

Abstract

This research study focuses on children's influence on parents' pro-environmental behaviour, motivated by a long-term environmental education programme. This locus of interest has been approached from four different views (experts, teachers, parents and children), applying innovative methods for data collection and analysis. This study is framed by the literature on environmental education and education for sustainable development, as well as by the literature related to children's influence on parents' pro-environmental behaviour. Moreover, this framework is also complemented by the literature on children's role in family decision-making process and influence on parents in general.

This study makes methodological, theoretical and empirical contributions. More specifically, the methodological novelties lie in the use of innovative data collection methods and a differentiated approach of the topic which constitutes the methodology of the research. The theoretical contribution of this study regards the development of the 'Children's confidence-influence model' that explains an ongoing feedback process based on the impact of children's confidence in their knowledge and ability to influence, on their parents' perceptions of their children's influence.

The empirical originality of this study lies in the fact that it is the first to address the topic of inter-generational influence in the context of education for sustainable development as a central focus. Moreover, this research study presents a classification of children's influence on their parents' pro-environmental behaviour based on parents' own perceptions of their children's influence.

Chapter 1 – Introduction

Every child has been told what to do, how to behave and sometimes what to believe or what to dream of. Parents, older siblings, teachers, trainers and so on, have guided children's lives in a specific direction. Children are sometimes subject to great pressure to be good kids, good students, good athletes and good friends. They follow advice, suggestions and instructions; and sometimes they end up undertaking a rather passive role in society. Over the past decades, drastic changes in family synthesis and operation have taken place, affecting the role of children within the family and its 'power' in decision making approaches. A sign of changes within the family is the newly horizontal relationships within the family, giving children more 'space' and more decision-making responsibilities, allowing them to decide more autonomously (Clulow, 1993). Hence, the role of children is now more active, being able to input to decisions about family issues, and their opinions are now actively sought and respected by their parents (Cooper, 1999). Children's ability to influence their parents has changed substantially over the last decades, for example, children's influence on parents' spending (Hunter, 2002). Children have been given more space to act and play their part within the home environment (Clulow, 1993), not only because of the changes in family structure (Flurry, 2007) but the education that children receive.

According to the parents who participated in this research, one of those changes is the inclusion of the environment and sustainability in the curriculum, which gives children an advantage over their parents, in terms of environmental knowledge. The key question in this research is whether education on sustainable development can also enhance children's potential to influence parents' pro-environmental behaviour. This research study represents an evaluation of the potential for the National Framework for Sustainable Schools (NFSS) in the UK to motivate children to transfer home the environmental knowledge gained at school, to instigate environmental discussions with their parents and finally, to persuade their parents to adopt more sustainable lifestyles.

1.1 The study

The study took place in two primary schools in the Yorkshire area. These schools were chosen as case studies based on their environmental performance (best cases) and on the demographics of the area they were in. Although the environmental performance of both schools was similar, one school was located in a low income area and the other in a more affluent area. The environmental performance of the schools was assessed according to the National Framework for Sustainable Schools which the government launched in 2006. The criteria were the number of doorways of sustainability they had focused on (at least three),

how well embedded sustainability was in their ethos and the level of engagement. Their environmental performance and especially the last two criteria were set and assessed by the environmental committee of Leeds Education. The aim of this initiative was to have every school in the UK sustainable by 2020.

This study focuses on children's influence on parents' pro-environmental behaviour, in association with a long-term environmental education programme (NFSS). This locus of interest has been approached from four different perspectives (experts, teachers, parents and children), applying innovative methods for data collection and analysis. This research study is framed by the literature on environmental education and education for sustainable development, as well as by the literature related to children's influence on parents' pro-environmental behaviour. Moreover, this framework is also complemented by the literature on children's role in family decision-making process and influence on parents in general. Theoretically, this study is supported by the intergenerational learning theory which explains an ongoing learning process from children's and parents' perspectives.

The data collection methods that were used in this study were interviews with experts, teachers and parents and questionnaires and focus groups with students. Moreover, data were collected through my participant observation in the classrooms and in general within the school environment. The collection of data from four different sources and through four different methods provided the opportunity to triangulate the data and infer as reliable conclusions as possible. In general, the questions of all the participants revolved around the capacity of an environmental education programme to encourage children to influence their parents' pro-environmental behaviour, the factors that facilitated or constrained this process and the environmental aspects that were most preferred to focus on (e.g. waste management, energy and water saving).

1.1.1 The contribution of the study

This study makes methodological, theoretical and empirical contributions. More specifically, the methodological novelties lie in the use of innovative data collection methods and a differentiated approach to the topic which constitutes the methodology of the research. The innovative methods relate to the data collection from focus groups with children through a voting process where the children themselves had to evaluate, rank and vote for their questions to be included in parents' interview protocol. Moreover, children participated in a task in order to point out and evaluate the activities on which they felt they influenced their parents the most.

As such the innovative approach of the methodology of this research offers the following contributions:

1. The extensive triangulation of the information, from four different sources and through four different data collection methods.

2. Children's participation in research design by writing the questions that their parents would be asked.

3. Comparison of children's and parents' perceptions of children's influence on parents' pro-environmental behaviour.

4. Children's participation in data analysis by explaining the areas of their influence and the possible reasons why their parents did not follow their suggestions for more sustainable lifestyles.

The theoretical contribution of this study regards the 'Children's confidence – influence model'. This model explains the ongoing feedback process based on children's confidence in their knowledge about the environment and their ability to influence their parents' pro-environmental behaviour. This is a feedback process because children's confidence is affected by parents' perceptions of children's knowledge and ability to influence them. This model can be also applied in cases where constructive feedback is needed to improve people's performance. Moreover, another element of the theoretical contribution of this study lies in the inclusion of the topic of inter-generational learning as a way to explain and promote sustainable behaviour. This is something that has not been considered in depth in the literature. Only a handful of sources exist that consider this issue.

The empirical originality of this study lies in the fact that it is the first to address the topic of inter-generational influence in the context of education for sustainable development as a central focus. Previous research has only dealt with this topic as a part of a larger set of questions about environmental education. Another element that highlights the originality of this study is the fact that it studied a long-term environmental education programme unlike other studies. This fact ensures an ongoing and consistent transfer of environmental information and knowledge and application of sustainability across the curriculum, which helps students understand that sustainability is a high-profile message, well-embedded in their school's ethos.

In effect, a long-term environmental education programme helps students normalise sustainable behaviours and understand that sustainability is integral part of the school values and culture, and not just a fad. Another element that highlights the contribution of this study is that fact that it provides rich information about the negotiations that take place at home. According to Larsson et al. (2010) this is something that the previous studies have not done.

This research, for the first time, offers classifications for both children's influence on their parents' pro-environmental behaviour and parents' own perceptions of their children's influence on their pro-environmental behaviour; addressing the primary aim of this research. Regarding the classification of children's influence on their parents' pro-environmental behaviour, this is also the first time parents' perceptions are classified into categories, answering also the main research question about children's influence. This categorisation offers a more detailed and rich answer to this question instead of a 'yes or no' answer. Moreover, it can help the development of the National Framework for sustainable schools in terms of how parents should be approached in order to enhance schools' and children's effort to communicate the message of sustainability.

1.2 Research Questions and Objectives.

The research questions that this project aims to answer are:

1. *'How does environmental education at school encourage children to influence their parents in terms of sustainable lifestyles?'*

2. *'What everyday parental activities are influenced by children's' education and why are those specific activities affected?'*

3. *'What are the factors that help or hinder students' influence on parents?'*

4. *'How effective is the National Framework for Sustainable Schools in fostering inter-generational influence within the family?'*

These questions are explored in detail in chapters four (Analysis of the first case study), five (Analysis of the second case study) and six (Discussion). Specifically, chapter six presents the summary of the research process and findings and the 'Children's confidence – influence model' and a classification of parents in terms of their perception of children's influence on their pro-environmental behaviour. These three themes of chapter six answer the main research question. Regarding the factors that help or hinder students' influence on parents, a part of the results can be found in chapters four and five as well as the discussion chapter six where the students' confidence model is presented. In brief, this model describes an ongoing feedback process or loop which affects children's confidence in their knowledge and ability to influence their parents: the more confident they feel the more influence their parents report, and the more influenced the parents feel, the more confident the children get.

Hence, a by-product of this research study is to explore whether the National Framework for Sustainable Schools has an indirect impact on parents' sustainable lifestyles through the mediating influence of their children. In addition, through the data collection methods of

interviews and focus groups the children and parents disclosed influential factors or group of factors such as family income, parental education level, homework activities, and working hours for example.

1.2.1 Key findings

In summary, regarding children's influence on their parents' pro-environmental behaviour the result was found to be neither a clear yes or no. The answer varies according to parents' perceptions which resulted in the categorisation of their perceptions. Overall however, the results show there is a positive influence, but the extent, motives and factors that affect it vary.

Regarding the factors that facilitate or constrain children's influence; I found that children's confidence in their knowledge and ability to influence their parents, and the on-going feedback loop described above, indeed plays an important part. However, it was also found that children's influence can have limited impact on parents' behaviour. It was found that this can occur because of parents' strong preferences for specific non-environmentally friendly products (e.g. bio-products, locally produced goods), which lock in their parents' behaviour and limit their alternatives. Another constraining factor was structural issues in society which result in parents having the 'drop-in-the-ocean' feeling, where it is felt that their effort is too small to make a great difference, and where 'going green' is not widely supported by the local community or part of its ethos.

Regarding everyday environmental activities, the majority of parents reported activities relating to energy and water saving, waste management (recycling) and use of public means of transport. However, their motives were not necessarily environmental but also financial. This is linked with one of the key findings which regards the role of families' socio-economic background in their decision to improve their pro-environmental behaviour. In effect, most of the participating families, regardless of their socio-economic background, were financially motivated in order to save energy and water, aiming at saving money through the utility bills.

Finally, concerning the effectiveness of the environmental education to promote pro-environmental behaviours at home through children, the research finds that although it is effective, it depends on how well embedded sustainability is in the school's ethos and the ways in which the school tries to communicate the message of sustainability. Both children and parents were found to understand school's efforts to be sustainable and promote sustainability and how it tried to do so, indicating successful communication and programme implementation. However, there were isolated cases where children did not understand or realise the reasons for being taught or given information about sustainable development.

1.3 My motivation

I am passionate about the environment and sustainability. The stark impacts man has on the environment and its consequences, such as global warming, cause me great concern. It is through creating and cultivating this value in others that will alter human behaviour to one which strives to create a sustainable world, for generations.

This research aims in essence to identify and better understand the link or dynamic between environmental education at school, children's values of the environment and sustainability, children's impact on their parents' environmental values and thus behaviour. Considering the bigger picture therefore, it is suggested that creating this 'value' through education at grassroots level, individuals who will one day become parents, leaders, policy makers and so on, our future on Earth stands a far greater chance of survival: a future which protects natural environment on which we depend. This may seem an idealised point of view, but it is the result of my own experience and upbringing:

I was born in the early eighties and raised in Athens, Greece, a highly populated urban area with little green space.

My family consists of four members where both parents are now retired and the annual income of the family is below the average annual income per capita. My family respects the environment, we do not litter and we are people who love nature. However, while my parents set a healthy environmentally friendly example for me to follow, growing up, they were not fully aware of the significance of the ever-growing world environmental problems and the drastic solutions required. So, while limiting to an extent the impact and harm we as a family had on the environment, we were not environmentally active. Growing up in Athens, there was little infrastructure to support 'living green' such as recycling schemes. When the municipality introduced recycling bins to our neighbourhood in 2003 our family habits did not change easily in terms of separating out our waste. I decided to explain to my parents and brother how the concept of recycling works, the benefits with tangible examples and the costs at local and global level. The conversation did not have the results I was expecting. Their effort was not very great and they recycled only occasionally. Still, I started recycling on my own and corrected them when they disposed of items incorrectly. My family observed me separating and recycling the waste they had thrown away. After some weeks they started doing the same more systematically and now they do it as if it was an old habit. Then I realised that they had institutionalised this activity, having made it a habit, based mostly on the observation of the youngest member of the family. Now, even in areas where there is no infrastructure for recycling they drive for some kilometres in order to find the recycling bins. This is evidence of

the extent of influence I had on them, their commitment to and value of the environment and recycling.

In effect, they were motivated by me and my behaviour either directly or indirectly, changing to some extent their lifestyles regarding everyday household activities. My purpose has been to encourage them to expand this behaviour in more aspects of everyday life as citizens and as consumers. Of course my experience cannot be generalised, but it was a source of inspiration, curiosity and motivation with which I examined the influence of environmental education in school on students and then students' influence on their parents towards sustainable lifestyles.

1.4 The research in context

1.4.1 Sustainable Development

Sustainable development is a concept which arose because of a combination of environmental and socio-economic problems in global scale, related to poverty and inequality, in order to ensure a healthy environment for future generations (Hopwood, et al., 2005). The World Conservation Strategy in 1980 (IUCN, et al., 1980), was the document in which the first important mention of the term of sustainable development can be found. In 1987, Brundtland Report (WCED, 1987) was the first concerted effort to expresses a process that interweaves the aforementioned environmental and socio-economic issues. That process resulted in the definition of sustainable development as a way to meet "…the needs of the present without compromising the needs of future generations to meet their needs" (World Commission on Environment and Development, 1987, p. 43). Hopwood et al., 2005 highlighted the human aspect of the definition of sustainable development which agrees with the characterization as an "anthropogenic concept" (Lee, 2000, p.32). Hopwood et al. (2005) linked Lee's (2000) anthropogenic perspective of sustainable development with the dependency of people on the environment, which is expressed in Brundtland report (WCED, 1987), in order to meet their needs and well-being.

To this end, Brundtland report (WCED, 1987) recommends an alternative kind of growth which will take the environment and economics into consideration when it comes to decision making (Hopwood, et al., 2005), emphasising social justice, equal opportunities to access resources and benefits, and participation in decision-making processes (ibid). Based on that idea of equity, Haughton (1999) developed five principles to summarise the meaning of sustainable development. These principles are: (i) futurity, which means inter-generational equity, (ii) social justice which means intra-generational equity, (iii) transfrontier responsibility related to

the geographical equity, (iv) procedural equity, which ensures that people are treated fairly, and (v) interspecies equity stressing the importance of biodiversity (Haughton, 1999).

Jansen (2003) maintains that in order to achieve sustainable development, three kinds of approaches need to take place simultaneously and inextricably. These approaches are the optimisation, improvement and renewal, and they all require cultural, structural and technological interaction (ibid). Examples of these interactions can be found in this thesis, where participants mentioned structural and technological difficulties that stop them from improving their pro-environmental performance.

Apart from those approaches, Jansen (2003) elicited three interconnected principles from Brundtland report (WCED, 1987), which are the environmental efficiency, the inter- and intra-generational justice and the participation in decision-making. These principles in turn link with the aforementioned approaches and interactions. Moreover, Merbatu (1998) highlights the importance of satisfying the essential needs, giving priority to the needs of the poor and the limitations that the current technological knowledge and social structure impose, hindering the satisfaction of the aforementioned needs.

According to Merbatu (1998), Brundtland report (WCED, 1987) is the benchmark document after which concerted discussions about sustainable development started taking place, and it is that report that defines sustainable development the most accurately. The next important event was the UN Conference on Environment and Development (UNCED) (or "Earth Summit") which took place in Rio in 1992 and resulted in the production of Agenda 21 (Merbatu, 1998).

Over the years, the concept of sustainable development has been interpreted in many different ways, a fact that made O'Riordan (1989) to categorise the environmental views. This categorisations spans from the strong ecocentric to the strong technocentric views, but interwoven with socio-economic views (ibid). However, O'Riordan (1989) underlines that the econcentric views tend to relate with social and economic equity, while the technocentric views adhere to the economic and political status quo.

This section introduced briefly the concept of sustainable development, having presented its progress chronologically and presented different approaches. The following section analyses the concept of environmental education and education for sustainable development. For example, Jansen (2003) highlights the vital role of education in enhancing people's consciousness, knowledge and skills, human capacities that are very important for sustainable development, and he acknowledges that increasing integration of the concept of sustainable development in educational institutions.

The overarching concept of this study is 'sustainability', whose definition indicates three types of sustainability which interact with each other. These are the Social, Economic and Environmental Sustainability. Schematically, the definition is depicted by these three overlapping circles:
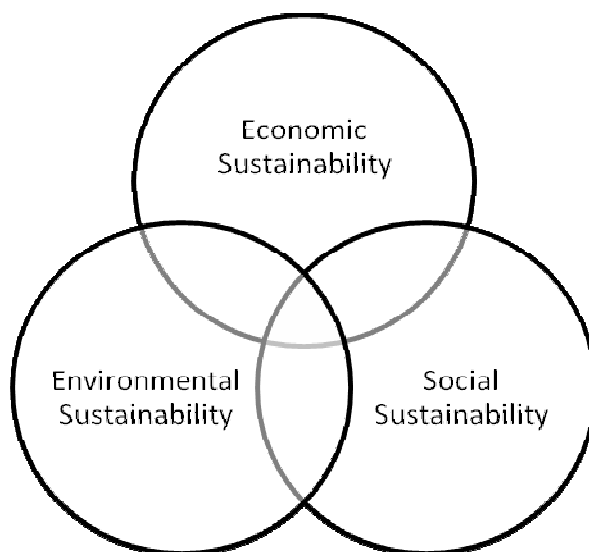
Figure 1.4.1.1 Sustainability Overlapping

In order to fully understand sustainability we need to first define these three sub-types of sustainability:

- Social Sustainability means maintaining social capital. Social capital is investments and services that create the basic framework for society and requires maintenance and replenishment by shared values and equal rights, and by community religious and cultural interactions" (Goodland, 2002, p. 2).

- "Economic sustainability is maintenance of capital, or keeping capital intact" (ibid, p. 2). It can also be defined by Hicks' definition of income which focuses more on the consumption aspect rather than on capital and states income is "...the amount one can consume during a period and still be as well off as the end of the period" (Hicks, 1946, p. 172). Environmental Sustainability "...seeks to improve human welfare by protecting the resources of raw materials used for human needs ensuring that the sinks for human wastes are not exceeded, in order to prevent harm to humans" (Goodland, 1995, p. 3). Another definition says that Environmental Sustainability is the "...maintenance of the natural capital" (Goodland, 1995, p. 10). Hence, environmental sustainability is a three-sided concept, which consists of: (i) the sink side for waste emissions, (ii) the source side with renewable and non-renewable sources and (iii) the operational side with the throughput of the human economic system, the

technological progress and efficiency and finally the optimal use of renewable resources (Goodland, 1995).

- Environmental Sustainability considers how people can be convinced to reduce the environmental impact of their lifestyle in order to maintain environmental sustainability. In essence, it is interesting to look at how this process can be effective through social learning, inter-generational communication and influence. Hence, this research study focuses on Environmental Sustainability, linking it with the field of Environmental Education and Education for Sustainable Development. The reason I chose to focus on Environmental Sustainability is the time limit imposed by the environmental harm caused by human kind, which leads to the "deterioration of the global life-support systems" (Goodland, 1995, p. 5). 'Life-support system' raises the issue of inter-generational sustainability, which is a matter of equity and justice between generations. The whole effort centres on the sustaining of this life-support system for the next generation. Children and parents have a clear interest in a sustainable environment for future generations (Balantyne, Fien & Packer, 2001a).

1.4.2 Literature on sustainability and education

In order to gain sufficient and well-rounded knowledge of the research subject areas, the following five areas of the literature have been focused upon. These are expanded upon within chapter two.

(i) The literature on children's influence on their parents' pro-environmental behaviour.

(ii) The transition from Environmental Education to Education for Sustainable Development,

(iii) Children's influence on parents.

(iv) Inter-generational Learning.

(v) Social Learning.

The areas of the literature that inspired the study are the literature on Education for Sustainable Development and more specifically the small literature on children's influence on parents' pro-environmental behaviour. This part of the literature is important because it helped identify gaps in the theory and methodology used in this area of environmental education. More specifically, this research is situated in the transition from Environmental Education to Education for Sustainable Development and the policy and strategy that the United Kingdom has adopted and launched in schools at a national level. The two main policies (National Framework for Sustainable Schools and that of Eco-Schools) are elaborated further in the literature review chapter and describes how they can complement each other. The

literature review also considers the most important studies on children's influence on their parents' pro-environmental behaviour. This section is structured in themes that emerge from the analysis of the literature and include the role of environmental education interventions, the inter-generational communication and information transfer with specific reference to children's influence on their parents' pro-environmental behaviour.

This is actually the main focus of this study. More specifically, the idea of 'creating' environmentally aware citizens now (adults) and in the future (when children become adults) 'using' children as the vehicle to sustainability. Moreover, I approach children's effort to influence their parents' pro-environmental behaviour as a learning process, where children learn about sustainability at school and they teach their parents at home. Therefore, this study fills the gap that UNESCO (2011) pointed out: that the learning experiences about sustainability take place outside the school environment or the formal education system are not well documented.

Another key part of the literature review that impacted on my research is the literature on children's influence on parents in general and describes how the role of children within the family environment has changed over the years. The impact of this area of the literature provides robust support of my argument about children's enhanced role with the family environment and their greater role as 'pro-environmental behaviour transmitters'.

1.5 Thesis structure

This thesis consists of seven chapters. Chapter two, the literature review, describes in detail the theoretical background and framework. Chapter three is the methodology where the research design is explained and the main research gaps that this study tries to fill in are addressed. Chapters four and five are the two findings chapters, where the two case studies are analysed. Chapter six is the discussion where the findings are organised into themes and new concepts and ideas that came up in this study are mentioned. The last chapter is the conclusion which brings the whole thesis to a close, summarising the most important elements of this research study.

Chapter 2 – Literature review

2.1 Introduction

This chapter presents a brief review of the concepts of Environmental Education and Education for Sustainable Development and how academic discussion has moved from the former to the latter. It also presents how these two concepts overlap and exist in the UK context, focusing on the current strategy that the UK government launched in 2006, the National Framework for Sustainable Schools (Department for Education, 2008).

The next section of the chapter presents the small number of existing studies concerning children's influence on their parents' pro-environmental behaviour. Eleven studies have been conducted to date, investigating among other things, children's influence on parents' pro-environmental behaviour. Note that, this study focuses exclusively on the aforementioned children's influence, investigating it in different ways, through four different sources and various methods. This is something that the previous studies have not done, which enhances the quality and the importance of this study.

Next, this chapter provides a brief review of the literature on children's influence on their parents in general and how the role of children has changed over time. Within this framework the area of intergenerational learning is also briefly presented as a supplementary concept that explains the influence between parents and children and vice versa.

Besides intergenerational learning, the literature review chapter presents how the concept of sustainable development has been approached and promoted through social learning. Finally, the chapter closes with the role of information and education in people's pro-environmental behaviour.

2.2 Environmental Education

The purpose of this section is to present the linkages between environment and education, and to talk about the field of environmental education, starting with the evolution of this province at global level. In effect, this section is the stepping stone to the following two which describe the transition to the new idea of Education for Sustainable Development and how it fits in the British context.

Some years ago, it may have not been discernible for somebody to see where environment and education overlap, but after 1990s many public and private initiatives have taken place globally, to establish environmental education and make it an integral part of countries' school curriculum. Regarding the roots of environmental education, it should not be neglected the

contribution of Goethe, Rousseau and Montessori to the evolution of environmental education. These important thinkers influenced the world with their environmental thoughts and practices, but the 'founder' of environmental education in the United Kingdom, a country with remarkable tradition in that field, is widely seen to be Sir Patrick Geddes (1854-1933) (Palmer, 1998). He was a Scottish Professor of Botany, who combined the quality of the environment with that of education, by bringing students closer to the environment (ibid).

The term 'environmental education' first appeared in the UK in a conference at Keele University, Staffordshire; in 1965, which resulted in the establishment of the Council of Environmental Education in 1968. The IUCN's definition of environmental education says that:

"Environmental Education is the process of recognising values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the inter-relatedness among man, his culture, and his biophysical surroundings. Environmental education also entails practice in decision-making and self-formulation of a code of behaviour about issues concerning environmental quality" (IUCN, 1970, cited in Palmer, 1998, p. 7).

The development of Environmental Education in the course of time

1948 – First appearance of the term 'environmental education' (IUCN Conference in Paris)

⇩

1965 – The term 'environmental education' was first used in the UK context

⇩

1970 – Establishment of the Council of Environmental Education in the UK

⇩

1975 – The Belgrade Charter – A Global Framework for Environmental Education

⇩

1977 – First Inter-governmental Conference on Environmental Education (Tbilisi, UNESCO)

⇩

1990 – National Curriculum Documentation for Environmental Education

⇩

1992 – Rio Earth Summit (Agenda 21, Chapters 25 and 36)

⇩

1996 – Government Strategy for Environmental Education in the UK

⇩

2006 – UK's National Framework for Sustainable Development by DfES

Figure 2.2.1 The development of Environmental Education

Briefly, environmental education managed to become a worldwide movement, but later on it failed to maintain its initial holistic vision (Sterling, 2004). Chronologically, in the 1960s the focus of environmental education was on rural and local studies, while in the 1970s it embodied urban issues, and dealt also with ethical and political dimensions (ibid). In the 1980s, environmental education acquired its global dimension and in 1990s the movements

for change in education helped the concept of Education for Sustainable Development to emerge (Sterling, 2004).

According to the Belgrade Charter in 1975, the main aims of environmental education share a common rationale with the definition mentioned above. Specifically, these are (i) the focus on the interdependencies among the economic, social, political and ecological aspect of our world, (ii) the protection and improvement of the environment through the acquisition of knowledge, skills, values, attitudes and commitment and (iii) the creation of new sustainable patterns (UNESCO, 1975, cited in Palmer, 1998). So, the role of environmental education is based on the help offered to individuals and community to achieve two main goals that can be categorised using two verbs, *understand* and *foster*. To be more specific, environmental education is linked with understanding the intricate nature of the interactions between people and natural world; as well as with the environmental improvement and protection by fostering the necessary knowledge, attitudes and behaviours (Palmer, 1998).

Sterling (1992) has helpfully summarised the characteristics and attributes of Environmental Education. Environmental Education is an enduring process, interdisciplinary and holistic in nature and application, which should be approached as a whole and not by subject, and it refers to the 'coexistence' of human and natural systems. Environmental education also perceives the environment as a multilateral concept with social, political, economic and moral aspects, recognising the resource and energy scarcity problem. Additionally, environmental education is in favour of learning through participation and experiences from practical and first-hand activities, giving importance to active responsibility. Finally, it stresses the environmental problem in the three time areas (past, present and future) locally and globally; and by all these, it tries to rise and develop individuals' and community's (collective dimension) environmental sensitivity, awareness, understanding, critical thinking and problem-solving skills (Sterling, 1992, cited in Palmer & Neal, 1996).

This section presented briefly the concept of Environmental Education, its course over the years and its basic principles; and it leads to the next one which is the Education for Sustainable Development, as the descendant of Environmental Education.

2.3 Education for Sustainable Development

This section presents the concept of Education for Sustainable Development, its evolution over the years from Environmental Education to the current form, and finally how it has been applied in the UK context, describing two main strategies, that of Eco-schools and the National Framework for Sustainable Schools.

Education for Sustainable Development derives from the concept of Environmental Education when the terms of sustainability and sustainable development were first introduced in the 'word list' of environmental education in the 1990s by the World Conservation Strategy (IUCN/UNEP/WWF 1980). It is underscored in Agenda 21 (1992) that "…education is critical for promoting sustainable development and improving the capacity of people to address environment and development issues" (Agenda 21 1992 par. 36.3). Orr (1992) stresses that the priority of education which aims at a sustainable society should be the nonnegotiable commitment to life, where different disciplines and parts of the personality (e.g. intellect, hands and heart) are connected, according to the principles of education for sustainability.

The Sustainable Development Education Panel, an organisation responsible to help schools to promote ESD, gave the following definition for ESD, stating that "Education for Sustainable Development is about the learning needed to maintain and improve our quality of life and the quality of life of generations to come. It is about equipping individuals, communities, groups, businesses and government to live and act in a sustainable way; as well as giving them an understanding of the environmental, social and economic issues involved. It is about preparing for the world in which we will live in the next century, and making sure that we are not found wanting" (DETR, 1998 p.4). Sterling (2004) distinguishes three types of learning, the first[1]-, second- and third-order learning. The second-order and third-order learning are those types that sustainability requires (ibid). The second-order learning entails critical reflective learning and the third is characterised by creativity and awareness of the existence of alternative worldviews and practices.

According to this classification of learning, Sterling (2004) also categorised the educational responses to sustainability. He started with Education *about* sustainability which relates to the first-order learning, and where sustainability could be a separate subject in the curriculum (ibid). The second response was that of Education *for* sustainability whose main movement was the greening of schools and colleges (ibid). The learning entailed in this response is neither critical nor reflective, but it constitutes an adaptive response of second-order learning (Sterling, 2004). Finally, the third type of response to sustainability was Education *as* sustainability, which can make a mutable learning experience easier (ibid). This response focuses rather on the process and quality of learning, and in turn learning is seen as a creative, reflexive and participative process (Sterling, 2004).

Specifically, ESD combines economic, social and environmental development by redirecting the initial goals of Environmental Education towards sustainable lifestyles, enabling citizens to "…understand, appreciate and implement sustainable strategies" (Tilbury 1995 p.198). These

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[1] It is adaptive learning, based on functions where the 'information' is the main locus of interest.

three 'spheres' of sustainable development have an effect both on our present and future. Sterling (2004) introduces the term of 'sustainable education', which requires a change of educational culture. This change can facilitate the theory and practice of sustainability to develop in a critically aware way (ibid).

A later version of the World Conservation Strategy (IUCN/UNEP/WWF 1991) regards the ethic for sustainable living as a very important concept that educational programmes should focus on. A key effort for ESD is The United Nations Decade in Education for Sustainable Development (DESD, 2005-2014), which is a concerted and global attempt to change education and the quality of people's lives around the world through transformations in education policy, investment and practice (UNESCO, 2011). It was proposed at Johannesburg World Summit on Sustainable Development in 2002, to compensate the concept of ESD which was neglected at the Rio Earth Summit in 1992 (ibid). Moreover, the DESD was designed "…to engage people and communities in meaningful lifelong learning process which examine how societies can live in more sustainable ways" (ibid. p. 12). Hence, the term ESD does not refer exclusively to the school environment but in various social contexts, in formal education system and in daily and professional life as well (UNESCO, 2011).

The main principles of ESD are based on enabling "…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" (DETR 1998 p.4). A core element in the concept of ESD is learning, aiming at mindset changes and further engagement in sustainable futures matters. More specifically, it is defined as "…what has been learnt and is learned by those engaged in ESD, including learners, facilitators, coordinators as well as funders […] as the gaining of knowledge, values and theories related to sustainable development (and) […] also refers to learning to ask critical questions, clarify one's own values, envision more positive and sustainable futures, think systemically respond through applied learning and explore the dialectic between tradition and innovation" (UNESCO, 2011, p. 8).

Two important and apparently interconnected processes of ESD are those of collaboration and dialogue which could increase substantially people's capacity for engagement in environmental learning towards sustainability (UNESCO, 2011; Wals, 2009) and their problem-solving capacity as well (Wals, 2009). These processes have been proved particularly useful to supporting the frameworks and practices of ESD (UNESCO, 2011). They take place among different stakeholders and cultures, a systemic perspective of environment and human actions, innovations in curriculum, teaching methods and learning experiences and finally from active and participatory learning (ibid). This study centres on the collaboration and dialogue

between children and their family members in order to examine if the message of sustainability transfers from school to home.

However, ESD does not aim only at learning about Sustainable Development but also at its maintenance and extension through the engagement with practices in our everyday and professional life (UNESCO, 2010). Central role in ESD have the values and the respect for others in present and future generations, for the environment and its resources and for difference and diversity (ibid).

ESD is characterised by interdisciplinary and holistic character, it is value-driven and fosters the development of people's capacity for critical thinking and problem solving (UNESCO, 2010). In essence, in ESD, the critical thinking perspective of learning encourages people to review the way they understand the world and how they gain and form their knowledge and opinion. Moreover, critical thinking also contributes to understanding the role of media and social groups in people's priorities and disclosing the influence of culture on people's values and beliefs (UNESCO, 2011). Hence, critical thinking examines in depth the 'sources' of unsustainability, trying to make people recognise their own bias or assumptions while they form their opinions and act upon their knowledge and perspectives (ibid).

As far as the envisioning of future included in ESD learning, "…it is a process which is transforming the way people relate to their future, helping to cultivate dreams, inspire hope and lead to action plans for a more sustainable future" (UNESCO, 2011, p. 33). In my opinion, this perspective is inextricably linked with this study aiming to investigate the intergenerational learning between children and adults, trying to take advantage of the power of adults today and the future power of children to make sustainable lifestyles a norm.

ESD relies on participatory methods, being at the same time a multi-method based lifelong learning process, which can be applied in our everyday life, personally or professionally; locally and globally (ibid). Within this framework of ESD, a key term is that of 'processes' which refers to "…engagement opportunities, pedagogical approaches or teaching and learning styles adopted to implement ESD at different educational levels and in varied educational settings" (UNESCO, 2011, p. 13).

In essence, participatory approaches in learning which apply the principles of sustainability to people's everyday lives are a key element in ESD. They are mainly supported by sustainable schools which through participation enhance children's understanding of sustainability and raise their awareness of what they can do and how they can reach sustainable lifestyles goal (Barrat, Scott, & Lee, 2010); helping at the same time children build confidence and self-esteem (Gayford, 2009). The review of UNESCO (2011) includes an illuminating table with the educational shifts proposed by ESD and also maps those pedagogical strategies which are most

common in ESD. These are the role-play simulations, group discussions, stimulus activities, debates, critical incidents, case studies, reflexive accounts, critical reading and writing, problem-based learning, fieldwork and outdoor learning and modelling and good practice (ibid). It has also been ascertained that the active learning processes (Cotton & Winter, 2010; Tilbury & Cooke, 2005) and the participatory approaches (Tilbury & Cooke, 2005) are considered important.

Educational shifts proposed by ESD	
From	**To**
Passing on knowledge	Understanding and getting to the root of issues
Teaching attitudes and values	Encouraging values clarification
Seeing people as the problem	Seeing people as facilitators of change
Sending messages	Dialogue, negotiation and action
Behaving as expert-formal and authoritarian	Acting as a partner-informal and egalitarian
Raising awareness	Changing the mental models which influence decisions and actions
Changing behaviour	More focus on structural and institutional change

Table 2.3.1 Educational shifts proposed by ESD (UNESCO, 2011, p. 25)

One of the findings of this review is that there is not much evidence in the literature of ESD about the processes (how) and learning opportunities (if), namely about 'how' things 'work', in contrast to the substantial number of publications which focus on objectives and outcomes of ESD programmes without documenting how they were achieved (UNESCO, 2011). Hence, this research study shows interest in *if* and *how* intergenerational learning really happens within the family environment, steered from children to family members.

Consequently, our lifestyles need to change according to the principle of Sustainable Development through ESD. In other words the way we lead our lives, where our role as consumers is central from food to natural resources consumption (e.g. water and energy consumption).

2.4 Environmental Education in the UK context

The UK is one of the pioneer countries in fostering, integrating, implementing and integrating Environmental Education. It was only in 1974 when the School's Council Project Environment came to print, defining the content of environmental education within an educational framework for the environment and about the environment.

In 1970, the founded in 1960 National Rural Environmental Studies Association developed and was renamed into the UK National Association for Environmental Education (Palmer, 1998). According to the official Mission Statement of NAEE, its main goal is the promotion and support of environmental education via formal education. To be more specific, NAEE is a charity whose aim is to introduce and promote environmental education in nurseries, schools

and other educational institutions, since it sees it as a way to make students more responsible and caring citizens[2]; in terms of sustainability issues which affect our planet now and in the future (NAEE, 2008).

The contribution of this organisation is very important since it provides its full support to any environmental education-based effort. Actually, it supports teachers practically, with all subjects and segments of formal education. It is also a very active organisation with participation in initiatives about environmental education, encouraging teachers and institution to work together and set a good environmental example respectively; with the view to raising the people's environmental concern and level of action (NAEE, 2008).

In the late 1990s the National Curriculum Council (NCC) worked on the examination of the topics of environmental education focusing on the enhancement of students' knowledge, understanding and skills. Specifically, it wants to get the students to understand the natural processes, the total dependency of human kind (physically and socially) on the environment, the environmental impact of our activities and the conflicts that stem from environmental issues. Moreover, it aspires to 'create' more skilful students now and more active citizens later, able to 'decide' and shape the environment. Finally, one main concern is the realisation of the environmental impact of decisions and actions from the past, which is obvious now, and how our current decisions and actions will affect the future generations, in conjunction with the identification of our personal commitment towards the environmental protection (Palmer, 1998).

Two more notable initiatives of the UK were the publication of Toyne Report – Environmental Responsibility: An Agenda for Further and Higher Education, in 1993 and in 1996 the Publication of the British Government: Taking Environmental Education into the 21st Century.

More recently, in November 2006, the Department for Education and Skills (DfES) launched the National Framework for Sustainable Development, setting as target every school to be a Sustainable School by 2020. So, this initiative is based on the government's acknowledgement of the role of schools in forming attitudes and behaviour, by influencing students directly and their close social environment (e.g. family and community) indirectly. School is the place where learning processes are situated, an attribute that has been proven beneficial to helping students understand on their own the environmental impact of their actions. This programme also encourages students to lead their lives in a sustainable way, communicate the message and set a good example to others. Another contribution of this programme is the promotion of community cohesion through the creation of strong and important connections between

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[2] "...citizenship concerns the status and activity of individuals in the public domain, in relation to the state...and emphasises the duties and responsibilities that citizens have to act in the interest of the common good" (Seyfang, 2008, p. 58)

schools, students and parents (DCSF, 2010). This three-fold connection can be enhanced due to the schools' ability to ameliorate the physical environment around and within the school, and in doing so, they finally manage to influence students' behaviour, attendance and academic achievement, ensuring parents' support (Broadhurst, Owens, Keats, & Taylor, 2008).

The idea of Sustainable Schools is built on three cornerstones, namely a commitment to care, an integrated approach and a 'doorways' selection (of sustainability topics). The commitment to care consists of a three-fold commitment of students to care for themselves, for each other and for the environment. Regarding the integrated approach, the school will try to improve its performance towards the sustainability target through the teaching provision and learning methods included in the curriculum, the school's values, ways of thinking and working within the campus' borders and finally through its ability to engage the local community and students' social circle. Finally, as far as the set of the eight 'doorways' to sustainability are concerned, these are specific and discrete fields that the schools should focus on and use to determine their sustainability approaches and practices. These sustainability themes are the following:
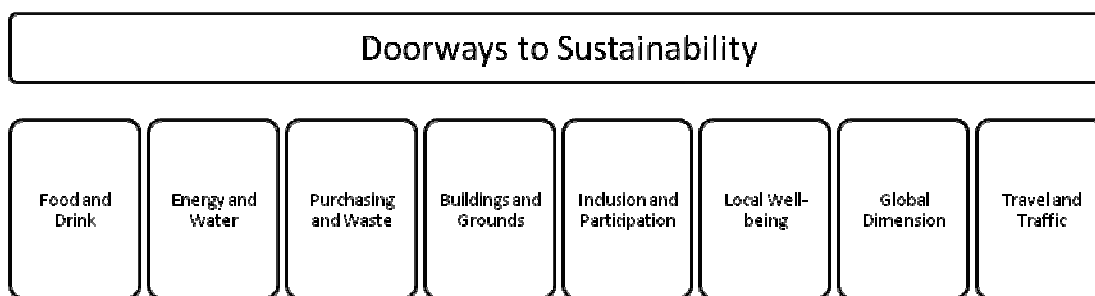
Figure 2.4.1 Doorways to sustainability

The National Framework for Sustainable Development developed a framework that could help schools, teachers and students to achieve their goals. One of the supporting methods is a performance award scheme, known as Eco-Schools, which assess how well a school meet the programme's expectations. Another supporting organisation is the Ofsted (Office for Standards in Education) which is in charge of the inspection of schools, teacher education etc and regulation with the view to achieving excellence within the educational system.

2.4.1 Eco-Schools and the link with Sustainable Schools Strategy

'Eco-schools' is an award programme that assesses and recompenses those schools with the best performance in terms of the achievement of the sustainability goals. This intervention takes place under the auspices of the Foundation for Environmental Education (FEE)' and it is one of the five programmes that the FEE runs. In the UK, the allocation of duties regarding the 'proper' operation of the programme and its administration has been split into four different authorities, such as Keep Britain Tidy, Keep Scotland Beautiful, Keep Wales Tidy and Tidy

Northern Ireland. After a school has registered, there are nine environmental themes for the school to choose from. There is no need for the school to address all of them, but it can construct a 'portfolio' of themes instead, allowing the students to decide. So, this programme gives the power to students to decide what they want to deal with, according to their interests, opportunities, abilities and so on. The prizes that a school can be awarded are the bronze, the silver and the green flag as a token of excellence.

With regard to the Sustainable Schools Strategy and how it links with the Eco-schools programme, we can say that the former defines the general guidelines in order for schools to meet the basic requirements for an operation based on the principles of sustainable development and the 'doorways' mentioned above. But the Eco-schools programme is the 'next' step to this effort when the basics have been achieved. Hence, they complement each other. Schematically, the links between the nine environmental themes of Eco-schools and the eight 'doorways' of Sustainable Themes are as follows:

Eco-Schools Themes	Sustainable Schools doorways
Healthy Living	Food & Drink Inclusion & Participation Local Well-being
Energy	Energy & Water Inclusion & Participation
Water	Energy & Water Inclusion & Participation
Transport	Travel & Traffic Inclusion & Participation Local Well-being
Waste Minimisation	Purchasing & Waste Inclusion & Participation
School Grounds	Building & Grounds Inclusion & Participation Local Well-being
Litter	Purchasing & Waste Inclusion & Participation Local Well-being
Biodiversity	Building & Grounds Local Well-being Inclusion & Participation
Global Perspective	Global Dimension Inclusion & Participation

Table 2.4.1.1 Eco-Schools and Sustainable Schools

The links among the programmes and organisations schematically is as follows:
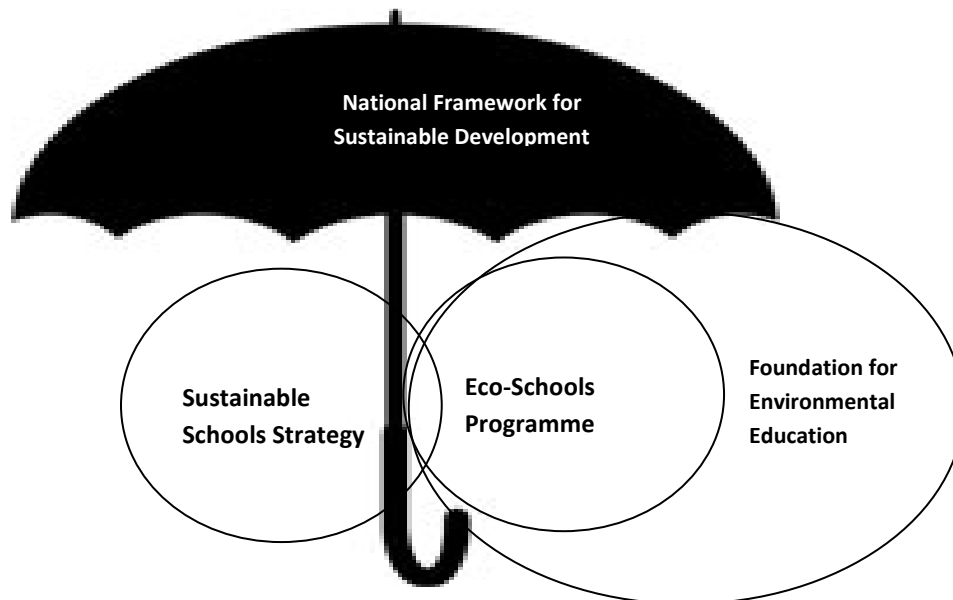
Figure 2.4.1.1 Programs for Environmental Education

This section has briefly introduced the concept of environmental education and how it has been applied in the UK context, as well as the role of supporting organisations and programmes. This section is also the stepping stone to the next one which is related to the general influence of children on their parents out of the environmental educational context.

2.5 Children's influence on parents' pro-environmental behaviour

In the literature of Environmental Education and Education for Sustainable Development there have been a limited number of studies on children's potential to influence their family members, especially parents, to make their lifestyles more sustainable and environmentally friendly. The capacity of children to prompt pro-environmental behaviour within the family by influencing their parents is an emerging field which was first paid attention in the early 1990s (Rickinson, 2001). It aims to examine a succession of events and influences beginning with that of school on children and children on parents through intergenerational influence (see for example Uzzell et al, 1994; Vaughan et al, 2003; Leeming et al, 1997). In general, this literature finds that children do have an influence on their parents, affecting their values, attitudes and decisions (Axinn & Thornton, 1993; Homer, 1993); which in turn determine their choices as consumers, their sport and leisure activities and even their clothing style (Howard & Madrigal, 1990; Polachek & Polachek, 1989).

Reviewing the literature, eleven studies have been conducted, that deal with students' influence on their parents' environmental knowledge, attitudes and behaviours (Sutherland & Ham, 1992; Uzzell et al., 1994; Evans et al., 1996; Leeming et al., 1997; Ballantyne et al., 1998; Legault & Pelletier 2000; Ballantyne et al., 2001a; Ballantynte et al., 2001b; Volk & Cheak, 2003; Vaughan et al., 2003; Grodzinska-Jurcack et al., 2003). These studies focus on

environmental education programmes which last one year at the longest and among others they investigate children's influence on parents' pro-environmental behaviour. However, the teaching programmes that these studies investigate are part of the experimental design of the research project and do not consist of a long-term strategy that was running before and after the studies. As a result, this constrained the effect that the programmes could potentially have, because sustainability was not well-embedded in school ethos due to the short duration of the programme and lack of continuation. Regarding the methods that were used in those studies, they were mostly teaching methods through various activities, as part of the programme used for the purpose of the study rather than a wide range of data collection methods.

This study is empirically original because it is the first to address the topic of inter-generational influence in the context of education for sustainable development as a central focus. Previous research has only dealt with this topic as a part of a bigger set of questions about environmental education. Another element that highlights the originality of this study is the fact that it studied a long-term environmental education programme unlike other studies. This fact ensures an ongoing and consistent transfer of environmental information and knowledge which help students understand that sustainability is a high-profile message, well-embedded in their school's ethos. In effect, it helps students normalise it and understand that it is integral part of the school environment and ethos and not something that is happening for a short period and then it is over. Another element that highlights the contribution of this study is that fact that it provides rich information about the negotiations that take place at home, something that the previous studies have not done (Larsson et al, 2010).

The two studies of Sutherland & Ham (1992) and Uzzell et al. (1994) have very similar focus to my study. However they date back to 1992 and 1994, which makes them rather out of date. This is something that also enhances the originality of the current study which focuses on a recent environmental education programme which is still running and with a long-term perspective until 2020.

In addition, previous studies did not include participant observation in their data collection methods, missing out rich information that could be drawn from the school environment and the way sustainability is diffused across the curriculum. This is something that has been mentioned in the literature, as an effective way of achieving an ongoing transfer of environmental information (Legault & Pelletier, 2000), which could enhance eventually children's environmental knowledge, awareness and confidence to pass this knowledge to their parents. This is another gap that this study fills in, by focusing on a programme that encourages the diffusion of sustainability across the curriculum, something that the programmes in the previous studies had not focused on.

2.5.1 Pro-environmental behaviour

Students' and families' pro-environmental behaviour is the main focus of this research study. The following section explains what pro-environmental behaviour means and the factors that can promote or hinder it. Starting with a definition, Kollmuss and Agyeman (2002) say that pro-environmental behaviour is "…the behaviour that seeks to minimize the negative impact of one's actions on the natural and built world" (Kollumss & Agyeman, 2002, p. 240). Steg and Vlek (2009) give also a definition of pro-environmental behaviour as a behaviour that "harms the environment as little as possible, or even benefits the environment" (Steg & Vlek, 2009, p. 309).

Pro-environmental behaviour can be influenced positively or negatively by factors which determine the effectiveness of the behavioural interventions by aiming at important causes of the relevant behaviour and the removal of barriers for changes (Steg & Vlek, 2009). Steg and Vlek (2009) maintain that there are some motivational factors for the engagement in pro-environmental behaviour, which are the perceived cost and benefits (in terms of money, effort and social approval), the moral and normative concerns and the affect.

Kollmuss and Agyeman (2002) made a different categorisation of those factors, which overlap with the categorisation of Steg and Vlek (2009). These factors are classified into: (i) demographic, (ii) internal and (iii) external factors. The demographic factors include gender and years of education which, according to Kollmuss and Agyeman (2002), influence environmental attitude and pro-environmental behaviour. The internal factors include motivation, pro-environmental knowledge, awareness, values, attitudes, locus of control, responsibilities and priorities (ibid).The external factors include institutional factors (e.g. infrastructure), economic, social and cultural factors (Kollmuss and Agyeman, 2002).

Regarding the necessary interventions for behavioural changes, they must be targeted to the respective factors which influence behaviour the most. Steg and Vlek (2009) make a distinction about the strategies for behavioural changes, starting with the:

- Antecedent strategies (changing factors that precede behaviour)
- Consequence strategies (changing consequences that follow behaviour)
- Informational strategies (changing motivations, perceptions, cognitions and norms)
- Structural strategies (changing circumstances under which behavioural choices are made, e.g. availability and actual costs and benefits of behavioural alternatives)

On the other hand, there are constraints that hamper people's behaviour and consequently their pro-environmental behaviour (Tanner, 2009). Tanner (2009) divides these factors into two categories:

1. Subjective factors which influence the preference for pro-environmental behavioural alternatives.
2. Objective conditions which hinder the performance of pro-environmental action.

According to Tanner (2009), some examples of subjective factors are the perception of environmental issues, the sense of responsibility, the anticipated costs of a behaviour, the perceived behavioural barriers and the preference for particular behavioural alternatives. Examples of objective conditions are the socio-demographic variables and the socio-structural relations (ibid). However, regarding the real role of socio-demographic variables, some other studies do not find consistent outcomes as far as their influence on environmental attitudes is concerned (Van Liere & Dunlap, 1980).

Frey (1988) also argues that the lack of opportunities and motivations may constrain or hinder the individual's behaviour and explain their non-action respectively. This lack of opportunities will possibly deter individual from adopting a pro-environmental behaviour despite their possitive attitude and intention to act (ibid). But asking people to explain the reasons for their non-action will help them consider the necessary conditions for performing an action and justify their final behaviour (Tanner, 2009).

Kollumuss & Agyeman (2002) explains the discrepancy between attitude and behaviour and Rajecki (1982) pinpoints four causes which are responsible for this gap between attitude and behaviour: (i) direct and indirect experience, (ii) normative influence, (iii) temporal discrepancy and (iv) attitude-behaviour measurement. After all these, we can say that there is not direct determination of behaviour from attitudes and the latter can only influence our intentions which give shape to our actions (ibid). But our intentions are also influenced by social (normative) pressures and finally, our pro-environmental behaviours are shaped considering the behavioural and normative beliefs (Ajzen & Fishbein, 1980). A logic explanation of the existence of the Value-Action Gap is the failure of the majority of pro-environmental models to consider individual, social and institutional constraints and their assumption for rationality and systemic use of information by humans (Blake, 1999). Blake (1999) also mentioned another three barriers that work in favour of the aforementioned gap, which are: (i) individuality, (ii) responsibility and (iii) practicality.

2.5.2 Focusing on children or adults?

Some of these eleven studies have stressed that children are the key audience that could have an impact on the pro-environmental behaviour of adults, and in effect they can influence the quality of the environment now and in the future. Sutherland & Ham (1992) argue that children have the potential to put environmental degradation on hold, because they can be the environmental stewards of the future (also Ham et al., 1989) and their attitudes are more adaptable. Leeming et al (1997) also argue that the possibilities for children to have already established environmentally harmful behaviours and habits that are difficult to give up are low. They maintain that the period of their influence on the quality of the environment is longer lasting than adults', transferring and promoting the message of environmentally responsible behaviours to the grown-ups' world (ibid). Moreover, there are teachers who believe that time, energy and attention must be paid to students, because they can be regarded as a captive audience, more easily taught and influenced than adults (Ham, Southerland, & Barborak, 1989).

According to Storm (1988), the needs for different kinds of education at school change over time and from generation to generation. This evolution of the educational needs is combined with the extensive volume of information that the children are exposed to nowadays, which is often more up-to-date than their parents. For example, children are potentially more aware than their parents of environmental issues and technological developments, meaning that they are more environmentally literate. On the other hand, adults count on media for their Environmental Education (Ballantyne, Fien and Packer, 2001b), due to the difficulty in participating in well-organised environmental education programmes for adults. However, we must admit that media are able to enrich adults' environmental knowledge, but not enough to foster environmental action (Finger, 1993). According to Ramsey and Hungerfold (1989), this is because the classroom can be the place where environmental knowledge, strategies and self-efficacy can be enhanced thanks to a formal environmental education programme. This attribute can be augmented by the inclusion of ecological activities, making the programme more effective to change students' attitudes and behaviour towards more pro-environmental ones (Legault & Pelletier, 2000), and by the enthusiasm that interested teachers can communicate to students.

Evans, Gill and Marchant (1996) also maintain that environmental education can make a contribution to solving environmental problems through long-term measures and long-lasting results. They explain that children are being taught about the environment at school or by different sources like media, while their parents had missed the environmental aspect of the formal school education since the environment was not a priority during their childhood (ibid).

There are contradictory opinions about where education should focus on and to what direction they should shift their interest, regarding the implementation of environmental education programmes. Evans, Gill and Marchant (1996) recommend a solution (through an environmental education intervention) that will have long-term effect, exactly because they have acknowledged the existence of a time gap between when the young people are given information and knowledge through their participation in the environmental education programmes, and when they have an active role in planning or decision-making. Sutherland & Ham (1992) point out that the current environmental situation needs a drastic solution now because we cannot afford to wait for children to grow up (Medina, 1989). While current parents have the power to influence the quality of the environment at the moment; Leonard (1987) defines the time gap until children take control of their power and determine the quality of the environment to 10 to 15 years. Others support adults as the locus of interest for environmental education programmes (Vaughan et al., 2003, p. 19), because adults are considered more capable of causing drastic and rapid changes in environmental behaviour (Ham & Sutherland, 1991; Sutherland & Ham, 1992).

A motive that could work in favour of environmental protection is the promotion of a sustainable environment for future generations, in other words, for our children to live in (Balantyne, Fien, & Packer, 2001b). Intergenerational influence could be a step towards that direction, affecting adults' environmental knowledge, attitudes and behaviours (Ballantyne, Connell, & Fien, 1998). Parents are found to be more simplistic than their children in the way they understand environmental themes and protection, but they are sensitive about the environment since they associate it with their children's future (Uzzell et al., 1994). Parents' interest for future generations can increase their environmental awareness and in turn the importance of the information that the children bring home (Uzzell et al., 1994), despite the fact that the students do not talk a lot with their parents about specific environmental actions. However, children tend to focus on the bigger picture and on the future dimension of the need for change (Volk & Cheak, 2003).

As we see, there are different opinions on whether emphasis should be given to children or adults in environmental education programmes. In my opinion, by focusing on children's ability to influence the adults' world and their behaviour, we can achieve both a future and present effect on the quality of the environment. The present effect will occur through their influence on their parents' pro-environmental behaviour, while the future one will happen during their adulthood.

2.5.3 Key findings on the presence of intergenerational influence

The following table presents the eleven studies on children's influence on pro-environmental behaviour, summarising their basic characteristics.

Study	Duration	Goals	Participants	Teaching Methods	Data Collection Methods	Type of research
Sutherland & Ham (1992)	4 months	To examine: -The transfer of environmental knowledge and information from children to parents -Children's influence on parents' pro-environmental behaviour.	-Grade-6 students -Parents	A booklet with environmental information was given to students.	-Ethnographic data -Pre-and-post-programme interviews with parents. -Participant observation of two families and schools.	Empirical study.
Uzzell et al. (1994)	N/A	-To examine (i)the role of institutions in children's environmental knowledge and action competence (ii)the phenomenon of catalysis without any significant intervention of environmental education (iii)the intergenerational communication and influence towards action competence (iv)children's and parents' knowledge, concern and actions about the local and global environment (v)the conditions that could encourage the catalysis effect.	-Politicians -Technicians -Teachers -Pupils -Parents -Local people -Journalists	-Workshops, -Newsletters -Diaries -Articles Trips -Photographs	-Interviews -Questionnaires -Observation studies -Experimental and laboratory based studies -Pre-and-post-programme questionnaires and interviews.	An international project that took place in four European countries (Denmark, France, Portugal, UK).
Evans et al. (1996)	6 months	-To test if children have different and better-informed opinions about the environmental issues than their parents. -To find out if children can influence their parents' environmental attitudes.	-Students -Parents -Experts	N/A	-Pre-and-post-education questionnaires for students and parents.	Empirical study.
Leeming et al. (1997)	N/A	To assess if the participation in environmental activities: (i) change the environmental attitudes and knowledge of children at different ages. (ii) encourage children to influence their parents' environmental attitudes and knowledge and pro-environmental behaviour.	-Elementary school students -Parents	-Participation in environmental activities.	-Pre-and-post-questionnaires about environmental knowledge and attitudes of children and parents. -Instruments: Children's environmental attitude and knowledge scale Weigel & Weigel Scale (Weigel & Weigel, 1978).	Empirical study.

Study	Duration	Goals	Participants	Teaching Methods	Data Collection Methods	Type of research
Ballantyne et al. (1998)	N/A	-To focus on the factors which affect the intergenerational communication -To determine to what extent school environmental education programmes are able to encourage intergenerational communication and learning.	-Primary school children (Grade 5 & 7) -Parents -Teachers	-Conversation objectives -Attractive Materials -Dramatic performances -Dance -Stories -Interactive games	-Pre-and-post-programme questionnaire for students. -Pre-education questionnaire for parents. -Post-education interviews for parents. -Observation -Instruments: Children's environmental attitude and knowledge scale Six dimensions of student-parent communication.	Empirical study.
Legault & Pelletier (2000)	8 months	-To investigate the changes that participation in a environmental education project can cause to children's and parents' environmental knowledge, attitudes motivation and behaviour -If and how children can influence their parents' ecological attitudes, motivation and behaviours. -Focus on: (i)Ecological knowledge on issues and strategies. (ii)The importance parents and students give to environmental issues (iii)How satisfied people are with the environmental conditions. (iv)Their competence to take action. (v)The rate of recurrence of pro-environmental behaviour. (vi)The measures of intrinsic and extrinsic motivation.	-Grade 6 students -Parents	-Motivation of pro-environmental behaviour through the theory of self-determination (Deci & Ryan, 1985).	-Pre-and-post-programme questionnaires for students and parents.	Empirical study.

Study	Duration	Goals	Participants	Teaching Methods	Data Collection Methods	Type of research
Ballantyne et al. (2001a)	N/A	-To find out if: (i)school-based environmental education programmes can have an impact on students' learning. (ii)it can cause any intergenerational influence, after children's participation in the programmes.	-Primary school (Year 5 & 7) students -Secondary school students (Year 9) -Parents -Teachers	-Story telling. -School visit to an environmental centre. -Six thinking hats (De Bono, 1992). -Students' assessment work.	-Post-programme questionnaires for students. -Personal interviews with teachers. -Telephone interviews with parents. -Methods of analysis: Comparisons across the programmes and across different groups of students from each programme.	Empirical study.
Ballantynte et al. (2001b)	-1,2,5 months -1 year	-To focus on the development of environmental education programmes to enrich students' environmental knowledge and enhance their pro-environmental attitudes and action competence -To examine the programmes' effectiveness in enhancing students learning and intergenerational communication and influence within the family.	-Primary and secondary school students -Parents -Community members -Public forums -Local newspapers -Local industries and business	-Class discussions -Hands-on activities -Homework -Role-plays -Oral presentations -Small group research -Observations -Written assignments -Industry visits -Water quality monitoring -Experiential learning -Interschool meetings	-Surveys for students and parents. -Interviews with parents.	Empirical study.
Volk & Cheak (2003)	5 years	-To evaluate the impact of an environmental education programme on students, parents and the community.	-Grade 5 & 6 students -Parents -School personnel -Community members	N/A	-Interviews of students, parents, school teachers, administrators and community members. -Newspaper articles written by children. -Proceedings from symposia. -Surveys conducted by students. -Instruments: Middle school Environmental Literacy instrument Critical thinking test of environmental education.	Empirical study.

Study	Duration	Goals	Participants	Teaching Methods	Data Collection Methods	Type of research
Vaughan et al. (2003)	1 month	To examine: (i)if the children learn and retain some environmental principles (ii)if they manage to transfer this knowledge to their parents.	-Elementary school students (Grade 3 & 4) -Parents -Adult residents	-Colouring books -Homework (worksheets with questions).	-Pre-and-post-programme questionnaires for students, parents and residents.	Empirical study.
Grodzinska-Jurcack et al. (2003)	4 months	-To determine the extent to which students', parents' and teachers' environmental knowledge, attitudes and behaviours have been affected by school environmental education programmes.	-Primary school students (Year 4 & 5) -Parents -Teachers	-Textbooks for students -Manuals for teachers -Brainstorming -Discussion -Demonstration -Visit to local landfill site. -Meeting with local authorities.	-Pre-and-post-programme questionnaire for students, parents and teachers.	

Table 2.5.3.1 Classification of previous studies

From the table we can see that all of the previous studies used mainly questionnaires and interviews as data collection methods, although some less conventional methods were used mainly for teaching purposes. Methodologically, the longest of those studies (end effectively the duration of the programme they focused on) lasted 1 year. Regarding the duration of the programme, the literature says that it can facilitate the transfer of environmental knowledge from school to homes through children (Duvall & Zint, 2007) and assure the ongoing engagement in environmental education activities (Hungerfold & Volk, 1990; Leeming et al., 1997). Note that the programme under study in this research, the National Framework for Sustainable Schools, promotes the diffusion of sustainability across the curriculum, which finally can lead to the repetition of ecological information as a way to overcome or moderate the weak transfer of environmental knowledge (Legault & Pelletier, 2000). The repetition of environmental information will help children consolidate their knowledge enhancing their confidence in their knowledge and their 'expert' feeling (ibid). At the same time it can increase the possibility of children to bring up this topic and initiate a discussion about the environment with their parents.

The following table organises the previous studies by theme and considers how they address or introduce the topics of (i) environmental education interventions, (ii) children's influence on parents as a result of environmental education intervention and (iii) intergenerational communication and information transfer. This table is a summary of the general ideas which are explained later on with more detailed tables attached.

Theme	Findings and studies
Environmental Education Intervention type	• They can be more effective if more focus on the local environment and positive action are taken by students (Ballantyne et al., 2001a) • No concrete evidence that environmental education programmes can indirectly reach a wider audience of adults through children (Ballantyne et al., 2001a)
Children's influence on parents	• More possible to happen outside the strict school environment (Uzzell et al., 1994) • Robust evidence to support this view (Evans et al., 1996; Leeming et al., 1997) • Some children managed to change their own behaviour and some others tried to change or influence their families' consumption patterns towards more sustainable ones (Ballantyne et al., 2001a) • Parents admitted that they had been challenged by their children to change their attitudes and practices at home (Ballantyne, 2001b) and they trusted their children to teach them something about issues resolution (Volk & Cheak, 2003)
Intergenerational communication and information transfer	Information transfer: • Vague, weak and not detailed (Sutherland & Ham, 1992) • The information transfer from children to parents was intense, but inconsistent and unreliable (Vaughan et al., 2003) Intergenerational communication: • Rare (Uzzell et al., 1994) • The discussion about the programme at home varied substantially, from simple comments to actions at home (Ballantyne, 2001b) • Mainly triggered by the children (Ballantyne et al., 2001a) • The majority of students discussed with their parents about the environment after their participation in the environmental education programme (Grodzinska-Jurcack et al., 2003) • Students did not discuss a lot with their parents about specific environmental actions (Volk & Cheak, 2003) • Parents' and children's claims about discussions were different (Grodzinska-Jurcack et al., 2003)

Table 2.5.3.2 Thematical categorisation of the studies

The previous table gives a general picture of this specific area of the literature organised by three different themes. Regarding the interventions of environmental education, Ballantyne et al. (2001a) suggest that they should focus on the local environment in order them to be more effective. Concerning children's influence on their parents as a result of environmental education interventions, which answers the main research question, Evans et al. (1996) and Leeming et al. (1997) contend that there is evidence to support this idea. Ballantyne et al. (2001a) mention that there were some children in their research who finally changed their behaviour and also tried to influence their parents' consumption patterns. Finally, Ballantyne et al. (2001b) say that there were parents who admitted that they had been pestered by their children to change attitudes. In general, all the studies show a link between environmental education and children's influence on parents' pro-environmental behaviour.

As far as the intergenerational communication is concerned, Sutherland and Ham (1992) say that it is weak and not detailed, and Vaughan et al. (2003) also maintain that it can be intense; however it has been proven inconsistent and unreliable. Regarding the intergenerational communication about the environment, Uzzell et al. (1994) maintain that it is rare and Ballantyne et al. (2001a) inform us that it is mainly instigated by children. Grodzinska-Jurack et al. (2003) underscore that children's participation in environmental education programmes is the main motive that encourages children to discuss about the environment with their parents, however they contend that parents' and children's claims about the level and frequency of discussion about the environment differ.

The following section explores the findings of the previous studies in more detail, specifically dealing with the role of the environmental education interventions, their ability to motivate children's influence on their parents' pro-environmental behaviour and how the message of sustainability is taken home within the framework of intergenerational communication within the family. This classification is also presented in the respective tables in each section. These three sections present the existing evidence on the main research question about children's influence on parents' pro-environmental behaviour, and if and how this influence can be instigated and encouraged by environmental education interventions at school.

2.5.4 Environmental Education Interventions

This section describes some basic characteristics of environmental education interventions, such as their role, focus and limitations. This mention will be made through the prism of children's influence on parents' pro-environmental behaviour.

Because this influence is characterised by a double nature, Uzzell et al. (1994) suggest that schools should intervene at two levels, child and parent levels, in order to encourage the effect of catalysis; taking into consideration the dynamics of the family. It has also been observed but

not absolutely proven, that through environmental education programmes, their impact on students, and the resulting process of intergenerational learning, we may reach a wider audience in the adults' world (Ballantyne, Fien, & Packer, 2001a).

Regarding the way in which environmental education programmes should be introduced to students, the literature suggests that they should deal with environmental problems from the local community (Uzzell et al., 1994). This could enhance the effectiveness of these programmes, as a result of the attention to the local environment and the positive action taken by students (Ballantyne, Fien, & Packer, 2001a). They would be helped in that way to learn new information, develop skills and adopt attitudes and approaches with positive impact on the environmental problems (ibid). An extra benefit for students would be the opportunity they would have to escape the traditional school books and the strict curriculum, promoting in that way a more useful way of learning, leaving behind the traditional teaching (Uzzell et al., 1994). As a suggestion, Ballantyne et al. (1998) believe that interesting and enjoyable programmes could possibly make children initiate discussion about the programme at home, without them being a deterrent factor. They also believe that this would be a nice and effective way to approach parents and increase their environmental awareness and enhance their willingness to act (ibid). Moreover, if these educational programmes are released from grades and assessments which cause stress and they are bound with appealing activities instead; the possibilities of students' more effective respond towards the initial goal of the programme are much higher (Vaughan et al., 2003).

However, Ballantyne, et al. (1998) stress that the ulterior purpose should not be to instil any specific environmental beliefs, attitudes or behaviours but to inform them via this intergenerational process. For example, one way to introduce these interventions is through experiential environmental education, where Uzzell et al. (1994) found out that it finally had only some effect on children's and parents action competence, but it made both groups more concerned about the local environmental problems.

On the other hand, Ballantyne, Fien and Packer (2001a) observed through their study a basic limitation of environmental education interventions. They found that the involvement of children, parents and other community members in environmental education programmes cannot guarantee a better understanding and appreciation of the human-environment relationship, people's increased awareness of the environmental problems, the acquisition of insights and skills for action and their strong commitment to act (ibid). Ballantyne et al. (2001a) also believe that the extent of the involvement that could lead to the aforementioned characteristics still remains unknown or unclear. Meinhold and Malkus (2005) say that there is

evidence which can defend and support the contention for a positive relationship between environmental knowledge, attitudes and behaviours.

On the other hand, Larsson, Andersson and Osbeck (2010) acknowledge a large gap, known as value-action gap, between environmental attitudes and behaviour among young people, a view that is also supported by Grodzinska-Jurczak et al (2003). Grodzinska-Jurczak et al (2003) found in their study that the relationship between environmental knowledge and final pro-environmental behaviour is insignificant and Tikka et al (2000) stress also this disparity between environmental knowledge and improved practices. Addittionally, Leeming et al. (1997) found out that the participation in environmental activities can definitely have a positive impact on children's environmental attitudes. However, they could not say the same for their knowledge on environmental issues, since participation in those activities did not seem to have a significant effect (ibid). The following table presents in more details the impact of and benefits from children's participation in environmental activities in terms of the formation of environmental attitudes, knowledge and behaviour.

Participation in environmental activities and impact on children
• They can have a positive impact on children's environmental attitudes but it does not seem to have any on their environmental knowledge (Leeming et al., 1997)
• Somewhat successful in making children influence their parents' pro-environmental behaviour, according to parents' views (Ballantyne et al., 1998)
• It cannot ensure a better understanding of the human-environment relationship, an increased awareness of the environmental problems and the acquisition of insights and skills for action (Ballantyne et al., 2001a)
• -Benefited the development of the students' critical skills related to the environmental knowledge -Enhanced children's maturity, self-esteem, autonomy, self-confidence and self-control (Volk & Cheak, 2003)
• Both children and parents learned from this programme (Vaughan et al., 2003)
• The extent of involvement that could enhance the understanding the human-environment relationship, the environmental awareness and the acquisition of insights and skills for action is unclear or unknown (Ballantyne et al., 2001a)

Table 2.5.4.1 Key findings on participation in environmental activities and its impact on children

This section presented what the literature suggests about the interventions of environmental education. Uzzell et al. (1994) say that these interventions should address both to parents and children, in order to reach a wider audience (Ballantyne et al., 2001a). Their focus should be on local environmental problems (Uzzell et al., 1994) so as to be more effective (Ballantyne et al., 2001a). Moreover, Ballantyne et al. (1998) support an interesting and enjoyable character of the interventions, which could increase the rate of discussions about the environment at

home. Ballantyne et al. (1998) underscore that the environmental education should not mean to instil environmental attitudes, beliefs or behaviours in the first place, but they should inform people to acquire all of them on their own.

Hence, this study focuses on an environmental education intervention which manages to integrate most of the aforementioned suggestions. First of all, it encourages the involvement of students, parents and teachers through their active participation and engagement, reaching an even wider audience. The area of its focus can be the wider environment or the local environment (e.g. school ground). The NFSS has got an interesting and enjoyable character because it gives schools (teachers and students) the option to choose their own areas of development and focus, in terms of their interests and preferences. Finally, this intervention does not focus exclusively on instilling environmental attitudes in the first place. What it actually does first is that it provides students with the necessary environmental information and knowledge through the diffusion of the message of sustainability across the curriculum. Then the next step is instilling environmental attitudes and behaviour change through the involvement in environmental activities and projects.

2.5.5 Children's influence on parents' pro-environmental behaviour as a result of environmental education intervention

Children's influence on parents' pro-environmental behaviour, the phenomenon known as 'catalysis' by Uzzell et al. (1994) which characterises this process, constitutes the main research question of this study. In essence, the research aims to understand if this influence can be initiated or motivated by school-based environmental education interventions. For example, Leeming et al (1997) report robust evidence to support their hypothesis that children can influence their parents to adopt more pro-environmental behaviours. Uzzell et al. (1994) conclude that the phenomenon of catalysis cannot happen spontaneously but education is needed to trigger this mechanism, targeting both children and parents.

The following table presents more detailed findings from the literature regarding children's influence on their parents and how children and parents perceive their role and characteristics with respect to pro-environmental behaviour.

Children's influence on parents
• It can be enhanced through the repetition of ecological information from environmental education programmes (Ballantyne et al., 1998)
• Students share their environmental learning and attitudes with their parents, influencing positively the everyday practices of the household (Ballantyne, 2001b)
• 34% of the parents confirmed that their children had made suggestions for improvements in family attitudes and waste practices at home (Grodzinska-Jurcack et al., 2003)
• According to students, the second most influential method is the presentation of the environmental information and the discussion about it at school (Ballantyne et al., 2001b)

Table 2.5.5.1 Key findings on children's influence on parents

Although the literature presents evidence that confirms the existence of this type of child-parent influence, the evidence is not strong enough for researchers to conclude with certainty. For instance, Evans et al. (1996) ascertained that children *can* possibly have an impact on their parents' environmental behaviour since they were seen to react positively to school-gained environmental information. Evans et al. (1996) could not prove this with certainty, but they suggested that it is possible. One possible explanation for this weak evidence is that the previous studies did not solely focus on this aspect as a research question, but that was one aspect among many others. Hence, the emphasis that they might have given to children's influence on their parents' pro-environmental information specifically was not adequate to bring concrete evidence. This provides an aspect of originality that this study offers: the specific focus on children's influence on parents' pro-environmental behaviour.

Regarding the effectiveness of the environmental education programmes to encourage children to influence their parents, Sutherland & Ham (1992) and Leeming et al. (1997) contend that it is weak, but it can be enhanced through the repetition of ecological information (Legault & Pelletier, 2000) and the continued engagement in an environmental education programme in order to sustain children's ecological attitudes (Hungerfold & Volk, 1990; Leeming et al., 1997). As a result, the duration of exposure in an environmental education programme is positively related to the changes in pro-environmental attitudes, motivation and behaviours. This view was in line with Ballantyne et al. (1998) who found that long lasting programmes are somewhat successful in making children influence their parents' pro-environmental behaviour.

The following table presents the conclusions from the studies regarding how children and parents viewed themselves and each other, especially in terms of their confidence in influencing and being influenced.

	• Children's and parents' characteristics
Nature of children	• Aware of environmentally friendly activities (Evans et al., 1996) • Potentially better informed than their parents regarding the environment (Evans et al., 1996) • They were not motivated to educate their parents about the environment (Ballantyne et al., 1998) • Students preferred focusing on the bigger picture of an environmental problem and on the future dimension of the need for change (Volk & Cheak, 2003) • Most of the students showed low environmental responsibility (Grodzinska-Jurcack et al., 2003)
Nature of parents	• Environmentally sensitive because they were worried about children's future (Uzzell et al., 1994) • Positive relationship between their socio-cultural level and their knowledge, conscious and concern (Uzzell et al., 1994) • Adults counted on media for their environmental education (Ballantyne et al., 2001b)

Table 2.5.5.2 Key findings on children's and parents' characteristics

Sutherland and Ham (1992) reported that some of the students were confident in their ability to teach their parents. They regarded themselves as a frequent source of information for their parents and indicated mothers as more willing to learn than fathers (ibid). However, Sutherland and Ham (1992) state that there were children who were not as confident and viewed their parents as the source of knowledge, feeling that they had nothing new they could teach their parents. The main findings of Uzzell's et al. (1994) preliminary study showed that children rarely discussed the environment with their parents but they were confident in their ability to act as catalysts for environmental change. However, it was also found that children had not realised how influential they had been on their parents, because they were not confident that their environmental actions could lead to the desired changes in order to tackle big environmental problems (Uzzell, et al., 1994).

Parents were more positive about their children's catalytic role than children themselves, especially when they felt that their children were environmentally concerned (Uzzell, et al., 1994). When children felt like 'experts', this encouraged parents to adopt their suggestions regarding them as credible and accurate (ibid). Additionally, Volk and Cheak (2003) found that students had experienced a positive effect on their maturity, self-esteem, autonomy, self-confidence and self-control because of their participation in the programme, making adults believe in and trust them and admit that they can be taught something about issues resolution (Volk & Cheak, 2003). On the other hand, as far as the way parents see themselves in this inter-generational process, some parents admitted that they had learned from their children about the environment (Sutherland & Ham, 1992).

Regarding the reasons for the difference in parents' and children's perceptions, these are the lack of reciprocity in family relationships and the low self-efficacy of parents which prevents them from accepting the environmental information that the children bring home (Uzzell et al., 1994). Finally, Uzzell et al. (1994) mentioned the limitations resulting from the use of self-report techniques as a reliable source for evidence of social influence. They attributed it to the fact that the participants may not correctly perceive the influence they have on others or the influence of others on them, or they over-estimate their own and others' influence (ibid).

At this point we should stress the factors identified in those studies which enhance the impact of children's influence on parents' pro-environmental behaviour.

Uzzell et al. (1994) identified the factors that magnify or limit the effect of catalysis, lead to a low level influence or justify why children have different opinions from their parents. Uzzell et al. (1994) stated that children's influence can be magnified if parents are already aware of environmental problems, and when children are encouraged to talk about the environment and communicate the knowledge they have from environmental education schemes and activities. Uzzell et al. (1994) clarify that the environment should be considered an appropriate topic for family discussions and should not be one-sided, with parents taking the role of pupil at times and trusting their children's expertise in environment. This is confirmed by the results of this study which can be found in the discussion chapter where children's influence on parents' pro-environmental behaviour is classified into categories according to parents' perceptions, where one of the categories talks about the parents who said that they learn with their children at the same time.

Vaughan et al. (2003) mention that children's capacity to influence their parents is also affected by other's experiences and description. For example, if the students have siblings who have participated in environmental education programmes, then they want to share the same experiences following in their siblings' steps (ibid).

The process of acquiring pro-environmental behaviour patterns can begin from the participation in environmental activities, then a discussion is initiated and finally, change is brought about as a result of the influence "diffused" during the conversation (ibid). According to Ballantyne et al. (2001b) the enjoyment from the participation itself is not sufficient to foster environmental learning, responsible attitudes and enhance students' and parents' willingness to act. However, another factor that could aid the emotional engagement of students in environmental issues is through the focus on the evidence of an environmental problem, the impact of this problem and what needs to be done to resolve it (Ballantyne et al., 2001a). Uzzell et al. (1994) also showed that the socio-cultural background of parents played

an important part, enhancing children's ability to learn about the environment and the phenomenon of catalysis.

On the other hand, low level influence of children on their parents is attributed to factors such as low level environmental concern and knowledge of the families (both children and parents), a negative pre-disposition towards education by the parents, poor motivation and children's lack of or poor self-esteem (Uzzell et al., 1994). On the other hand, children's influence on their parents' pro-environmental behaviour can be limited if the parents consider themselves 'experts' or if the communication between parents and children is based on facts rather than on attitudes (ibid).

In summary, this section presented the literature that pertained directly to main research question regarding children's influence on parents' pro-environmental behaviour as a result of environmental education interventions. In general, Leeming et al. (1997) found that there is robust evidence to support this idea and Uzzell et al. (1994) underscored that education is needed to trigger and support this mechanism. Legault and Pelletier (2000) stated that this process of influence is weak but it can be enhanced through the repetition of ecological information. The literature also highlights that some children feel confident in their ability to teach (Sutherland & Ham, 1992) and influence (Uzzell et al., 1994) their parents, but that parents were more confident in their children's ability than the children themselves (Uzzell et al., 1994). This difference in parents' and children's perception in children's actual influence or ability to influence can possibly be justified by the lack of reciprocity in family relationships (ibid). Finally, Uzzell et al. (1994) identified some reasons which could augment the phenomenon of 'catalysis'. These are parents' environmental awareness, the opportunity for children to talk about the environment at home (ibid) and the participation in and experience from environmental activities (Vaughan et al., 2003).

2.5.6 Intergenerational communication and information transfer

This section describes the process of and motives for intergenerational communication, information and knowledge transfer through discussions about the environment within the family, between students and parents. The table below presents a summary of the literature, followed by a more detailed analysis.

Intra-family discussion about the environment
• Frequent communication and discussions with children, neighbours and so on can have a positive effect on parents' environmental awareness and pro-environmental behaviour (Leeming et al., 1997)
• Homework and school presentations can encourage inter-generational discussion within the family, according to parents (Ballantyne, 2001b)
• Most of the participating students and parents discussed about the programme, mainly initiated by the students (Ballantyne et al., 1998)
• Relevance of environmental issues to children's lives can have a positive impact from the initiation of a discussion to children's influence on their parents (Ballantyne et al., 2001a)
• The information about home discussions regarding the environmental education programmes at school, the understanding of and reaction to environmental issues, and the willingness to take action is vague (Ballantyne, 2001b)

Table 2.5.6.1 Intra-family discussion about the environment

Uzzell et al. (1994) stress that in general, children discussed more and were better informed about the environment than their parents (Evans et al., 1996; Grodzinska-Jurczak et al., 2003), but they preferred to discuss the context of the activities rather than the content. However, the parents who were already environmentally sensitive tended to ask their children questions (ibid). Adding evidence to this, Ballantyne, Connell and Fien (1998) maintain that the frequency of children's discussion with their parents about the environment affects the frequency of discussions about the specific programme. In essence, when children share their time with parents discussing and investing in the quality of their common time and the quality of their discussion, then this makes children believe that their voice is being heard and they get the opportunity to initiate a conversation about the specific school-based environmental education programme (ibid).

Regarding the initiation of discussions about the environment within the family, children were those who made the first step in the majority of cases. Ballantyne, Connell and Fien (1998) conclude that the majority of students and all of the participating parents discussed about the programme at home. They also stress that most of the time the discussion was initiated by the children, basically motivated by the school homework and the main topic for discussion was children's enjoyment of the programme activities (ibid). However Ballantyne, Connell and Fien (1998) mention that the children were not motivated to educate their parents about the environment and that the parents were not stimulated to start a conversation and elicit more information from their children. In more practical terms, Ballantyne, Fien, & Packer (2001a, b) observed that children triggered discussion about the environment at home, while some of them managed to change their own behaviours and others tried either to change or at least to influence their families. This influence was mainly focused on families' consumption patterns towards more sustainable ones, including the use of energy, water and chemicals; as well as the way parents commute to schools in terms of the transportation mode (ibid).

Balantyne, Fien, & Packer (2001b) conclude that the extent to which children initiate a discussion with their parents or even 'deepen' it is unclear. These discussions are mostly about childnren's experiences of school-based environmental education programmes, how they understand and react towards environmental issues and how willing they are to take action as a family, driven by their environmental concerns (ibid).

Another factor, mentioned by Ballantyne, Fien and Packer (2001a), which assists in raising students' awareness of environmental issues and possibility of discussion initiation about the environment and influence their parents' lifestyles, is the relevance of the environmental issues the children deal with in their lives. An intrafamily – intergenerational discussion about the environment, initiated by children and their desire to sensitise others could also be triggered if the experiences that children have gained through the programme are enjoyable (ibid).

Regarding the impact of discussions about the environment, Leeming et al. (1997) state that frequent communication and discussion with children, neighbours and so on about environmental issues, could result in changes in parents' environmental awareness and pro-environmental behaviours. In the same vein, Ballantyne, Connell and Fien (1998) conclude that student-parent communication motivated by effective environmental programmes could enhance children's potential to influence the grown-ups' sustainable lifestyles. Overall, Uzzell et al. (1994) conclude through their study that the conversation between children and parents about the project was very poor, decreasing the possibilities of impact on attitudes and pro-environmental behaviour within the family. However, according to Ballantyne, Connell and Fien (1998), four sets of factors can affect the intergenerational communication. These are the students' response to the programme in terms of enjoyment, how well they understand the information provided by the programme, how useful they think it is and if the programme makes them feel that they can help the environment (ibid).

The information transfer mainly from children to parents is one of the most important factors which could have an impact on children's influence on their parents' pro-environmental behaviour. Initially, almost every family mentioned at least some examples of information transfer from children to parents, although the level, frequency and content of this transfer varied (Sutherland & Ham, 1992). However, it was vague and not "strong and detailed" (ibid., 1992, p. 12). The majority of examples of transfer from children to parents, which Sutherland and Ham (1992) noticed, were of inadvertent learning. Similarly, Vaughan et al. (2003) noticed an intense information transfer from students to parents based on a positive relationship between common environmental learning and attitudes and pro-environmental changes at home, however the results were considered inconsistent and unreliable.

Sutherland and Ham (1992) infer that information transfer can take place either deliberately, or unintentionally, or it can be parent-initiated. Regarding the deliberate transfer of environmental knowledge, information and ideology, they state that this transfer can happen when children deliberately communicate their knowledge in order to teach their parents (ibid). Unintentionally, it can occur through children's school work, leaflets that they bring home, by overhearing and observing children's behaviour in various environments, taking part in school activities, or even by seeing children take part in environmental activities and setting an example for their parents (ibid). Finally, it can be parent-initiated where parents themselves try to elicit information from their children, based on their specialised knowledge (ibid). Sutherland and Ham (1992) presented examples of deliberate transfer which were rare in that in a few cases the children seemed to 'admonish' their parents about their behaviour or make suggestions.

Through these eleven studies, the factors that affect the intra-family and intergenerational communication and in turn the transfer of knowledge and information have been established. These are listed in the table below:

Factors that affect the intra-family and intergenerational communication	Study
Enjoyment of the programme.	Ballantyne's et al. (1998)
Understanding of the information provided through the programme.	
Children's perception of programme's usefulness.	
Opportunities offered to children to feel that they can help the environment.	
Programme length.	
Degree of programme formality.	
Degree of successful completion of programme goals.	
Differences in parents' relationships with students.	
Inclusion of homework component.	
Differences in ages and social background of the students.	
Students' enjoyment of and learning from the programme.	
Students' willingness to act in favour of the environment.	
Parents' general environmental attitudes, knowledge and behaviour.	
Focus on more tangible and obvious targets and actions.	
Collaborative learning activities.	**Vaughan (2003)**
Amusing activities.	
Novelty.	**Ballantyne et al. (2001b)**
Socio-cultural level of parents and their knowledge, consciousness and concern.	**Uzzell et al. (1994)**

Table 2.5.6.2 Factors that affect the intra-family and intergenerational communication

According to Vaughan (2003), this intergenerational transfer can be enhanced by collaborative learning activities which bring children and parents closer, motivate interaction, interest, concern and knowledge transfer. Children's excitement caused by amusing activities and practices also facilitates the information transfer within the family (Vaughan, 2003). This serves to ignite their curiosity about environmental issues and question their parents for information which initiates discussion. This is supported by, Ballantyne et al. (2001b), who concludes that the more enjoyable the programme (experiences and activities included) the more enthusiasm arises, and the more possibilities for discussion within the family. Additionally, the 'novelty factor' can initiate a discussion which in combination with the duration of the programme can bring the programme and eventually the environment to attention (ibid). Moreover, it was found that there was a positive relationship between the socio-cultural level of parents and their knowledge, consciousness and concern; expressing a more intense willingness to help their children with school work and other extra–curricular activities and discuss with their children about the environment more often, as a part of their everyday life. (Uzzell et al., 1994).

Ballantyne, Connell and Fien (1998) distinguish the factors that affect intergenerational communication about environmental education programmes in two categories. The first category is the programme specific factors, which in turn influence the frequency and nature of the communication. These factors are: the programme length, the degree of programme formality, the degree of successful completion of programme goals, the differences in parents' relationships with students, the inclusion of a homework component, the differences in ages and social background of the students and the students' enjoyment of and learning from the programme (ibid.).

The second category is the non-programme factors that Ballantyne, Connell and Fien (1998) mention and which in turn are categorised in terms of student factors, such as students' willingness to act in favour of the environment which could stimulate student-parents discussion on this topic; and parent factors, such as parents' general environmental attitudes, knowledge and behaviour (think, feel and act) which may have little effect on students' initiative to instigate a conversation. Two additional sub-categories that Ballantyne, Connell and Fien (1998) identify are: a) family communication factors, and b) the nature of the discussion, for example, with a focus on more tangible and obvious targets and actions, such as energy and water saving and waste management, where the results are easily measurable, and more likely to initiate a discussion at home (ibid).

Finally, this section presented how intergenerational communication and information transfer can affect children's influence on their parents' pro-environmental behaviour, and the reasons

that benefit students' environmental awareness and initiation of a discussion about the environment.

2.5.7 Conclusions

In summary, none of these studies came to robust conclusions regarding the potential of environmental education programmes to foster children to persuade their parents to change their lifestyles. However, the evidence shows that there is a momentum in that direction, and that environmental education may be able to have a positive and durable effect on parents (Uzzell, 1999). It is believed that the knowledge transfer and influence from children to parents are weak (Sutherland & Ham, 1992; Leeming et al, 1997), but potentially enhanced through the repetition of ecological information (Legault & Pelletier, 2000, p. 247) and the ongoing engagement in an environmental education programme (Hungerfold & Volk, 1990; Leeming et al, 1997). Finally, these studies do not offer rich information about the negotiations that take place at home (Larsson et al, 2010), and the transfer of environmental information from students to parents is known to be intense but inconsistent and unreliable (Vaughan et al, 2003; Sutherland & Ham, 1992).

2.6 Children's influence on parents

Following on from the section on children's influence on parents' environmental education, this section is the intermediate stage which describes children's influence on parents about consumer decisions and their participation in family's decision-making processes. The link between this section and the specific research topic is the 'influence' of children on parents; initially on general attitudes and behaviours and then on sustainability issues. The influence is regarded as the exercise of power in order to accomplish a specific outcome (Coleman, 1973) based on a mutual exchange process between two or more people (Spery, 1975).

1968 was the onset year of a series of studies that examined children's influence, where a lot of evidence supporting this view has since been found; and how it differs by some variables and family characteristics (Flurry, 2007; Flurry & Burns, 2005). However, over the past decades drastic changes in family synthesis and operation have taken place, affecting the role of children within the family and their 'power' in decision making approaches. For example, since 1997, children have managed to increase their influence on their parents' spending patterns (Hunter, 2002). Some of these changes are because families now act more as consumers rather than as producers, by decreasing home and local production and increasing the consumption while the number of family members has decreased in terms of either children or parents (e.g. only-child, single parents). Another sign of changes in family dynamics include the increase in horizontal relationships within the family, giving children more 'space' and more

decision-making responsibilities, and allowing them to decide more autonomously (Clulow, 1993). An example of this given 'space' in decision-making processes is the fact that parents themselves ask for their children's opinion about family purchases (Cooper, 1999).

According to the literature, there are several theoretical frameworks that have been used to examine children's influence on family decision-making. One of them is the Resource Theory[3] which stresses the understanding of "...sources of power which may be employed in social interactions" (Flurry, 2007, p. 323). Foa (1993) managed to pinpoint some important types of these social resources such as love, goods, money and information. According to Blood and Wolfe (1960) the higher the value possessed by an individual resource, the stronger children's influence on decision-making. Finally, regarding the role of children in particular, the resource theory mentions a positive relationship between children's comparative 'resources' and their influence on family consumption decisions. Examples of these resources include children's education, parental love and knowledge of the market place (Flurry, 2007). This last finding fully supports the ultimate aim of this study, but from an environmental education perspective: do children who have been educated in the environment and sustainability have the 'resource' to influence parent's environmental behaviours and lifestyles.

Solomon (2002) states that children influence parents' consumption decisions in several ways. Children's ulterior purpose is to be the 'parental yielder' which "...occurs when a parental decision-maker is influenced by a child's request and surrenders" (ibid. p. 370). One of those ways is by simply asking for things (influenced or not by media and friends), through 'unceasing' pleading or by negotiating, for example, accepting to do chores in return. According to Solomon (2002), one factor that affects the extent of this influence is culture. He asserts that the more individualistic a society is the more direct the influence the child has (ibid).

A second theoretical framework is 'consumer socialisation'. This is a process "...by which young people acquire skills, knowledge and attitudes relevant to their functioning in the marketplace" (Ward, 1974, p. 2). Children's ability to influence their parents' consumption decisions is based on knowledge and skills they gained over time, making them early, informed consumers. Moreover, these children' skills and knowledge have been enhanced over the last decades after the changes in the family structure. Children grow up in a family environment which gives them roles and instils norms, 'training' them to be consumers from a very young age. This process results in their more powerful influence on the household's purchase decisions (Mangleburg, Grewal, & Bristol, 1999).

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[3] Resources are "anything that one partner may make available to the other, helping the later to satisfy his needs or attain his goals" (Blood & Wolfe, 1960, cited in Flurry, 2007, p. 323)

Solomon (2002) regards parents, teachers, media and friends as sources of knowledge which accrue through discussion or imitative learning[4] (Dotson & Hyatt, 2005). Other than direct consumption decisions, according to parents' perception, children can influence them regarding the activities that they can take part in as a family (Jenkins, 1979), which can be considered as indirect consumption decisions. However, in relation to the specific problem, this point of view supports the assumption that children can influence their parents in order for parents to commence environmentally friendly activities, such as recycling, saving energy, composting and so on. Finally, some factors which have a positive relationship with children's influence on parent's consumption decisions are family income and parents' education level. Regarding the type and size of the family, this relationship is negative, which means that in single-parent families, children have more central role in the decision-making processes and additionally, the smaller the family size the stronger the children's influence (Flurry, 2007).

A third approach that could explain children's influence on family's decision-making processes is that of Social Power Theory which classifies the influence in two categories; the active and the passive power or the direct and the indirect influence respectively (Flurry & Burns, 2005, p. 593). The notion of the Social Power Theory first appeared in the literature foreground by Lewin (1951) and it developed a theoretical base by French & Raven (1959) and Wolfe (1959). This social power can work as a source of 'power', similar to the aforementioned Resource Theory, which individuals deploy in order to influence others. The most important bases of power suggested by Flurry & Burns (2005) are the expert, the legitimate, the referent, the reward and the coercive power. According to the authors, a person does not need to have all these bases of power, but just a combination of them (ibid). The expert power represents the knowledge about a particular topic. The reward power refers to someone who is commended for a desired action or behaviour. The referent power is related to individual's will to be identified by others and it takes place when somebody behaves according to how their close social circle expects and prefers him to behave. It is also called attraction power (Flurry & Burns, 2005). These three bases are the ones which are believed that fit best to children's social power theory.

The foregoing distinction between active and passive social power indicates the way the five bases of social power are utilized. The direct or intentional use of the power aiming at influence is considered active social power, however sometimes only the presence or the perception that the power exists and affects are enough to influence the decision-making processes (French & Raven, 1959). This passive social power gains ground over the active one as children age, because they learn their likes, preferences and desires, and they conform to it

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[4] Imitative learning "…involves extending and individual's repertoire of acquired skills by imitating the actions of others" (Howe, 1998, p. 144).

(Roedder-John, 1999). This viewpoint can be a first sign of the influence children exert on their parents regarding the promotion of sustainable lifestyles. If children stay committed to their environmentally friendly day-to-day activities the possibility for parents to follow these lifestyles increase. This commitment to sustainable lifestyles is linked with the 'preference intensity' which is "…a motivational construct that reflects the extent to which a person desires to achieve a particular outcome or purchase" (Flurry & Burns, 2005, p. 595). There is a positive relationship between the importance of the outcome mentioned in the definition of influence and the magnitude of effort exerted to influence the decision (Scanzoni & Szinovacz, 1980). According to Flurry and Burns (2005), children can influence their parents' respective process using a combination of these two ways of social power.

In summary, children do have an influence on their parents, affecting their values, attitudes and decisions (Axinn & Thornton, 1993; Homer, 1993), which in turn determine their choices as consumers, their sport and leisure activities and even their clothing style (Howard & Madrigal, 1990; Polachek & Polachek, 1989). Additionally, research in environmental education has shown that the influence that children exert on their parents has crossed the boundaries of everyday life and decisions, affecting their parents' environmental awareness and action (Sutherland & Ham, 1992; Uzzell, 1994). However, the extent to which children initiate a discussion with their parents about their experiences at school in the framework of an environmental education programme or even 'deepen' it is still vague (Balantyne, Fien, & Packer, 2001). It is also vague how children and parents understand and react towards environmental issues and how willing they are to take action as a family, driven by their environmental concerns (ibid).

This section has presented how children are seen by the business and marketing environment, not as potential consumers but as active consumers, and indicated how relevant children's influence is to the sustainable consumption field, so as more sustainable lifestyles can be adopted by parents and the whole family.

2.7 Intergenerational learning

The main focus of this research is whether children were encouraged by the National Framework for Sustainable Schools to influence their parents' pro-environmental behaviour. This refers to the transfer of knowledge, information, experience, attitudes, beliefs, behaviour and practices mainly from children to parents or adults in general. Consequently, the concept of intergenerational learning could describe the aforementioned transfer effectively. This section presents how intergenerational learning relates to the main research question regarding children's influence on their parents' pro-environmental behaviour.

According to Gadsden and Hall (1996), intergenerational learning and transmission seem to occur in all families, no matter of class, race, culture or family pattern. However, the subject area this transmission relates to can affect the intergenerational transmission of attitudes (Gadsden & Hall, 1996). This is because the importance of the various areas differs and these areas are supported differently by the family interaction and family's social network (Acock, 1984). The parent-child relationship is important and attracts researchers' attention because of the fundamental role of parents in their children's daily lives and their well-being in the future as adults (Gadsden & Hall, 1996).

However, Gadsden and Hall (1996) stressed that intergenerational learning can lie also in other forms of teaching relationships apart from child-parent, such as grandparents and teachers. But in biologically connected families, there are more opportunities for interactions between adults and children either through direct teaching or informal and everyday activities (ibid). Moreover, relationships where children are a captive audience, for example as students where teachers transmit knowledge and practices, enhance the potential of intergenerational learning.

According to Gadsden and Hall (1996), intergenerational learning represents the transmission of beliefs, practices and modelled behaviours from generation to generation. Intergenerational learning as a concept has been studied through various disciplines, such as psychology and public policy (Fitzgerald e al., 1995). Specifically in education, it describes how parents and other family members influence children's academic performance, their attendance and how they value school as institution and education (Gadsden, 1995).

The international literature in general so far has focused mainly on unidirectional intergenerational learning, from parents or adults to children. According to this route of learning, parents are regarded as the most important factor of children's socialization (Freud, 1933; Erickson, 1950), where the family provides children with stability and continuity, through which children understand the norms of social order (Gadsden & Hall, 1996). Gadsden and Hall (1996) maintain that children learn and adopt their parents' beliefs, values and attitudes either through direct teaching or through observation. Barnett et al. (1991) also state that the impact of those influences and of the adoption of the aforementioned characteristics change as children age.

On the other hand, the bidirectional nature of intergenerational learning, where knowledge, information, experience, attitudes, beliefs, behaviour and practices are being transferred from children to parents, has not been given such emphasis in the literature. This direction of intergenerational learning and influence is a kind of reciprocal influence from children to parents and vice versa (Bronfenbrenner, 1986). This inter-actionist perspective supports the

growing influence of children on their parents as both groups age, acknowledging that the unidirectional intergenerational learning and influence from parents to children ignore the reciprocity of child-parent relationships (Featherman & Lerner, 1985; Glass et al., 1986; Lerner & Spanier, 1978). Gadsden and Hall (1996) also argue in favour of the bidirectional intergenerational learning and influence, by contending that each family member has got their own space, regardless of the generation, that they need to shape until it is integrated in family life. Moreover, the formation of this space will facilitate the way the family works and how the intra-family relationships are contructed, preparing themselves for any possible change (ibid).

This section presented intergenerational learning and how it relates to children's influence on parents' pro-environmental behaviour. It was mentioned that the literature has focused more on the unidirectional nature of intergenerational learning, mainly from adults/parents to children. However, the bidirectional nature of learning explains the knowledge and behaviour transmission from children to parents exactly, and in this research study it has been seen not only as a simple transmission but also as a teaching and learning process.

2.8 Social Environment and Pro-environmental Behaviour

Since family and school are two types of community groups which interact with each other, with students being common to both, it would be meaningful to stress their role in spreading pro-environmental behaviour. For the majority of us family is the first and most powerful institution that an individual belongs to since birth. Second to this, and as the individual grows older would be the school they attend. Children spend twelve years of their lives at school, further developing relationships, opinions, values and behaviours. These two institutions are good examples of fostering the feeling of belonging, the influence of role models and trends, and of collective behaviour generally.
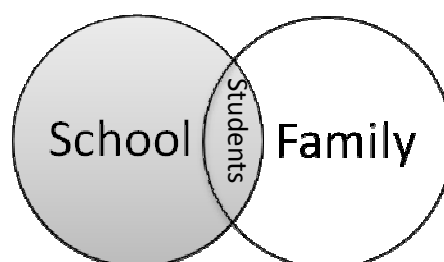
Figure 2.8.1 Connection between School and Family

Therefore, the social environment, family and school, has a formative role through one of its fundamental functions which is the participation in discussion. This participation has strong effects on the efforts of pro-environmental behaviour change (Lewin, 1947). Some subsequent

studies since Lewin have also tried to improve pro-environmental behaviour, investigating other ways of social interaction to change group standards:

- The "block leader approach" (a person who lives in the neighbourhood and informs people personally) (Hopper & Nielsen, 1991).

- Face-to-face interaction with informal advice from neighbours, friends or family, whose opinion is considered relevant and reliable (Weenig & Midden, 1991)

Through the lens of eco-teams, Susse (1999) mentions seven advantages of acting as a member of a team: inspiration from each other, synergy, encouragement to think differently, creation of environmentally critical consumers, benefit from participation and engagement and adjustment of participants' preferences.

Moreover, the recurrent interaction as a result of being a member of a team helps people to form their expectations about the correct and appropriate environmental behaviour (Susse, 1999). Additionally, the participation can contribute to their personal fulfilment and it also gives the opportunity for exchange of personal information and opinions. This debate can cause the gradual adjustment of different opinions, giving way to new everyday practices.

This interactive process is simultaneously a learning process based on consciousness-raising effect thanks to the experimentation and creation of a knowledge network. Eventually, this process develops the 'sense of duty' of consumers or the "logic of appropriateness" (March & Olson, 1989) and specifically the "ecological appropriateness". That is, the social shaping of environmental household behaviour is influenced partially by: how things should (or not) be, certain responsibilities and tasks conferred to consumers, the expectations which others have of us and vice versa, regarding the right behaviour, the shared meanings of what is right or not and information and education.

2.8.1. The role of education in pro-environmental behaviour

Regarding the role of education, it is believed according to several studies that there is no obvious correlation between knowledge and pro-environmental behaviour. However, "...the longer the education period the more extensive the knowledge about environmental issues. Yet more education does not necessarily mean increased pro-environmental behaviour..." (Kollmuss & Agyeman, 2002, p.248) and Kempton et al. (1995) concluded that "...environmental knowledge per se is not a prerequisite for pro-environmental behaviour..." (ibid, p. 250).

Given the above varied points of view, this author is of the opinion that information and education operate in a different way, which has to do with the information and knowledge

diffusion within the family. This study focuses on this kind of diffusion but in a different framework, overarched by instinct-based actions, emotions and behaviours. By saying this, I mean that the situation is more complicated than a typical educational approach. The intra-family relationships and emotions such as love, affection, happiness (derived from the common time among the family members) and devotion can steer the 'questioned' effectiveness of information and education towards a desirable path, able to lead to pro-environmental behaviour.

2.9 Conclusions

This chapter explored and presented the key studies and theories relevant to the study's research questions regarding the ability of environmental education programmes to encourage students to influence their parents' sustainable lifestyles. The literature review of this specific area of environmental education, regarding children's influence on parents' pro-environmental behaviour gives the theoretical perspective regarding the aforementioned research question. Largely, the literature states that there is…., but the evidence is not strong enough to conclude this decisively. -. The chapter then presented the literature on children's influence on their parents and family's decision-making processes. It found that families nowadays are more liberal and give more space and respect to their children to participate and play a part in decision-making.

This influence is based on the interaction of two or more different generations. It is a processes taking place between children and adults and is based on learning. The different methods of learning were presented, including the concept of intergenerational learning and its application in the formation of pro-environmental behaviours. The chapter continues with a review of environmental education, its history and evolution to the newer concept of Education for Sustainable Development, and finally, its application within the UK context, namely the Sustainable School Strategy scheme and the Eco-schools scheme.

This chapter identifies the gaps in the literature and addresses some of these in more detail in chapter three (methodology chapter). Hence, the work to date that has been done in this specific area of environmental education is limited because:

1. All the previous studies have worked with short-term environmental education programs (maximum duration 1 year).

2. Those programs did not encourage the diffusion of sustainability across the curriculum, in order to ensure the repetition of environmental information.

3. The previous studies have not focused exclusively on children's influence on parents' pro-environmental behaviour.

4. The studies which are similar to this study date back to 1992 (Sutherland & Ham, 1992) and 1994 (Uzzell et al., 1994).

Therefore, the contribution of this study lies in filling these gaps in the literature, by focusing on an environmental education program that was launched in 2006 and is still active with 2020 as its target-year, ensuring ongoing engagement at the same time. This program encourages the diffusion of sustainability across the curriculum, with consistent and repetitive environmental information. Moreover, this study has focused exclusively on the potential of an environmental education program to encourage students to influence their parents' pro-environmental behaviour.

Regarding the further contribution and impact of this study, the cornerstone is the innovative methods and methodology used for data collection and analysis (see chapter three). For example, students' participation in research design was something new in this area of research, as well as the approach that followed to check the consistency between students' and parents' perceptions.

This study also contributes to the literature by:

1. Providing a better understanding of children's role as sustainability promoters.

2. Classifying parents' according to their perceptions of their children's influence on their pro-environmental behaviour.

3. Developing a model that explains the influence process.

4. Identifying the factors that can enhance intra-family discussions about the environment in general and about environmental education programmes.

5. Comparing impacts for schools serving two different demographics backgrounds.

6. Understanding the factors of influence for families' sustainable lifestyles.

7. Addressing the potential for intergenerational transfer of environmental knowledge and information.

8. Providing rich information about the negotiations that take place at home.

The model that explains the influence process constitutes one of the most important elements of contribution of this study. This is because it manages to systemise the

influence process. Another important contribution of this study is the classification of parents' perception of children's influence on their pro-environmental behaviour, something that has not been identified and addressed in the previous studies. Finally, this research project addresses schools' specific efforts to promote sustainability and how they are perceived by students and parents, and classifies the parents in terms of their perception about students' influence on their pro-environmental behaviour.

Chapter 3 – Methodology

3.1 Introduction

This chapter describes the methodology of this research study, as well as the methods that were used at each stage of the study. Initially, it would be useful to clarify the distinction between methodology and methods. With the term methodology I mean the whole approach and theory followed in order for the study to be designed and the main research questions to be answered, while with the term methods I mean the tools which were used for data collection and analysis (Moira, 2010).

The chapter has been separated into three parts. The first part summarises the key literature on methodology and methods. The second part highlights the methodological gaps in the literature of ESD and specifically in the work concerning children's influence on their parents' pro-environmental behaviour. The third part presents the research design and describes in detail the methodology and methods that were used, in chronological order. The final part explains how these gaps are filled by this study, as well as justifying why specific methods were used, what their contribution is and how the participants benefitted from this study.

The methodology and methods which this thesis uses to investigate ESD are innovative. One of the focuses of the thesis is the capacity of a long-lasting programme of ESD to influence the pro-environmental behaviour of children and their parents; through children's influence on their parents' awareness, concern and action. The methodological innovation concerns (i) the triangulation of information (Robson, 1997; Gray, 2009) from different stakeholders (experts, head teachers and teachers, parents and children), (ii) children's participation in research design and (iii) the data collection methods per se. Previous studies in this area have used a number of innovative teaching methods but not innovative research (data collection) methods.

3.2   Paradigm and Worldview

According to a definition of Patton (2002)

"A paradigm is a worldview – a way of thinking and making sense of the complexities of the real world" (Patton, 2002, p. 69)

These paradigms stem from the epistemology, ontology and philosophy of science, providing basic and fundamental assumptions as far as the reality and its dimension are concerned (ibid.). This research study borrows some elements/properties from the *phenomenologist* worldview, which "...is committed to understanding social phenomena from the actor's

perspective. He or she examines how the world is experienced. The important reality is what people perceive it to be" (Taylor & Bogdan, 1984, pp. 1-2). As in Patton (2002), the phenomenological approach focuses on the exploration of the way individuals "make sense of experience and transform into practice...how people experience some phenomenon – how they perceive it, describe it, feel about it, judge it, remember it, make sense of it and talk about it with others " (ibid. p. 104). To be more specific, this transformation from experience to practice overarches the ulterior purpose of behaviour and lifestyle change towards more sustainable lifestyles. That is to say that parents indirectly experience pro-environmental behaviour when their children talk about or adopt pro-environmental behaviour at home, or when they talk about an environmental education scheme and communicate the message of sustainability. In doing so, the intergenerational communication and influence, which constitute the core of the whole project, are promoted.

Specifically, this study does not try to understand and interpret phenomena such as climate change, deforestation or waste management, as they exist in the real world. However, these issues are taken for granted. Conversely, the project's goal is to examine the social phenomenon of behaviour and lifestyle change, as exactly people perceive and experience this change, based on their perspective and how it is formulated through the intergenerational communication and influence within the family.

This project is also conditioned by realism which gives importance to everyday experiences and what is learned from everyday practice, being in favour of the use of both qualitative and quantitative techniques (Mark, Henry, & Julnes, 2000). This notion finds a perfect match with this specific research study which looks at students' everyday experience related to environmental issues and practices. Students should be motivated by the sustainable school strategy to work as a "vehicle" bringing all these experiences and information home, in order to influence their parents' behaviour and lifestyles. And in essence, lifestyles indicate how individuals live their lives in a specific social context and how they finally interpret them, managing to combine social structure with attitudes and behaviour (Reusswig, Lotze-Capman, & Gerlinger, 2003, p. 2). According to the definition of Giddens (1991):

"Lifestyle" is the set of social practices in which an individual engages in daily life" (Giddens, 1991, p. 81).

According to Jupp (2006), *Realism* depends on how people understand 'the real' arguing in favour of the existence of the world "...independent of the knowing subject" (ibid. p. 255), meaning that there is a reality out there beyond what we can 'see' and what we 'know' about the world. This point of view is strongly connected with the ontology of "being" which focuses on "what is". As a result, an epistemology linked to *critical realism* springs from this

interpretation of realism. In essence, critical realism questions the assertion that "real is purely empirical" (ibid. p. 256), and in terms of the environmental problem, it agrees with the viewpoint of the 'non-sensory' nature of the implications of climate change (Buenstorf & Cordes, 2008).

From another point of view, the use of mixed methods in this project indicates a *pragmatic* view towards life, because it bases the knowledge upon social constructions and the reality of the world we experience in everyday life (Johnson, Onwuegbuxie, & Turner, 2007). Hence, the worldview of pragmatism is based rather on actions, situations and conditions (Creswell, 2009), as exactly the contextual framework of this project defines. Specifically, the term 'actions' includes all the activities that the children take part in within the framework of the environmental program, the situations that indicate the family environment and finally the consequences which describe the interaction on an environmental basis, within the family.

Creswell (2009) mentions that *pragmatism* as a worldview has some characteristics that endorse its use as the main worldview that conditions the project's philosophy. Specifically, it allows for the use of mixed methods in research, which is a fundamental element of the research design of this study. Moreover, it offers the researcher the freedom to choose the methods, techniques and research approaches. This freedom was exploited to a great extend since the project consists of a combination of evaluation, case study and survey. In effect, this happens because pragmatists see the world as a multilateral unity, based on the truth of the unidimensional nature of reality. Another two characteristics of pragmatism are its focus on the context (e.g. social, historical and political) which plays a vital role in this project. This happens because the intergenerational communication and influence depend on the family and school environment, which are two basic social structures. Finally, the pragmatist worldview also centres on answering *what* and *how* something happens. Actually, since this project is conditioned by the freedom of choice regarding the research methods and approaches, offered by the pragmatist worldview and it manages to answer three basic questions, why, what and how.

More specifically, this study is answering *what* students 'teach' their parents to do to change their lifestyles, *how* this happens at home and how an environmental education intervention encourage students to influence their parents, and finally why or why not parents are influenced by their children.

3.3 Epistemological and ontological perspective

Gray (2009) explains that "Ontology is the study of being, that is, the nature of existence" (ibid., p. 17), distinguishing ontology from epistemology, saying that ontology tries to

understand "what is" and on the other hand epistemology focuses on "what it means to know". In effect, epistemology supplies the philosophy through which the investigator will conduct the study, disclosing his or her worldview. The succession from epistemology to methods is as below:
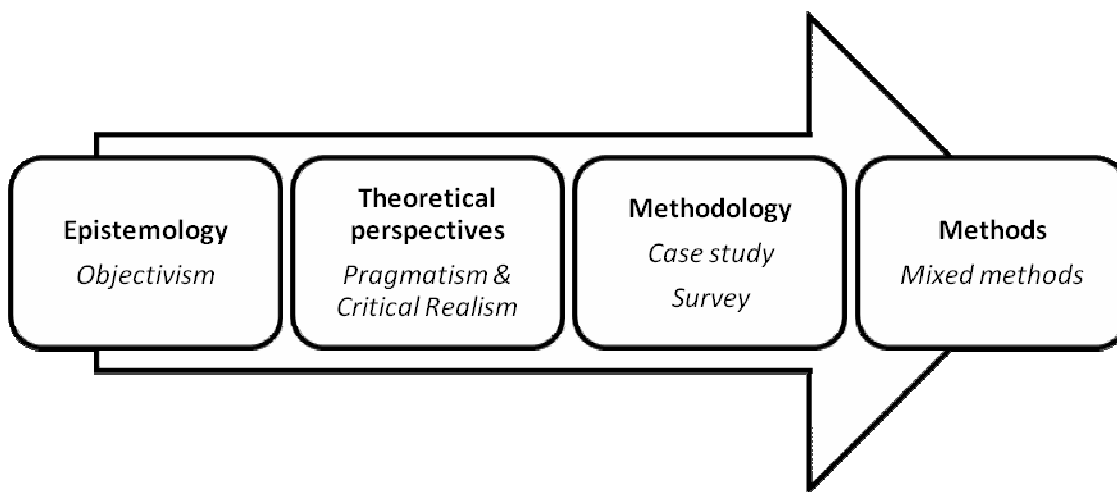
Figure 3.3.1 From Epistemology to Methods (adapted from Gray, 2009)

This figure shows the path from epistemology to methods and it is adapted from Gray (2009). The titles in *italics* under the highlighted titles, describe the whole process tailored for the specific project. The objectivist epistemology acknowledges that there is a reality out there, independent of people's consciousness or perceptions.

This section presented the researcher's worldview, the philosophical framework of this research study and its context in terms of the epistemology and ontology. Regarding the worldview, this study borrows characteristic from three different perspectives. The first is the phenomenologist worldview, where social phenomena are understood from actor's perspective and how the world is experienced. In essence, it focuses on how people perceive, understand and make sense of experience, remember it and talk about it and finally transform it into practice. Secondly, the worldview of realism also considers important the everyday experience and what is learned from everyday practice, as well as how people understand the real. The last element that the worldview of this study consists of is that of pragmatism, where our knowledge is built upon social constructions and the reality of the world we experience in everyday life. Hence, this knowledge is based on actions, situations and conditions.

Regarding the epistemology and ontology which this study lies in, they are both represented of critical realism, but from different perspectives. Specifically, the epistemology lies in people's knowledge and understanding, always in specific time and space, and the ontology focuses on the real existence of the world, regardless of the human activity and understanding.

3.4 Research approach

This section presents the theoretical background of the data collection methods and the methodology that were used in this research study. Specifically, this section shows how children's participation in research studies has been developed over the years from simple participants to co-researchers. As far as the data collection methods are concerned, mixed methods were used in this research, including interviews, questionnaires, participant observation and focus groups. Moreover, the data come from four different sources (experts, teachers, children and parents), which facilitates the triangulation process, enhancing the credibility of the data themselves and the findings that result from them.

3.4.1 Evaluation

'Evaluation' characterises the process of examining and judging the accomplishment and effectiveness of a programme (Programme Evaluation). This effectiveness can be measured by the attainment of the initial goals and objectives (Patton, 2002). In effect, the purpose of this research study is to evaluate the effectiveness of the sustainable schools strategy to foster intergenerational communication and influence within the family, instigated by children's experience at school. In effect, it wants to find out if such long term educational programmes have the potential to inspire the whole family to adopt a pro-environmental behaviour through more sustainable lifestyles.

As a result, this study is evaluation research which conducts systematic and empirical examination of the programme's effectiveness after an accurate, thoughtful and deliberative analysis (Patton, 2002). But the innovative element of this project lies in the evaluation of the programme's effectiveness not in terms of the achievement of its initial goals (e.g. every school to be a sustainable school by 2020), but in terms of its ability to attain specific "by-products", such as intergenerational communication and influence. So, in some way it could be characterised as *summative evaluation* whose goal is exactly to determine the effectiveness of the programme (Patton 2002).

This project focuses not only on the evaluation of the outcomes (the by-products) but also on the processes that lead to these achievements. In effect, the project looks both at what and how, but the "what" is addressed indirectly. To be more precise, one of the main interests is to examine how the students react to the stimuli they get from the programme and how they interact with their parents, when this interaction is related to the environment, in terms of common time, communication and participation.

The importance paid to the study of those processes, is considered essential due to (i) the volatile nature of the experience effects on different people, (ii) the wide scope of the types of

relationships among people, even within the same family, (iii) the differences in people's perception and generally (iv) the dynamic and fluid nature of the process per se (Patton, 2002).

The two classical models of evaluation are (i) the Goal-based Evaluation Model and (ii) the Goal-free Evaluation Model (Patton, 2002). This specific evaluation is more based on the latter. This is justified by the fact that the whole project is not designed to study the specific initial goals of the programme, but it is open to whatever emerges, having only a feeling or an idea of what the by-products are. In this case, the by-product is children's influence on parent's pro-environmental behaviour, encouraged by the environmental education scheme that runs at school. Patton (2002) mentions some reasons for conducting goal-free evaluation starting with the elimination of the risk of missing anticipated results. Moreover, this model sets the researcher free of perceptual biases which stem from the knowledge of goals, and it contributes to preserving the researcher's independence from goals which limit the scope and flexibility of their inquiry.

If we want to classify this project in terms of its purpose, we could characterise it as an "exploratory and descriptive evaluation", inspired by the term 'exploratory research' which shares almost the same characteristics; especially when only limited research has be done. On the one hand, according to Punch (2000), the descriptive approach is appropriate enough to examine relatively new or unexplored issues, picturing the real nature of the phenomenon and the relationships which exist (Hedrick, Bickman, & Rog, 1993). However the disadvantage of this approach is its incapability to explain how phenomenon occur (Blumberg, Cooper, & Schidler, 2005).

On the other hand, the exploratory approach is also used in order to find out what is happening. It is particularly useful when only few conclusive assumptions have been made and when not much is known about the phenomenon (Gray, 2009). Additionally, the exploratory approach tries to uncover new insights and assess the phenomenon under a new prospect (e.g. programme's by-products) (Robson, 1997). The basic difference between "exploratory evaluation" and exploratory research is that in the first case all the outcomes and conclusions accrue from the need to learn if and how what has been done works effectively, in order to achieve the by-products we intuit that this programme leads to.

If now we want to classify the evaluation process in terms of its focus, based on the table created by Gray (2009, p. 285; adapted from Patton, 1984), this evaluation project can be characterised as effect-focused because it evaluates if the programme can achieve the "by-products" mentioned above. However, it can also be regarded as impact-focused because its ulterior motive is to examine if the programme finally manages to affect students' and their parents' pro-environmental behaviour. Additionally, it can be a knowledge-focused evaluation

contributing to the improvement of future efforts, redefining the focus on interest and action and redesigning activities which are more able to penetrate into the family.

Picture 3.4.1.1 Types of evaluation and their question or approach (taken from Gray, 2009, p.285)

3.4.2 Case study

This section explains how the theoretical and methodological framework of a case study can be applied to this research study. In effect, this study can be seen as a single case study where a specific intervention is being studied (a case study of the NFSS) or as two separate case studies represented by the participating schools. Hence, regarding the sampling, it looked at two specific schools from a specific area . This fact constitutes a case study, where according to Stake (2000):

"Case study is not a methodological choice, but a choice of what is to be studied..." (Stake, 2000, p. 435).

According to Patton (2002):

"A case study approach to qualitative analysis constitutes a specific way of collecting, organising and analysing data; in that sense it represents an analysis process" (Patton, 2002, p. 447)

and according to Yin (2003), case study is

"...an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident (Yin, 2003, p. 13).

In contrast to surveys, where the scope of research is restricted but the number of people who constitute the sample is large, case studies are exactly the opposite. The sample is small, a fact that allows for in-depth study of a case and focus on the people constituting the case, in order to find out and understand new perspectives, new relationships, new themes and subjects, or clarify the already existent (Gray, 2009). For this reason, cases are selected for their illuminative and information rich nature (Patton, 2002), with a view to answering *why* and *how* (Yin, 2003) and defining the causal relationships rather than simply answering *what*, through a situation description (Gray, 2009). According to Yin (2003), exploratory and descriptive case studies complement the explanatory ones.

The main components of the research design for case studies are (i) the research questions, (ii) the units of analysis (programme, schools, students, parents), (iii) the logic behind the links among and data, units of analysis and study's propositions (locus of interest) and finally (iv) the criteria for the findings interpretation (children's influence on parents) (Yin, 2003).

But before we move on to the sampling techniques, we should not forget to mention the conditions that maximise the design quality of a case study strategy. These are (i) the construct validity, (ii) the internal validity, (iii) the external validity and (iv) the reliability (Yin, 2003). The construct validity refers to the operational measures which are suitable for the specific concept. This kind of validity can be achieved for example through multiple sources of evidence, and it fosters the researcher to choose the types of changes that are going to be studied and which are related to the initial research objectives, and to use those measures that reflect best those types of changes (Yin, 2003).

The internal validity is rather suitable for explanatory studies and not for descriptive and exploratory ones. In effect, it assures the establishment of the causal relationships, through pattern-matching, logic models and explanation-building. The external validity has to do with the generalisation of the findings; by means of theory in a single-case study, or replication logic in multiple case studies. However, this study is trying to identify the causal connections between the school and the children and then between the children and their parents, in

terms of the promotion of pro-environmental behaviour. Finally, the reliability of the case-study design depicts the ability of the repetition of some operations of the study, always with the same results. It can be achieved thanks to the case study protocol[5] and database (Yin, 2003).

Among the different types of purposeful sampling, this project chooses the criterion sampling, driving investigator to examine those cases that "…meet some predetermined criterion of importance" (Yin, 2003. p. 238). Although the design process of a case study is quite flexible, there are some issues that the researcher must cover first. These are the unit of analysis, the criteria for the selection of the cases, the key participants and the number of cases and participants (Gray, 2009). Another thing that falls into the design process is the decision on the methods that are going to be used (see for example section 4). According to Yin (2003), mixed methods (quantitative and qualitative) can be used in a case study approach, something that finds full implementation in this project.

Furthermore, another matter of the design process in case studies is the decision about the unit of analysis, namely if it is an individual case or multiple cases (Gray, 2009). Yin (2003) cites four different types of case design such as (i) a single case study at a holistic level and (ii) a single case study with various units of analysis. The third type indicates (iii) a multiple case study approach at a holistic level and the last one indicates (iv) a multiple case study with more units of analysis.

In terms of this kind of classification, this project rather belongs to the second design type, if we consider the programme meant to be evaluated as a single case and the specific schools as the additional units of analysis. But, this research study could also be characterised by the fourth type, if we consider those schools the case studies and their students the individual units of analysis, having as its main advantage the replication, which could confirm the results.

To be more specific regarding this study, the types of schools should meet particular characteristic and attributes and they will be categorised in terms of them. My first intention was to focus with schools which have been registered as eco-schools. The reason was their consistent and widely applied ranking systems of 'green flags'. This system can measure or quantify the environmental performance of the schools, making easier the identification of those schools with the same or similar environmental standards and performance. Hence, I was planning to spot two schools with as many green flags as possible (the same number) in the wider area of Leeds. Hence, the criteria were three: (i) both schools should have the same

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[5] "The protocol is an especially effective way of dealing with the overall problem of increasing the reliability of case studies" (Yin, 2003, p. 57), and it "… contains the instrument as well as the procedures and general rules to be followed in using the protocol" (ibid. p. 67)

number of green flags, (ii) both schools should be in the wider area of Leeds and (iii) one school should be in a low income area and the other one in less high income area. The reason I wanted to focus on case studies in areas with different demographic characteristics was to see the role of the families' socio-economic background in:

(i)   their environmental awareness

(ii)   their willingness to change their lifestyles and become more sustainable (e.g. willingness to pay for environmentally friendly products)

(iii)   their motives to become more sustainable

(iv)   the level of communication with their children.

Because it was impossible two meet all of the criteria at the same time, I decided to focus on those schools which have registered with the Sustainable Schools Strategy and see if they can meet the criteria. The problem was that there was not any tool or method that I could use to measure their environmental performance. However, the sustainable development consultant in Leeds Education helped me to identify the best cases, namely the schools with the best environmental performance, after a categorisation that his department had made and also meet the other two criteria.

As a result, these cases should be organised in categories with a view to facilitating the study and comparison. It must not be neglected the fact that the whole study must be holistic, taking the context into consideration. In this project which is an evaluation study, the initial case is the National Framework for Sustainable Schools (NFSS) which is evaluated in terms of its ability to encourage children to influence their parents' pro-environmental behaviour and the specific schools that are examined one by one are the sub-cases of a case study.

This section presented some characteristics of the case study approach and explained what kind of questions can be answered through a case study, emphasising on *why* and *how* rather than on *what*. The next section presents the theoretical background of survey (quantitative) and qualitative approaches and how they can be combined and lead to mixed methods approaches.

3.4.3 Participatory approach

Since the Convention on the rights of the child (UNCRC, 1989), researchers consider children's involvement in research as participants or even as co-researchers (see for example Johnson et al., 1998 and Sinclair, 2004). However, Kellet (2007) mentions that "…much participatory research is still adult-led, adult-designed and conceived for an adult perspective" (ibid.p.4).

Hart's (1992) 'Ladder of Participation' starts with the involvement of young people and children, based on tokenism, and ends with children's initiative to undertake research projects on their own and participate in decision-making processes with adults (Wade & Badham, 2003).
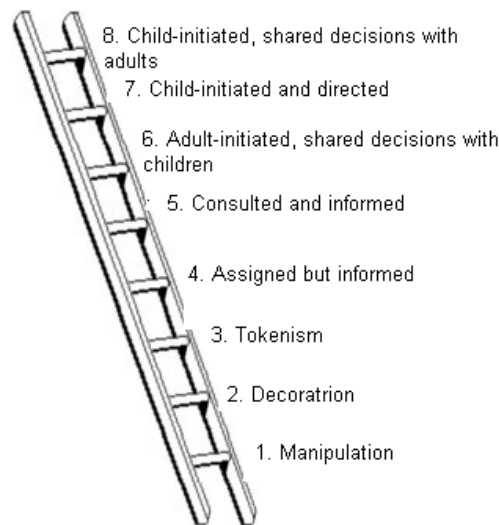
Picture 3.4.3.1 "The Ladder of Participation" (adapted from Hart, 1992)

The methodology introduced in this subsection could be described by the sixth rung of Hart's ladder of participation which is 'Adult-initiated, shared decisions with children'. This level connotes true participation through an adult-initiated project, where the children participate in the decision-making process. But initially they were fully informed about the goals of the project, having a truly active role in that. This rung of Hart's ladder of participation can be seen in the first phase of the focus group, which took place at the end of the participant observation week, only with those students whose parents had consented. It is worth reminding again that the novelty of this stage lies in children's participation in research design, by writing the questions for the interviews with the parents.

Hart (1992) ascertained that there is a bias against data and information from children, because they are considered inaccurate due to their mistakenly believed poor memory. However, he argued that this perception is absolutely wrong since it has been proved that children can give accurate, reliable and detailed information "...when it is recalled spontaneously and is of relevance to them" (ibid, p.15)[6].

Kellet (2007) has also enlisted some arguments which support the view of children's engagement in research at any level of active participation:

- Childhood happens only once in a lifetime and only the children are able to share their experience.

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[6] Bearing in mind children's development and competence in communicating.

- It is not appropriate to apply "…principles of a childhood from a generation ago to a contemporary generation" (ibid. p.8).

- Learning and understanding of children's experiences and knowledge are considered vital.

- The observation of life and its processes through children's eyes and prism can also contribute to the research development.

- Children have immediate access to peer culture which adult-researchers lack.

- The priorities that children set during the research, the methods they use to collect, analyse and interpret data are very different from adults; providing with inside information and knowledge.

This participation in research and the experience that children gain out of it increases children's self-confidence and self-esteem, making them feel their work is valued, which in turn lead to more active participation and so on.

According to Hart (1992), children's participation in research or other programmes can:

- Bring them closer to solution-finding processes for real problems.

- Offer them the opportunity to develop some critical skills necessary for their self-determination of their political beliefs which finally lead to their self-realisation as citizens; and the democratisation of the society the live in.

Furthermore, children's participation at crucial stages of research design, such as questions formulation and findings interpretation, will give them the opportunity to have their voices heard. This is in contrast to the majority of studies involving children where adults usually control the research agendas (Kellet, 2010).

Finally, another benefit which may accrue is the children becoming more persuasive because of the sense of ownership and conviction they will feel through their involvement in research (Kellet et al., 2004). In addition, children's participation will make them feel and be seen as experts, which will affect positively the effectiveness of the strategy (Uzzell, 1994; Duvall & Zint, 2007).

3.5 Research design

This section starts with the types of the data collected in this study and it carries on illuminating the stages of the research design, as they took place in chronological order, and

how and why each stage and the methods used in those stages facilitate and contribute to the whole study. The description of the research design starts with the interviews with the experts and the interviews with the heads of the schools and the teachers. It continues with the questionnaires with the students, the first phase of the focus groups with the students and their participation in research design, the interviews with the parents and it comes to a close with the second phase of the focus groups with the students.

The following diagram explains how this study answers questions about *why, how* and *what.* The questions in the boxes are those questions that helped me elicit the information I needed to answer the research questions.

-What is children's environmental knowledge?

-What do children believe about school's efforts to be sustainable?

-What do children believe about parents' environmental knowledge?

-What do children believe about their influence on parents' pro-environmental behaviour?

-Why have (or have not) the parents been influenced (children's perceptions)?

-Why have (or have not) the parents been influenced (parents' perceptions)?

What
Survey

Why
Case study

If & How
Case study

-If the parents feel that they have been influenced by their children.

-If they feel that they have been influenced by their children's school idirectly.

-How have they been influenced? What have they been doing diffrently?

-How do they feel about their lifestyles?

Figure 3.5.1 Types of questions

3.5.1 Types of data

This sections describes briefly (extensive mention and detailed description follows at a later stage of this chapter) the types of quantitative and qualitative data collected in this research study. The quantitative data come from questionnaires that the students completed. These were used and analysed as a supplementary tool to interpret the qualitative data. Therefore, the qualitative data accrue from three main categories: (i) interviews, (ii) observations and (iii) documents. This research study is based more on interviews and focus groups with different combinations of participants. To be specific, one was between researcher and teachers, then between researcher and parents, one between researcher and students in groups, and finally, one between students and parents. As in Brown, Collins and Duguid (1989), groups are not "preferred" for their convenience in accumulating participants' knowledge but for their ability to provide the opportunity to elicit insights and solutions by working synergistically (Brown, Collins, & Duguid, 1989; cited in Patton, 2002, p. 16)

These interviews consisted of open-ended questions seeking detailed and in-depth responses about "...people's experiences, perceptions, opinions, feelings and knowledge" (Patton, 2002, p. 4). These data disclosed how people see the schools' efforts to become sustainable schools from their different perspectives. The qualitative data that were collected were presented in parallel with quantitative data, such as data from questionnaires or close-type questions (Patton, 2002, p. 5). This tactic can facilitate the interpretation, presentation and communication of the findings from qualitative data. Finally, the following table outlines the types of interviews between the researcher and the participants, the types of questions that were asked and the expected answers and information before the actual interviews took place.

Interviewer	Interviewee	Questions	Expected Outcomes
Researcher	Teachers	Opinion about the programme (current efforts and development prospects)	Do teachers "believe" in this programme? Are they optimistic and positive?
		Personnel's participation	Willingness, Active Role, Relationships building
		Children's willingness and active participation	Choice of the most effective year
		Communication with children	Influence on children
		Communication with parents	Influence on parents
	Children (as a group)	What they learnt from parents	Parent's background according to children's opinion Parent's willingness to learn and teach Any innovative ideas for acting at home

		If they parents changed behaviour and practices	Children's influence on parents Consistency with parents' statements
		Common time with parents and how they spend it	The environment's share in this common time
		Brainstorming	New ideas, practices for acting at home and school
	Parents	Everyday activities	Free time for leisure
		Environmental knowledge	Environmental background, potentials for knowledge diffusion to children
		Common time with children (in general)	Building of strong relationships
		Common time with children (for school)	Awareness of and interest about what happens at school
		Communication with teachers	Parents' concerns (students' progress, behaviour, participation, socialisation)
		Discussion topics with children	If they count children's opinion and on what topics

Table 3.5.1.1 Question themes for research participants

3.5.2 Data collection methods

The following diagram shows the steps of the data collection process, which is explained thoroughly in the following sections. The interview protocols of the interviews and the questionnaires are provided in the appendices section.
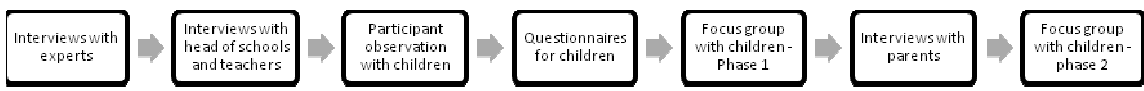
Figure 3.5.2.1 Data collection process

Research study information	
Methods	Mixed
Case studies	2 primary schools
Participants	Experts, teaching staff, students and parents
Duration of data collection period in case studies	1 month in each school
Number of interviews with experts	4
Number of teaching staff	2 Head teachers and 2 teachers
Number of participants-Children: 1st case study	50 (17 completed the study)
Number of interviews with parents: 1st case study	17
Number of participants-Children: 2nd case study	87 (20 completed the study)
Number of interviews with parents: 2nd case study	19

Table 3.5.2.1 Research study information

3.5.2.1 Interviews with experts

This first stage is important because it provided the opportunity to see if the views of the three different groups of experts (policy maker from the Department of Education, academia and consultants) converged towards the effectiveness of the National Framework for Sustainable Schools (NFSS). Specifically, in terms of not only its initial goal but also of its secondary effect, which is the improvement of parents' pro-environmental behaviour motivated by their children. Moreover, although I had familiarised beforehand myself with the NFSS, they also provided me with general information about the NFSS (purpose, implementation, advantages and disadvantages, future prospects and importance) and they helped me set the criteria for the case study selection. The interviews were about the National Framework for Sustainable Schools in the UK, its strengths and weaknesses, how it has been implemented since 2006 and what the role of the schools is to develop and embed the concept of sustainability in their ethos and possibility of diffusion of the message of sustainability outside the school boundaries across the community and students' families; and how this diffusion can be affected by the class of the families.

3.5.2.1.1 Selection of the schools

Two primary schools in areas with different demographic characteristics (IMD[7]) with remarkable achievements[8] in sustainability were chosen. One of the schools was a low income area and the other in a less low income area. Both schools were members of the 'Leading schools – sustainability team'. They were selected, because of their environmental performance, by the local city council to train other schools to become sustainable schools. Hence, those two schools that I looked at had a 'story' about environmental sustainability to narrate and could give me examples of their actions. Easterling et al., (1995) argued that children's exposure to resources such as income and residential location could affect children's potential influence on families' sustainable lifestyles. More information about the demographic characteristics of the areas where those two schools are located and their

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[7] IMD is used to classify an area based on its level of relative deprivation
[8] National Healthy School Award, Investors in Pupils Award, Stephen Lawrence Award, International Schools Award

environmental profiles are provided in the respective chapters where the two case studies are analysed.

The reason I wanted to look at schools in two contrasting areas was to investigate the role of families' socio-economic background in their willingness to change their lifestyles and become more sustainable, their environmental awareness and consciousness and the level of communication with their children and especially about the environment.

3.5.2.1.2 Description of the areas and the case studies

In the first place I start with a description and comparison of the two areas where the two case studies took place. As mentioned in the respective chapters, these two cases are located in areas with different socio-economic background. According to the Index of Multiple Deprivation (IMD) (2010) the first area was the 11,878[th] most low income Lower Super Output Area (LSOA) in England and in effect it was in the 36.57% most low income areas. On the other hand, the second area was the 18,605[th] most low income LSOA in England and it was also in the 57.28% most low income areas. Hence, the higher the IMD the less low income the area or the smaller the percentage the more low income the area.

According to the IMD, the first area was a low income or a working-class area while the second one was a rather middle-class area; and based on the observations of both areas during the fieldwork, I can say that the second one had bigger houses, mostly detached, with gardens and more open spaces, while the area of the first case study had a lot of semi-detached and social houses, with gardens as well. This is also confirmed by the 'Neighbourhood Statistics' from the Office for National Statistics, where the area of the second case study has 77.7% green spaces while the first one has got only 26.5% green spaces, and regarding the type of houses the second area has 19.27% detached houses while the first one has only 5.07% detached houses. This is a sign of the economic status of the citizens of each area and along with their average family income; they indicate that the second area was a high income area. Finally, in terms of income and cars, while the UK household average income per year is £29,100[9] (in 2008-2009), the respective average income for the first case study was about £38,500 and for the second case study was about £45,250; where we can see again that the second area is a better-off area.

Regarding the size of the schools and the participation of students in the research, the following table describes the two case studies.

Case study description

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[9] After taking account of all taxes and benefits, this is the average final income of household (Source: Office for National Statistics, "The effects of taxes and benefits on household income, 2008/2009).

	Total with consent	Response rate
1st school	17	34%
2nd school	20	21.8%

Table 3.5.2.1.2.1 Case study description

This chapter in effect presents a comparison/discussion of the two case studies, identifying the similarities and differences between the two, focusing on those findings which answer the main research questions. At the same time it addresses some new ideas which could be very useful to explain several behaviours and improve policies in the future. I would also like to clarify that the comparisons will be on the subgroups of children (n_1=17 and n_2=20) and some of the data will be presented in percentages to facilitate the comparisons, since the number of participants is different in the two case studies. Finally, I would also like to mention that the financial background of the families between the two case studies was not that different to allow conclusions based on the differences in income between the groups.

3.5.2.2 Interviews with head of school and teachers

Head teachers and teachers were asked about the integration of sustainability in their school ethos and how it has been implemented in the school. Moreover, they were asked about: (i) any preference for specific doorways to sustainability that their schools have shown; (ii) children and parents' willingness to take sustainability on board (iii) children's potential to turn their parents 'green', fostered by a long-term environmental education programme and (iv) the role of family socio-economic background in the families' pro-environmental behaviour. The head teacher of the first school, and the experts above, advised that Year 5 was the best year group to work with; bearing in mind the curriculum and students' capacity for active participation and their exams timetabling. Children's abilities to answer, judge and process depend on their cognitive and social development, which increase with age (Scott, 2008). The importance of children's cognitive status in the intergenerational influence was also mentioned by Easterling et al. (1995).

3.5.2.3 Participant observation with children

When I started the data collection at schools, I spent a whole week in each school, being present in the classroom and helping students with numeracy, English, arts and PE. This gave me the opportunity to familiarise myself with the school environment and also make the students feel comfortable enough with my presence in the classroom in order to express themselves. I also had the chance to engage in discussions with the students about the environment and observe if and how sustainability is mentions and promoted across the curriculum.

Kluckhohn (1940) set the framework of participant observation as a process of sharing systematically and consciously the life-activities in a specific occasion based on what a specific group of people is interested in. Hence, I would say that my role was rather that of 'observer-as-participant' (Jackson, 1983), trying to achieve the 'friend' role as a researcher who conducts participant observation, interacts with children and makes them trust me; showing also my willingness to abstain from any authority role (Fine & Sandstrom, 1988). However, just being around children cannot guarantee friendship between the children and the researcher, highlighting the need for a justification and explanation of my presence at school and this unexpected social relationship and interaction (Fine, 1980). Hence, the 'explicit cover' was used to explain my presence at school (ibid), explaining in plain language and schematically the aim and steps of the research, the reasons I need their help and the importance of their contribution and of the research itself. I also had to show my respect towards them and their views; since the feeling of respect is fundamental for a successful participant observation with children (Fine & Sandstrom, 1988). Through participant observation I had the chance to observe how sustainability was diffused through the curriculum, recorded in personal notes and photos (examples of photos can be found in chapter 4).

3.5.2.4 Questionnaires for children

50 families from the first school and 89 from the second were sent a letter and an information pack with the reasons for my presence at the school and the goals of the research, along with a consent form to sign if they and their children were willing to be involved further.

Initially, consent forms were handed out to children, aged over 7 years old, since according to Kellet (2010) this is the 'age of reason'. Before filling in the forms and deciding on whether they wanted to participate in the study, I explained to the children the steps of the research design and the importance of their contribution. They were asked to give their consent to participate and fill in the self-completed questionnaires in the first place, which included open- and closed-ended questions. For the open-ended questions, children could also draw something instead of writing. For the closed-ended questions, smiley and sad faces were used; based on the Likert scale, to help children express their viewpoints, thoughts and feelings (Kellet, 2007).

Finally, the questionnaire was piloted beforehand by other children of the same age and the time needed for its completion was about 15-20 minutes. Hence, 139 students from both schools were asked mainly about their own pro-environmental behaviour, their influence on their parents' pro-environmental behaviour, as well as about the school's role in this process of influence.

3.5.2.5 Focus group with children – Phase 1

With regards to this study, at this stage a democratic voting process took place whereby children were asked to write on post-its what they would like me to ask their parents regarding specific themes. We used the rhombus-shaped ranking method in order to narrow down the number of questions. A rhombus was drawn by me on the flipchart and wrote on the side, starting from the top, 'Very important', 'Important' and 'Less important'. Afterwards, I collected the post-its and read the questions out loud and asked children to vote raising their hands and rank the questions in terms of relevance and importance. This process took place three times for three different topics; "What do my parents know?", "What do my parents do to protect the environment?" and finally "What do my parents think about me?". When we had enough questions for each category, the children voted again to decide which questions should be included in the interview protocol. The final questions were edited by me in order to make wording more appropriate for adults.

In the beginning, all the post-its were put on the flip charts in the respective category after children's votes, despite the repetition. This helped the children feel useful by seeing their question on the board. After that, I eliminated the repetition in every category, and then the children started voting again to pick the best question in each category.

This process is novel not only as a data collection method that has never been used before in this specific area of ESD, but also as a skills development method that helps children enhance their self-esteem and confidence, as well as develop their critical skills (Hart, 1992; Kellet, 2007). This is achieved inter alia by making up and voting for the best possible questions for parents' interview protocol through their participation in a democratic voting process. Moreover, I could say that students' participation in research design, especially in the way that it took place in this research study instigated a discussion among the participating children which drove them to a conclusion-inference process. Hence, this is supplementary benefit for the participating children, apart from those that Hart (1992) and Kellet (2007) mention.

3.5.2.6 Interviews with parents

I interviewed the parents who agreed to participate in the research, having included some of the children's questions. They were asked open- and close-ended questions and they also had to fill in a self-completed questionnaire with demographic questions. The questions were about their pro-environmental attitudes and behaviours, the factors of influence towards more sustainable lifestyles and their children's influence towards more sustainable lifestyles. The questions were developed from the idea of 'doorways' to sustainability according to the NFSS.

Aiming at a higher response rate, the parents were given several options in terms of time and location, for their interviews to take place. However, the initial goal was both for parents to be interviewed in their houses. In most cases only one parent could be interviewed, on the school premises. Participation was voluntary and parents were given the option to withdraw at any time without the need to explain the reason. Hence, 17 out of 50 families from the first school (response rate: 34%) and 19 out of 89 families from the second school (response rate: 21.8%) gave their consent.

The novelty of this stage of the methodology in this specific area of ESD relates to the main research question about children's influence on their parents' sustainable lifestyles and I asked the parents what the factors of influence were, in order to improve their pro-environmental behaviour. I waited for their reply first and whether they would mention their children. Then I gave them a list of some possible factors of influence, except children. After that I asked them straight if and to what extent they had been influenced by their children. I did that because I did not want to lead the parents to a specific direction but let them think and speak freely. My ulterior motive was to compare what the children and parents had answered to this question, and check if there were similarities and differences in their responses.

3.5.2.7 Focus group with children – Phase 2

According to Kellet (2010, p. 8), it is very important that children "...develop capacity for judgment, for communicating their views and agency for action". Doing so will enable children to: (i) transfer the message of sustainability at home, (ii) enforce their role in parents' decision making and finally (iii) influence them to adopt more sustainable lifestyles. Hence, during this session we partially analysed the data, tried to find out and understand the reasons why the message of sustainability was difficult to be diffused and absorbed by parents. Moreover, the children were asked to suggest ways to overcome this problem or at least to facilitate this process and make it more effective. As with the first phase of the focus group, all children were in the same classroom and seated in a circle. The whole session did not last more than 40 minutes and the time was allocated almost equally to the three tasks of the session.

During this session, innovative participatory methods for ranking, decision making and problem solving were used. The children were handed out a three-page document with three different tasks to work on. The first task was called 'point system for pro-environmental behaviour', where a pyramid-shaped ranking chart with 6 levels was used to help children to classify the changes they believed they had caused to their parents' lifestyles; starting with the most powerful, drastic, effective and important change on the top of the pyramid. Any action placed on the top got 6 points multiplied by its frequency (e.g. recycling was mentioned twice on the top level of the pyramid, so 2*6=12 points). The bottom 'slice' of the pyramid got 1

point, and this happened because not only did the frequency have to be taken into consideration but also the level of the pyramid; which indicated the importance of the change mentioned by the children. The number 6 of the 'changes' is justified by the number of the most frequently mentioned pro-environmental practices that children and parents mentioned, through their questionnaires and interviews respectively.
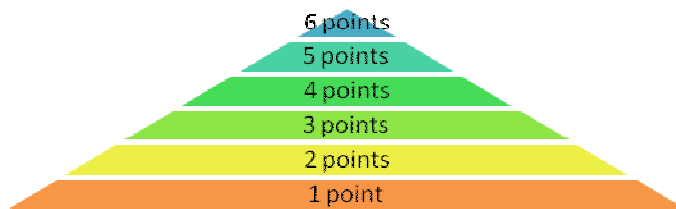
Figure 3.5.2.7.1 Pyramid shaped ranking chart

After that we tried to find out the three most important reasons why it was difficult for the parents to follow children's ideas for sustainable lifestyles. Then the children sat in a circle ready to interview the child seated on their right, asking the same question and passing round the voice recorder until the person who interviewed first would be interviewed last. This was the second task they needed to work on but before that, they were asked to prepare their answers to the questions using a paw-shaped chart. This innovative method as well as the democratic voting process in the first phase of focus group, were found "fun"[10] by the students. This confirms what O' Kane's (2008) argument, that innovative methods can be amusing, as well as offering at the same time useful and relevant data and making children feel more comfortable with the researcher as adult (Punch, 2002). At the same time this is also confirmed both by Punch (2002) and the teachers who said, that everything which is fun, unconventional and innovative attracts children attention and commitment.
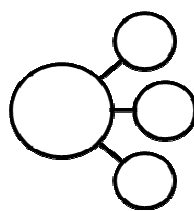
Figure 3.5.2.7.2 Paw-shaped chart

The third task of the focus group was brainstorming, where the children had to think about ways to communicate the message of pro-environmental behaviour to their parents. The children wrote down their ideas and then they dictated them to me so as to write them on the board. Some ideas related to the behaviour at home and some necessary changes, while others related to follow-up activities that children-assisted by me- could do at school to pass the message at home indirectly.

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[10] This is the exact word that the children used.

3.5.2.8 Follow-up activity

Following a conversation with the children, we asked them to write an essay outlining the findings and publish it in the school newsletter in order it to reach parents, as a way to make them reflect and finally influence them.

A few months later, following the completion of the data, I went to both schools to discuss the findings with the children of the focus groups. We also discussed possible explanations and ideas to reverse some negative or less optimistic findings. At the end, I asked the children to write an essay summarising what we discussed, giving me the opportunity to see how they can integrate all the findings together. Afterwards, their teacher emailed me the essays and asked me to make a single document including the best parts and send it back to the heads of the schools for publication. At the end of the document there were the names of the children, as a way to thank them for their participation and give them credit for their work (Brownlie et al., 2006), as well as rewarding their participation in a scientific project.

3.5.3. Analysis strategies for qualitative data

This research study analyses the data on the base of inductive analysis, tailored to explore, discover and induce logic (Patton, 2002). This inductive approach can help organise the steps of the project from data collection to data analysis, patterns recognition and identification of relationships between variables. The observations which accrue can be the stepping stone for generalisations, and theories and relationships constructions (Gray, 2009).

This process has as its starting point personal experiences and specific observations that give the researcher a hint of what is happening in the real world, in terms of the phenomenon of interest. Then the researcher ought to form patterns (thematic analysis) that describe and represent the behaviours, attitudes or phenomena studied or to disclose patterns that already exist. The next step after the inductive analysis in the specific research project, is the cross-case analysis, where pairs of cases (schools) are examined, finding and classifying the similarities and differences and categorising the cases thematically (Patton, 2002). For example, when the two case studies were compared resulting in the themes analysed in chapter six (Discussion chapter).

As a result, the researcher can support and justify the existence or non-existence of the patterns, based on the match between evidence from different pairs. In order to move on from qualitative data to generalisations, I first read all the interviews and then I identified the common or similar answers. The next step was to decide if I can elicit specific ideas that could fall into wider themes. The final step was to check if these ideas and themes can be supported by other types and sources of data.

This section presented some aspects of analysis of qualitative data that have been followed in this study. Characteristic examples of thematic analysis can be seen both in the literature review chapter and in the discussion chapter. In the first case, the literature is presented in topics and in the second case new ideas and concepts that emerged from this research have been organised by theme.

The analysis of the qualitative data was conducted by hand and some pictures of the data analysis process are provided below.

~~Is~~
~~Does~~ Is it worth doing things to help the environment even if others do not
do the same?

Yes: ~~1~~ ~~2~~ 5 ~~6~~ 7 8 ~~9~~ 10 ~~11~~ ~~12~~ ⬛13.

No: ~~1~~ ~~2~~ ~~3~~ 4

0
31.6
42.1
26.3
0

Describe ~~a~~ your current lifestyle:

42.1 % quite a few things   To do a bit more. 47%
31.6%. one or two things   To do a lot more.   31.6%

One or two things 6.	I'd like to do a lot more. 6.
Quite a few things. 8.	I'd like to do a bit more. 9.
In most things 5	I'm happy with what I do. 4.

Family annual income and current lifestyle.

In most things I do.:   5
All above the ~~mean~~ average income

- 2. 35,000 - 39,999.
- 1 50,000 - 59,999.
- 1 75,000 - 99,999 (circled)
- 1 Don't know.

Quite a few things: 8: — 2 : 10,000 - 14,999
                              1 : 25,000 - 29,999
                              1 : 40,000 - 44,999.
                              1 : 50,000 - 59,999
                              1   60,000 - 74,999
                              1 : 75,000 - 99,999 (circled)
                              1 : 100,000 or more

Picture 3.5.3.1 Data analysis example

One or two things: 6 — ⓪15,000-19,999

① 35,000-39,999

② 60,000-74,999

③ 75,000-99,999

④ Refused

Note: For example: | 75,000-99,999 | in all categories.

| 60,000-74,999 | 2 : one or two things
| 1 : quite a few

| 50,000-59,999 | 1 : one or two
| 1 : in most things

| 35,000-39,999 | 2 : in most things

Kai poca parents' pro-environmental behaviours.

Picture 3.5.3.2 Data analysis example

83

In what ways does the school influence children's lifestyle.

Clubs: 1. 2. 3.
(Eco-warriors, gardening club)
Different lessons : 1. 2. 3
School trips · 1. 2. 3. 4
Teaching : 1. 2. 3. 4. 5. 6. 7. 8.
Competitions: 1. 2.
How they do things at school. 1. 2. 3. 4. 5. 6
(Recycling, energy saving.)
Homework : 1. 2.
Visitors · 1. 2. 3.
~~Staff~~ No influence · 2.
Assemblies · 1

Yes	No
13.	6.
(68,4)%	(31,6%)

Activities
Clubs · 1. 2. 3.
Competitions · 1. 2. 3.
Homework : 1. 2. 3. 4
News letters : 1. 2.
Discussions: 2.

Turning off: 5.

Turning lights off : 2, 5, 2, 2, 6, 1, 3, 4, 2,
2, 1, 2, 2

40. 50 56 57, 58

Picture 3.5.3.3 Data analysis example

84

Recycling 87 ✓
Turning off the lights. 58 ✓
Turn TV/electr. appliances. 27 ✓
Save water 18 ✓
Save electricity/energy 16 ✓
Walk move. 16
Turn off the tap 13 ✓
Gardening./Planting. 12 ✓
Energy-saving bulbs. 9 ✓
Don't litter / Cleaning 7 ✓
Start a discussion about the envir. 6 ✓
Brown bin. 4 ✓
Replace bath with shower 4 ✓
Drive less 4 ✓
Use the bike. 4 ✓
Reuse bags. 3 ✓
Composting 2
Use the bus 1

Mum : 1 11 1 111 ⑦

Dad : 1 111 ④

The same : 111 11 1 1 ⑦ ✓

Picture 3.5.3.4 Data analysis example

3.5.4 Analysis strategies for quantitative data

The quantitative data result mainly from children's questionnaires and some closed ended questions that the parents had to answer. Those data worked more as a supplementary tool to analyse the qualitative data from the stages of observation, interviews and focus groups.

Regarding the handling of the qualitative data from parents' interviews, after the analysis of these interviews I quantified the data and counted the responses in order to categorise the

answers and classify the people according to their responses. Moreover, the quantification of the data from the interviews facilitated the comparison between the two age groups (children and parents) and between the two case studies. The production of the tables and graphs throughout chapters four and five was based on this process of quantification.

As far as the children are concerned, the questionnaires were a vital source of information. The analysis of those data was conducted in two stages. First I used the data resulted from close-ended questions to make tables and diagrams, to infer categories and trends. The second step was to combine those data with information from other phases of the research design, and support them with qualitative data. In the case of open-ended questions, and children's answers varied, I tried to find some common elements and then categorise the data. In effect I first read all the questionnaires to find the most commonly mentioned answers by the students and then I moved on to the categorisation of those answers. Finally, I also combined quantitative data both form students' and parents' answers mainly with a view to checking the consistency of their responses. In terms of the statistics I used, it was mainly descriptive statistics showing mainly the trend of the answers, since the number of the participants was too small to use further statistics. Hence, the small size of the sample did not allow me to use any statistical tests.

Overall, the quantification of participants' responses to the open-ended questions does not reduce the importance and contribution of the qualitative data, because the qualitative data justify the patterns in people's responses and the categorisation of people, providing a better understanding of the situation.

3.5.5 Types of Triangulation

This section presents the types of triangulation as a manner to enhance the reliability of the data and conclusions. Hence, four types of triangulation have been mentioned in this chapter, providing a rather spherical picture of triangulation, but in this research only two of those types have found application. The data triangulation and the methodological triangulation.

More specifically, triangulation comes to fill the gaps that the use of single methods leave open in terms of validity and credibility. For example, contradictory or rival explanations are possible to accrue by using single methods, a fact that could jeopardise the final results of the project. This may happen because different methods focus on different things, ideas, characteristics and aspects. By using multiple methods for data collection or analysis, the researcher can reduce significantly the possibilities of errors, linked to particular single methods (Patton, 2002).

According to the literature there are four types of triangulation (Denzin, 1978):

1. Data triangulation (time, space , source and person)

2. Investigator triangulation (multiple researchers in an investigation)

3. Theory triangulation (more than one theoretical scheme in the interpretation of the phenomena)

4. Methodological triangulation (more than one method to gather data, such as interviews, observations, questionnaires and documents, or examine a problem / program)

   4a. Within-method (different data-gathering techniques within the same method)

   4b. Between-method (various data-gathering techniques between different methods)

The validity of this specific research project is intentionally justified and supported by two types of triangulation. Initially, it is characterised by data triangulation because different persons are examined, such as students, parents and teachers. Finally, the type of methodological triangulation is the basic pillar of the whole project because interviews, questionnaires and focus groups have been used for data collection.

3.5.6 Ethics review

The initial research design of this study had raised some ethical issues which lay in children's participation as researchers by interviewing their parents. Based on the recommendations of the university ethics committee, I had review the research design because

> *"…the children cannot develop the necessary skills and competences to conduct the research in a way which protects them as researchers and, potentially, their parents, as research subjects" (Ethics committee, 2011)*

However, the committee acknowledged that the topics of discussion were not likely to raise major sensitivities.

Hence, when the research design was reviewed, children's contribution was to the completion of the interview protocol, which I would use to interview their parents and to the analysis of the findings from the interviews with their parents. The children were asked to make up and vote for the questions that would be included in the interview protocol.

Regarding the consents of the participants that the ethics committee required, I secured the consent from both groups in separate written consent forms. The participants (parents and

children) had been provided in advance with a suitable information sheet, written in language accessible to a lay person.

As far as the confidentiality is concerned, all the individuals were assured that they would not be identifiable when the research results would be written up, but would be anonymous.

3.5.7 Advantages and disadvantages of the research approach

This sub-section explains the advantages and disadvantages of different data collection methods, which were used in this research approach and specifically between types of qualitative and quantitative methods. Because in this research both types have been used, it would be useful to have a brief mention of their strengths and weaknesses, which can eventually play an important part in the reliability and credibility of the methodology in the first place and in the conclusion afterwards.

Qualitative methods worked very effectively in this research study as they targeted at: (i) studying an issue in depth and detail, (ii) focusing on a small number of participants (iii) trying to elicit information and individual meanings through open-ended questions and (iv) adopting an "intense and holistic overview of the context under study" (Gray, 2009, p. 164). Hence, qualitative methods produce a great amount of information of important interpretive value, deepening our understanding in tandem (Patton, 2002). Moreover, Patton (2002) maintains that the open-ended responses can give the researcher the opportunity to see and understand the world through the participants' eyes. But as it is mentioned, the purpose and the utility of open-ended questions is not only to elicit rich information but also to create the framework within which participants are supposed to answer in order to express and represent "...accurately and thoroughly their points of view about the world..." (ibid. p. 21). Nevertheless, there are some limitations that characterise open-ended questions, which relate to respondents' writing skills, the difficulty in extending responses to specific questions and completing the questionnaire (ibid. p. 21).

However, one of the drawbacks of these methods is the restricted generalisability, due to the aforementioned small number of participants and cases, which makes it difficult to apply the findings for the whole population or a substantial part of it (Patton, 2002). Another issue with qualitative methods in general and consequently with qualitative data, that I also encountered in this study, is the researcher's objectivity / neutrality and how he can remain as distant as it takes so as to keep understanding in high level, but involved enough in order not to affect the judgement. Patton (2002) calls this stance "emphatic neutrality" (ibid., 2002, p. 50).

On the contrary, the quantitative methods that were deployed in a small scale in this study can focus on a bigger number of people, enabling researcher to conduct only some generalisations,

comparisons and statistical aggregations, being characterised by Patton (2002) as succinct and parsimonious. Another advantage of these methods is their objectivity and detachment (Gray, 2009). However, quantitative methods have also got some disadvantages. One of those is "...the use of standardised measures so that the varying perspectives and experiences of people can be fit into a limited number of predetermined response categories to which numbers are assigned" (Patton, 2002, p. 14). This is something that I did in order to organise students' responses to open-ended questions. Another weakness mentioned by qualitative researchers, is its inability to have access to social and cultural dimension of people's lives which constitute their reality (Guba & Lincoln, 1994; Silverman, 2000). This is a drawback that I tried to moderate by combining and justifying ideas, suggestions or conclusions drawn from qualitative data.

After the comparison of the two basic research methods and how they worked in this research study, a third one which has started gaining ground has been used. This is the Mixed Methods Research (Johnson, Onwuegbuxie, & Turner, 2007). The term 'mixed' can be attributed to the mixture of methods for data collection, either both for data collection and analysis or throughout the whole research (Johnson, Onwuegbuxie, & Turner, 2007). According to a definition which focuses on data collection and analysis stages, mixed methods are defined as

"...the collection or analysis of both quantitative and qualitative data in a single study in which the data are collected concurrently or sequentially, are given a priority, and involve the integration of data at one or more stages in the process of research" (Creswell, Plano Clark, Gutmann, & Hanson, 2003, p. 212).

The mixed methods approach combines the advantages of the both qualitative and quantitative methods. More specifically, we can conduct generalisations, which is a property of quantitative methods and at the same time we can understand the context of a specific phenomenon in depth thanks to qualitative methods (Hanson, Petska, Creswell, & Creswell, 2005). According to Greene, Caracelli, & Graham (1989), there are five more advantages that accrue from the use of mixed methods. These are: (i) triangulation for validity enhancement, (ii) complementarily for the same purpose but this time by using both quantitative and qualitative methods to measure the same thing; (iii) development when the findings from one method inform the other, (iv) initiation through the unveiling of "...paradoxes, new perspectives and contradictions" (Gray, 2009, p. 213) emphasising on analysis and interpretation and finally (v) expansion with the aim of widening the scope of inquiry (Gray, 2009).

This subsection presented briefly the advantages and disadvantages of qualitative and quantitative research, closing with the advantages of mixed methods. The next sections describe in depth all the stages of the methodology followed in this research study.

3.6 Methodological gaps and innovations

The methodology and the methods that this thesis uses include some innovative elements regarding the data collection process in the area of ESD and particularly in the context of children's influence on their parents' sustainable lifestyles. Hence, the novelty introduced in this section lies in two things, the methods used and the methodology followed for data collection. Regarding the methodology, two specific approaches should be mentioned. First, children's participation in research design, through for example democratic decision making processes; and second triangulation (Robson, 1997; Gray, 2009) by collecting data from different sources, such as experts (policy maker, academics, consultants), head teachers and teachers and parents.

One of the main gaps that this study has identified is that the previous studies in this specific area of ESD have used rather less innovative methods for data collection. The data collection methods that have been used in the literature in this specific subsection of ESD, were mostly interviews and questionnaires with parents and children, with very limited work with teachers, administrators and community members[11]. So far some creativity in methods within the framework of an environmental education programme is visible, but innovation here is in teaching methods so as to educate the children and their parents, not in research methods.

This section also identifies the methodological gaps in the literature and how they can be filled through the application of a methodology that has innovative elements and methods to explore children's influence on their parents' sustainable lifestyles. In terms of the methodology, the most important contribution of this section concerns children's participation in research design, by writing the questions that their parents would be asked; and in the interpretation of the findings. The second contribution is the idea of explaining the consistency between parents' and children's responses about children's influence on their parents' sustainable lifestyles, by investigating children's perception about their influence on their parents and then parents' perception about their children's influence on them. The data was based on their perception and not on the actual influence, because this would require my physical presence in each house, something that was not possible.

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[11] There is a detailed table in the literature review chapter with the all the teaching and data collection methods that the previous studies have used.

The emphasis on children's perceptions and views is partially supported by McDonald (2007) who argues that policy makers do not represent children's views, because they simply cannot understand how children experience childhood nowadays. Moreover, Kellet (2010) argues that in specific aspects of life regarding childhood, there is nobody more suitable than children to talk about it. This view is also espoused by other authors who believe that children are the only people who can talk about their life experience, actions, attitudes, views and perceptions, being able to give reliable answers to questions which relate to their life (Scott, 2008; Greene and Hill, 2005).

Regarding the methods per se, the innovation lies in children's participation in a democratic voting process for decision-making. First of all through the use of a rhombus-shaped chart (see section 4.2.5) and secondly, a pyramid-shaped point system (see section 4.2.7) for the identification by the children of the areas on which they had the biggest influence. The initial aim of this methodology and these specific methods was mainly the data collection. This is in contrast to the previous studies which used some less conventional methods for teaching but their data collection methods were conventional (e.g. questionnaires and interviews). Moreover, some of the data collection methods used in this study were at the same time teaching methods, not only in terms of the environment, but also in terms of learning how to work in groups, express their opinions, think critically and elicit themselves the information they need to know.

Finally, the last important element of novelty is the triangulation of perspective, where information mainly about children's influence on parents' sustainable lifestyles has been elicited from: (i) experts, (ii) heads of schools and teachers, (iii) children and (iv) parents. This is original because no other study in this specific area has attempted to collect data from four different points of view. Note at this point that there is also an important variation within the first group of experts. To be more specific, one was from the policy making side, specifically from the Department of Education in the UK, the second was an academic, the third was a former academic and currently and NGO consultant and the last one was a consultant for a not-for-profit company, wholly owned by the City Council. Hence, they covered a wide scope of roles from the government's point of view, academia, and consultancy sector. All of the participants were asked similar questions in order to check the views from different aspects and check how consistent their responses were and if they followed a common logic.

3.7 Conclusions

This chapter presented the methodology that has been followed in this research study and highlighted some innovative methods for data collection in the area of ESD and specifically about children's influence on parents' pro-environmental behaviour. The methodology was an evaluation of two case studies using a participatory approach. In addition, the combination of data sources which led to triangulation contributed to the reliability and credibility of the data collected and the methodology itself. The multiple sources of data provided a better picture of the NFSS, how it has been applied in schools and how students and parents have been affected. Moreover, the data collection methods described in this chapter, which are the rhombus-shaped decision making method and the pyramid-shaped ranking method, were proven very effective in terms of their capacity for data collection and analysis. They also benefited the children themselves by increasing their cooperation and the potentials for better and richer findings.

The methods used in this research study were chosen for specific reasons. More specifically, the interviews with the experts gave me the opportunity to ask open-ended questions and gather information which helped me as guidelines to develop the design of my research and resolve some ethical considerations. Then the interviews with the teaching staff gave me a general impression of school's environmental performance and how well embedded sustainability is in the school ethos. After that, the method of participant observation helped me to communicate with the students directly, work with them, familiarise myself with the school environment, collect primary information about school's operation from the sustainability point of view, and how sustainable development is promoted on a daily basis, and what children's response is. The questionnaires with the children helped me increase the number of responses by including all students in the study and with the focus groups I managed to gain more detailed answers and richer information about children's perception of sustainability and influence on parents' pro-environmental behaviour. The last step was the interviews with the parents which included open-ended and closed ended questions, which helped me to check the consistency of their answers with their children's answers, categorise the parents according to their perception of children's influence on their pro-environmental behaviour and examine the factors that can help or hinder children's influence.

In this chapter, all the methods have been described in a detailed way, giving some basic guidelines for any further use, improvement or development in other studies, not necessarily relevant to ESD. In effect, they can be used in general when: (i) the consistency of children and parents' perceptions needs to be investigated, (ii) we want to find out what the children want to know from their parents, (iii) we want to examine their perception and confidence about their contribution. For example, these methods could be used very effectively in research

about children's consumer socialisation, and probably if and how they participate in their families' decision making process for purchasing and if and how they manage to play a part in it (Hall et al., 1995).

In a nutshell, these methods helped children's views and the importance they give to the environment and sustainable lifestyles to be seen by the adults through children's eyes. Moreover, the children were given the opportunity to ascertain what they really want to know from their parents and how they see themselves, in terms of their influence on the family's way of living. On the other hand, the parents expressed their opinions about children's capacity to be a 'vehicle' towards pro-environmental behaviour. Regarding the schools, they have been provided a report with the findings which they can use, in order to improve or alter their sustainable development strategies, having a better understanding of their students' views.

Chapter 4 – Analysis of the first case study

4.1 Introduction

In the following two chapters I present the findings of the two case studies separately, while in the discussion chapter a comparison between the two case studies is being presented aiming at answering the main research question about children's influence on their parents' sustainable lifestyles. This question is approached from teachers', children's and parents' perspective. This chapter presents the finding of the first case study following a structure based on the methods and consecutive stages of the research design. Hence, I start with the analysis of the interviews of the head of the school and the teacher of Year 5, I continue with the participant observation analysis, the analysis of the questionnaires with the children and the first phase of the focus group. After that follows the analysis of the interviews with the parents and the chapter concludes with the analysis of the second phase of the focus group and the overall conclusions of the case study.

This school was chosen because of its performance in terms of sustainability and it is one of the two 'best cases' that this research study has focused on. In the methodology chapter it was explained that this school has been a member of the 'Leading schools – sustainability team'. It was selected by the local city council because of its environmental achievements to train other schools to become sustainable.

In general, this case study showed that there was some influence from children on their families' sustainable lifestyles, confirmed both by children and parents. However, it was found that the children were more confident in their knowledge about the environment than in their ability to 'translate' this confidence in knowledge to confidence in their ability to influence their parents. Finally, the parents admitted that their children's school had influenced their pro-environmental behaviour indirectly through children. The children mentioned the ways the school used to influence their parents that they considered more effective. As well as the areas they thought had the biggest influence, as well as difficulties they acknowledged in their effort to pass on the message of sustainability at home.

4.1.1 About the case

The first case study is a school in a rather low income area of Leeds, where according to the Communities and Local Government information its Index of Multiple Deprivation in 2010 was 11,878th most low income Lower Super Output Area (LSOA) (E01011732) in England which means that this area is in the 36.57% most low income areas in England. According to the latest OFSTED report in 2010, this school has achieved Healthy School's Status, the Stephen

Lawrence Award and an International Schools Award and it is characterised by OFSTED as a *'good'* school and its students achieved a *'high'* score in the extent to which they contribute to the school and the wider community, inextricably linked with the aim of this research, where the influence of children outside the school boundaries, on their parents' lifestyles is under scrutiny.

Moreover, this school is a member of the Lead Partnership team of the Education Leeds, sustainability team and has the responsibility to educate and train other schools according to the principles of the National Framework for Sustainable Schools; confirming in that way that it has achieved high and recognised standards for its pro-environmental performance. Furthermore, this school has also developed cooperation with the British Trust for Conservation Volunteers (BTCV).

However, before I talk about what I observed at school and in the classroom, I can describe very briefly the area around the school. Most of the houses were semi-detached and terraced houses with small or no gardens of course with some exceptions of relatively recently built houses at a close proximity from the school. According to the Neighbourhood Statistics (2007) 39.1% of the residents in this area have not got any qualifications, 21.5% have got Level 1 qualification, 16.7% have got Level 2 qualification, 5.8% Level 3 qualification and 8.8% Level 4/5 qualification. This is an indication of the education level of the residents which has been considered for the data analysis. Regarding the type of the area where the school is placed and the parents of the students which were interviewed live, 26.25% of the total areal of all land types is used for domestic gardens, while the respective percentage for the metropolitan district of Leeds is only 11.21%. This shows the residential type of this area and the preference for domestic gardens. However, the area of green space in this area is about 26.52% while for the metropolitan district of Leeds it is 71.1%. A first assumption is that the general synthesis of the area may link to people's environmental awareness.

4.2 Analysis of the interviews with the head of the school and the teacher

The first step of the work with this school was the interviews with the Head of the school and a teacher of year five, which was the specific year group I meant to work with. The interview protocol was based on open-ended questions almost the same for both Head teacher and teacher but from a different perspective. Consequently, the Head of the school and a teacher of the Year 5, were asked among others about the integration of sustainability in their school ethos, about any preference for specific doorways to sustainability that their school has shown, children and parents' willingness to take sustainability on board and children's

potential to turn their parents 'green', fostered by a long-term environmental education programme and the role of family socio-economic background in the families' pro-environmental behaviour.

After having analysed the interviews with the teaching staff of this school, I discerned five different themes to help understanding of the diffusion of sustainability message. These themes are the sustainable Schools Strategy at this school, sustainability as a high-profile message, the role of family background, children's influence on their families' pro-environmental behaviour and motives to make this effort durable.

4.2.1 The Sustainable Schools Strategy at the first case study

Trying to adopt the Sustainable Schools Strategy, in terms of the creation of environmental groups, environmental practices and initiatives and outdoor activities, this school has spent £ 30,000 on outdoor facilities, such as nature gardens and raised beds. It has also participated in the npower environmental scheme 'Climate Cops' (http://www.climatecops.com/) and formed 'green teams' in which children do a lot of work around school. However, the head teacher did not forget to refer to the difficulties she encountered in her effort to do more in terms of sustainability, due to the fact that the school building is not owned by the Leeds City Council but it is rented from a private company. As a result of this ownership regime, some key decisions are not in the school's control but of the private company, which undermines the efforts of school towards sustainability. Specifically, she said

> *"We do try to work with them on more sustainable practices; we do have some problems, such as locally sourcing food [...] but we do recycle the waste. For example, they choose the cheapest vegetables rather than the most sustainable. We are also working with them to try and get solar panels to put them onto the roof. So, we do work with them sometimes on that" (Head teacher, 2011)*

Regarding the pathways preferred by the school, the head teacher said that the school did a lot of work on global dimension, inclusion, waste and school grounds, but on the other hand their efforts in energy and purchasing were moderated because they were only partially in the control of the school but more of the school building owners. Despite that, this school continued to teach energy saving practices in order to foster children applying these practices at home, where their control can be more substantial, something that agrees with the teacher's opinion about habitualising specific pro-environmental behaviours and make them second nature. Characteristically, the head teacher said

> *"...we do work on energy but because the building is owned by a private company (PFI company) it is difficult to move on, so we teach children*

what they may apply at home, because in terms of practices and energy efficiency at school it is more difficult […] So, systemically there are some problems rather than in education of children…" (Head teacher, 2011)

As far as the age group that seem to be more enthusiastic about sustainability and willing to contribute is concerned, the head teacher said that despite the fact that they did work across the school, they found the biggest impact on year 5 children (around 9-10 years old) who digested the whole topic of sustainability better and did not hesitate to ask questions; something with which the teacher agreed. After the age group, both the head teacher and the teacher referred to the themes of sustainability most preferred by students and the school itself, having given emphasis on practical and hands on activities, such as recycling and energy. The teacher also gave two explanations why the themes of energy and recycling are most preferred. She explained that this happens because big schools waste so much energy and children know that and also because such simple and small messages can have a big impact. From the head teacher's point of view, children prefer

"…everything they can have their hands on, meaning practical activities. So, they do like littering picking with the graspers, they do like walking around the schools and reminding the teachers if they live the lights on and turn off the computers and things like that. They do the recycling, so everything practical and hands-on" (Head teacher, 2011)

Concerning the integration of sustainability across the curriculum, the teacher referred to the subjects of maths and geography for data recording and handling and to literacy for writing reports and instruction. She clarified this process with an example.

"We have been doing a topic of water in geography and we've been recording how much water the children use and waste and we look all the processes that the water has to go through to be cleaned again so that it is suitable for human consumption again. So, the children were appalled at how much water they use. They record how much water they used in a week for their family, including glasses of water, tooth brushing, bathwater, showers and the amount of litres they used in a week. So, that was a process of data recording and handling they got involved in and loved it. Hence, it's been mainly in geography, maths and literacy, writing reports and instructions, how to do things, for example how to recycle" (Teacher, 2011)

The teacher also mentioned the benefits of children's engagement in sustainability activities, having emphasised on the development of children's enthusiasm, the feeling of being useful and important, their persistence and their ability to be single-minded. Specifically she said

> *"The main benefit is enthusiasm. Massive enthusiasm and that fact that they never forget. You might have a focus or a focus week when other priorities take over and you've got to remember this, this and this. They never forget. They will keep reminding you; and that is brilliant because children have that ability to be single-minded. If they want to do something they will do it; and that's why it is so good to get children engaged in something like this and make them care and think they can help, rather than say this is a massive problem. Just focusing on one thing like that really helps them" (Teacher, 2011)*

And in saying that, she highlighted the dedication of children to something that attracts their interest, attention, is relevant to their day-to-day life and raise their enthusiasm.

4.2.2 Sustainability as a high-profile message

The head teacher was asked if the fact that the school was acknowledged as Lead Partner in sustainability had any impact on children's environmental achievements and she admitted that the students knew about this accreditation but she was not sure if they remembered it; since they care more about anything that affects their day-to-day life; however both the head teacher and the teacher were quite confident that this environmentally friendly stance was well embedded in their school ethos.

The head teacher believed that sustainability is a high-profile message, trying to get it out to the parents, because 'it is important'. This statement was also mentioned by all the experts interviewed for this research study, underpinning the role of sustainability in school ethos, fostering in that way children to think and understand that

> *"…looking after a planet, looking after a school, looking after each other is really important" (Head teacher, 2011)*

Both the head teacher and the teacher mentioned that also parents understood sustainability as something important and this point of view of theirs reflected on the positive feedback that the school got from parents and parents' trust on what the school did over the years. She highlighted that

> *"The parents are really on board. They like the fact that their children do it. We have not got any negative perception. So, parents don't think it's a waste of time and they should be doing reading and writing. They have registered it is important" (Head teacher, 2011)*

4.2.3 The role of family background

Based on Prof. William Scott's classification of families[12] into three categories, those who care and know how to help, those who care but do not know how to help and those who do not care, the head teacher was asked if she had observed this kind of classification or anything similar. She found it really difficult to say if this categorisation exists in this school, because most of the parents said they care. However she also expressed her concern about how well embedded their interest in or care for the environment is, but they got involved in children's environmental activities on a small level.

> *"I think it could be really difficult. Most of our parents would say that they care […] I think they often forget if those routines are not embedded. When we first brought in the battery recycling holder for example we asked people to bring their batteries or their mobile phones, but if you don't keep reminding people, they forget […] I think they care but it is not an embedded behaviour in most adults in our community" (Head teacher, 2011)*

Concerning this classification, the teacher contended that the school was quite mixed, having observed that the families who cared were more than those who did not, because the school had done a lot of work on school-children-and-family relationships, making parents take issues like sustainability more easily on board. But regarding the reason why some families do not care, the teacher said that this may have been the case not because those families did not care about the environment but because they may have been frustrated with their lives (e.g. they lost their job or never worked).

In effect, the head teacher was not able to say with certainty if the families' background, in terms of income and education level (working-class and middle-class families) made any difference in parents' interest for the environment, having avoided making any generalisations. However, she felt that the middle-class families' agenda were more likely to include the environment. Specifically, she said

> *"Scientifically, I have never ascertained if this is the case. Evidentially, I would not say that, because I have never actually broken it down […] it would not be fair to say a low socio-economic family is not interested. My good feeling is that it is more of the middle-class agenda but I have not got any proof. There is no firm evidence…" (Head teacher, 2011)*

The same view was shared by the teacher who found it difficult to generalise children and their families' pro-environmental behaviours in terms of the socio-economic background, but she also felt that children from well-to-do families (typical middle-class families) seem to consider

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[12] Personal communication with William Scott, January 2011

the environment more than working class families; and she also said that the motives could differ between poor and high income families, for more rational (e.g. saving money) for the former and more altruistic and ethical for the latter.

4.2.4 Children's influence on their families' pro-environmental behaviour

As a school there are no specific activities that aimed at children's influence on their families' sustainable lifestyles; and this influence is small in some ways only; because she believed that even if the children give the message to parents

> *"…they possibly do it for a little bit while it's in their heads. And the learned behaviours of the parents will take over again" (Head teacher, 2011)*

However she thought that this effort had more results outside the school boundaries and she gave the example of paper recycling.

> *"We still ask children to recycle paper and it's a bit of waste of time because they all get to one bin outside and then they get sorted, but we ask them to do so, because we want them to do it at home as well" (Head teacher, 2011)*

On the other hand, the teacher was more positive and optimistic regarding whether children try to influence their friends and families towards more sustainable lifestyles, having acknowledged both sides, those children who behave as passive learners

> *"…there are some children who will never sign up to it just because they probably don't sign up to anything. They are too passive and we need to think of ways to get them engaged" (Teacher, 2011)*

and those children who used 'pester power' in a polite way to influence their families, without having forgotten to mention parents' pester power on children and highlighted its effectiveness if it is coming from both sides.

> *"I think that's the way forward for the children to nag their parents, you know it's ok to nag them in a polite way and don't be disrespectful. Pester power is so important […] parents as well can nag their children to do so. But if it's coming from both sides then it's bound to have an impact" (Teacher, 2011)*

The teacher, also made a very pointed comment having described the change in parents' behaviour in term of the environment as a slow but steady process and having used a term which implied the 'mere exposure theory' of Zajonc (1968)

> *"…'drip, drip, drip effect' when the message is slowly and gradually getting through" (Teacher, 2011)*

However, the teacher also acknowledged the 'recently' formed norm that the head teacher mentioned (see part 'Motives to make this effort durable') as a difficulty that the parents encountered in order to get and absorb the message of sustainability more easily. She said exactly that

> *"When parents were at school there was no focus at all. It was just waste. Everything was wasted. I think there's been a turn around. There was not even recycling in those days when parents were younger. So, I think it's harder for the parents to get on board than it is for the children" (Teacher, 2011)*

Coming to a conclusion, the head teacher admitted that the school had not adopted any specific activity aiming at children's influence on their families, but the example with paper recycling showed slightly the opposite, because children are deliberately asked to recycle paper so as to habitualise this action and transfer it to home, despite the fact that the paper thrown to the paper recycling bin by the kids, ends up in a bigger and general recycling bin. Hence, in my opinion this was a specific action to foster children influence their households' waste management. Another example of specific action is the use of stickers from students at home; mentioned by the teacher

> *"…last year when the children had stickers, a big book of stickers to stick on things, just a post-it which does not cause any damage, for example on the light when it's left on; so many parents came back and said 'they've driven me mad with this sticker, when will you stop giving them stickers?" (Teacher, 2011)*

Finally, through this analysis, two types of children emerged in terms of the uptake of the sustainability message. These categories are the 'passive learners' who just listen to the information without having applied them to theirs and their families' everyday lives. The other type is the 'pesterers' who nag their family members to change their lifestyles.

4.2.5 Motives to make this effort durable

The head teacher underlined children's natural curiosity about the world that makes them keep trying to turn it green, as well as the fact that this is a high profile message heard on the news very often. Having spoken for herself, as a Head of the school, she perceived this effort as an investment in time and effort for the future generations and she believed that

> *"…anything that engages children in learning about anything is worth […] I think teaching children will make big impact […] if you are a responsible human, global citizen, I think that's investing in our future. So, I keep going because I think it's really important" (Head teacher, 2011)*

The teacher also agreed with this point of view, whose feeling of responsibility as a teacher, evenly for the present and the future, made her want to teach children how to think and behave in terms of the environment from a long term perspective because she believed it was important to include the environment in her teaching agenda and she made a point of it. She said

> *"I feel very responsible as a teacher, very responsible for the future of our world really, so as to teach the future generations how to behave and how to think and as teachers, we have got responsibility to teach them what is important. So I do take quite seriously all of these sustainability issues and green issues. I think it is really important not just to do all lessons but to embed it into the whole of the children's learning" (Teacher, 2011).*

Another motive for children that the teacher mentioned was the chance for children to see the world as a system in which they belong and form a bigger picture of it, turning their interests to more collective and altruistic incentives and principles. Characteristically, she said

> *"Children should change their focus off from themselves, start thinking about the world as a bigger picture and stop being self-absorbed at this age and start to become aware of what surrounds them, aware of anything outside Leeds and then England and then as they get older this picture gets bigger and makes them realise that actually they are a part of this world and they've got a part to play in it" (Teacher, 2011)*

Additionally, the teacher stressed the positive relation between students' enthusiasm about the environment and the support they receive at home and if they have been raised considering the environment. This point of view is supported by the view of Gayford[13] where children, especially primary school children, look for adult approval, in order to feel important and useful; as the teacher also highlighted, since the teachers try to make children feel useful and important by assigning works to do in terms of the environment.

In doing so, the teacher argued that this was a way to overcome the problem of passive learners and finally affect children's behaviour outside school and she added that this process was inextricably linked with extent to which sustainability is embedded in school ethos. More specifically, she said

> *"Because of the background of the children, we have a lot of passive learners. They sit and take the information without actually questioning and becoming engaged. So, we are trying to overcome this problem by giving them responsibilities […] rather than just saying 'you need to do this'; by giving them something to engage with which actually makes*

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[13] Personal communication with Dr. Gayford (February 2011).

them feel useful […] I think the amount of children who stop doing that will increase as sustainability becomes more embedded across the whole of school and not just in the lessons (Teacher, 2011).

According to the Consultant of Sustainable Schools[14] sometimes children just repeat what has been said at school or what they have learned, without finally changing their own behaviour in terms of the environment. The head teacher agreed with this point of view saying that some change and some others not, and even those who change, they sometimes do so for a bit, having stressed the role of family as the main source of impact on children's behaviour. She said

"Some do and I think they do for a time. The biggest influence on children's behaviour is home not school […] I also think the biggest chance for change is a long-term thing as they get older and gain more control of their lives. This generation for example will just think recycling is the norm. They won't throw out the rubbish, but at the end of the day I think we have some small impact in some areas in some ways" (Head teacher, 2011)

On the other hand, the teacher described an activity where children had to use some stickers in order to indicate appliances or (including lights) or activities where there were energy and water waste and she emphasised on the positive feedback she got from the parents which proved that the message went home, at least in terms of children's behaviour. She said specifically

"When we are talking about wasting water in particular, so many parents came to me and said 'thank you' because they are thinking about what they are doing now. They are not leaving the tap on when they are brushing their teeth and they are choosing to have a shower instead of a bath and things like that, which children had not thought about doing that before […] this is brilliant because it proves that they actually took it home and they actually did something about it" (Teacher, 2011)

Regarding the families' motives, the head teacher emphasised on the feeling of trust that was developed between the school and the families, since the school consider sustainability important, something which is more common in primary schools than in secondary schools.

"…most of our families from every socio-economic background trust us as a school and they are quite engaged in their children's learning. If we say that it is important, they believe us and support, as just they do with the writing, reading and maths. […] it would be naïve to say that 100% of our parents do it would be naïve to say that they are all passionate. I am sure it goes on a scale […] Generally, I would say that they trust us if

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[14] Personal communication with a consultant of Sustainable Schools (February 2011).

we say it is important. They fundamentally agree and trust us" (Head teacher, 2011)

Besides this type of trust that worked as a motive for families, the teacher also mentioned that saving money worked as a motive as well

"Definitely saving money is a massive issue for example, from turning the lights off, turning the appliances off, saving water etc…"(Teacher, 2011)

However, the head teacher stressed a change that could enhance the effectiveness and durability of this effort, besides children, teachers and families' motives. She expressed her inclination to systems instead of people to ensure and improve general things like energy and waste at a school level. More specifically, she said that

"I'd like to look at a more system level because I think where you have got systems in place to improve sustainability; it is more reliable than relying on people. For example, if I am asking my caretakers to turn off the lights, they might forget it, but if I have got systems in place when they automatically turn off then I know that happens" (Head teacher, 2011)

4.2.6 Conclusions from teachers

This analysis was based on the interviews of the head teacher and a teacher of year 5 of the first school in Leeds. According to the Leeds Education-Sustainability Team, this school embedded sustainability very well in its ethos and integrated it across the curriculum in an effective way. Among others, these two characteristics made the school a member of the Lead Partners, having the responsibility to train other schools to become more sustainable.

Both the head of the school and the teacher were asked about how the themes of sustainability the school had emphasised, giving quite the same answer about energy and recycling, with the head teacher having mentioned some difficulties that the school had in expanding their environmentally friendly stance to other themes of sustainability as well.

Moreover they were asked about the role of families' socio-economic background in theirs and their children's current pro-environmental behaviour and willingness to move to that direction; and both were reluctant to say with certainty if there is any relation but they felt that the high income families were more likely to include the environment in their agenda.

Finally, they both believed that there was some influence from children on their family members toward more sustainable lifestyles, but this influence was small and in different ways. However, the teacher underlined that the effect of this influence was gradual and

steady, having given some examples of the feedback from parents, which was definitely positive.

4.3 Analysis of participant observation

The next step in research design was the participant observation week in both year 5 classes. I was in both classrooms interchangeably full-time for a whole week, when I had the chance to familiarise myself with the school environment, build a relationship of trust between myself and students which would facilitate the progress of the research.

Most importantly, I had the chance to observe how sustainability was diffused through the curriculum, help children with their activities in maths, English, art and other environmental activities. By chance, the week I chose to be present at this school was a "Green" week with additional focus on the environment and sustainability through various activities. My first observation was that children's enthusiasm for participation was obvious, accompanied by satisfactory environmental knowledge, awareness and consciousness. In general, children were familiar with the concept of the three Rs, "Reduce, reuse, recycle", however they had a difficulty in applying these terms in their everyday life, beyond the classic examples or recycling and water and energy saving.

In the first place I gave a short talk to both classes explaining the main goal and the steps of the research study and why children's help was important. The children were really willing to help me and when I mentioned that there are some writers who believe that relying on children to promote sustainability and protect the environment is not very effective since we need action now, and there is a time gap until children get their life in their hands and control their lifestyle completely; their reaction was very intensely negative, showing that they know and understand the power they have to make a difference; or they did not like to be neglected or ignored. In my opinion, the problem of this time lag can be overcome if the children can instil the knowledge and message of pro-environmental attitudes and behaviour to those who participate in planning and decision-making now, and these are the adults and if we talk about children's close environment, then these adults are their parents.

I believe that children can influence their parents and play a significant part in the decision-making processes that take place within the family, and especially as far as the family's sustainable lifestyle is concerned. I think that this is an effective way to influence two different age groups at the same time, achieving short-and-long term results. It also used to be believed that adults like students' parents have the power to influence environmental policies and practices (Sutherland & Ham, 1992).

After that, the teachers asked the students to explain the goal of the research to their parents in order to persuade them to participate in the research and get a higher response and consent rate. The teachers helped me to get the consent forms I needed not only by fostering their students to persuade their family members to engage in the research, but also by talking themselves to the parents in order to explain the goal and importance of the research, trying at the same time to get them on board.

During the lesson, the teachers tried to elicit children's views about the environment and asked students what they would do if they were elected Prime Minister. Four topics were mainly mentioned and these were some movements to save the environment, getting rid of graffiti, reusing and sustainability and taking care of homeless people. Three out of four themes were relevant to the environment directly or indirectly (e.g. graffiti), but it was not very clear to me if these responses were "theirs" or they were "socially desirable" responses. When children were asked to think about a recipe for a perfect world the most commonly mentioned ideas were those of no school, video games and TV. These responses were a stark contrast with those put within the first question, revealing probably students' inmost desires and thoughts. After teachers' probe of what kind of world the children want to play out, the students started mentioning environmental parameters in their answers, such as "a lovely environment", "never run out of energy", "the world lasts forever", walking out and bike riding", "people recycling more often" and "every house should be a sustainable house".

Due to the fact that the week I was present in the classroom was a "green" week, more attention was paid to environmental activities which promoted sustainability. The main focus was on the concept of 'reuse' and the children were showed a short documentary about the landfills in the UK and asked what sort of things they usually see in the landfills. Most of the children mentioned plastic bags and their next thought was that all these bags could be reused and recycled. This was a very successful introduction to the next assignment which was to customise old clothes and reuse them. The children were very enthusiastic, understood completely the goal of this task and some of them made some very good pieces of work.

The next task was again based on the three-fold concept of 'reuse-reduce-recycle' which the children were very familiar with; and this was obvious through the times this concept was mentioned and used in the classroom. This task was a kind of competition for the most sustainable lunch box, in terms of the material of storage, the packaging and the locality of food. What I noticed was that most of the lunch boxes contained reusable or recyclable packaging, fruit, juice, cereal-bars and crisps. The most interesting thing was that children whose lunch-box was not very sustainable, mainly because of packaging, tried to think about ways to reuse this packaging or dispose it in the most environmentally friendly way.

One last task within the framework of the green week was the drawing of the sustainable school logo, where the majority of them included recycling bins and trees, as well as the four Rs which stood for 'Reuse, reduce, recycle, repair". There were also mottos such as "Not in Landfill", "Be Green Forever" and "Save the World". Some examples are the following

Picture 4.3.1 Children's drawings for sustainable school logo

Picture 4.3.2 Children's drawings for sustainable school logo

Finally, regarding how sustainability was integrated in the curriculum, I ascertained that during the week, sustainability was not mentioned in subjects like maths or English, but being present in the classroom only for one week I cannot generalise how the message of sustainability was diffused through the curriculum. But, looking at the students' homework notebooks, they had been assigned to measure and calculate using maths, the amount of water their families consumed at home for every single activity, from teeth brushing to cooking, on a weekly basis and propose solutions how to reduce it. So, this was a way which applied maths and English on sustainability issues.

As a general observation, I had the chance to build a very strong relationship with the students and the teachers, given the short time I was in the classroom. I think that this happened thanks to the teachers and how welcome they made me feel and children's unquestionable interest in the environment. The relationship with the children was so good that we ended up playing together at their PE (physical exercise), sharing experiences from summer holidays and everyday life and various concerns. I am pretty sure that the children were influenced by the way the teachers treated me, making me feel that I am a proper member of staff and not just a visitor. They were very friendly and promoted my work constantly and with excessive enthusiasm.

To sum up, throughout this week of participant observation of year 5, I came to the conclusion that students are aware of the term and principles of sustainability and their interest is centred more on the idea of 3 (or 4) Rs 'Reuse, reduce, recycle, (repair)'without being very specific sometimes on how these actions could be applied in our everyday life. However, they mentioned more energy use, waste management (recycling) and water saving. This came to an agreement with what the teacher and the head teacher said in their interviews, about the doorways of sustainability that preferred most by the school and students; energy, water and waste, because they are more easily understandable and applicable. The students did not mention directly the principles of sustainable consumption, consuming 'less, differently and responsibly', referring for example to local products, less clothes and toys, local or fair trade products. I believe that this stage of the research was very important because it set the foundation for a promising and productive co-operation with the teachers and mainly with the children. And it was also critical because it helped me form a first impression about children's familiarity about environmental issues and day-to-day practices inside and outside the school.

4.4   Analysis of children's questionnaires

The next phase of the research was children's questionnaires. In the first place 50 consent forms were handed out to children to fill in if they agree to participate in the study. I explained every step of the research design and the importance of their contribution. All the students from both classes gave their consent to participate and fill in the self-completed questionnaires in the first place, which included open- and closed-ended questions, about their own and their families' pro-environmental behaviour as well as their perception about their influence on their families' sustainable lifestyles. For the closed-ended questions, the facial expressions / smiley and sad faces were used; based on the Likert scale, to help children express their viewpoints, thoughts and feelings (Kellet, 2005). Finally, the questionnaire was piloted by children at the same age and the time needed for its completion was about 15-20 minutes.

This section is vital because it provides us partially with the answers to the main research question, about children's influence or not on their parents' sustainable lifestyles. I found out that according to children there is some positive influence to this direction, but the children did not feel as confident about their influence as they felt about their knowledge about the environment, especially in comparison to what they believed about their parents' knowledge.

4.4.1 Children's perception of and reported knowledge about the environment

This section talks about children's satisfaction about the quality of the environment they lived in and their reported knowledge about environmental issues in general. The importance of this part lies in the fact that children's reported knowledge relates to the perception they had about their influence on their parents' sustainable lifestyle, and their confidence in their knowledge and ability to have an impact on their families' pro-environmental behaviour. In general, most of the children from both groups said they knew 'quite a bit' about the environment with a positive tendency to higher levels of reported knowledge. Moreover, the children who said they knew more than 'quite a bit' about the environment were more satisfied with the quality of the environment they lived in.

The whole population of year 5, who completed the questionnaires, was 50 children and then 17 of them finally participated in all stages of the research after their parents' consent. As a result, the analysis will be for two sets, one for the whole population and one for the 17 students. The majority of students (22 students-44%) were neutral regarding their satisfaction with the environment they lived in, but 50% of them in total said they were 'happy' and 'very happy'. This seems to be a positive first sign which would be very interesting to combine it with their knowledge about the environment in order to see how objective or not their responses were.

From the subset of 17 students 29.4% (five) said neutral, 41.2% (seven) happy and 17.6% (three) very happy. This possibly means that the children whose parents agreed to participate in the study acknowledged a more positive attitude at home in terms of the environment, which could explain their parents' willingness to support the study.

Before I examine the variables in a more complicated way, I focus on children's reported knowledge about the environment. From the population of 50 students, 38% (19) said they knew 'quite a bit', 28% (14) 'a little' and 26% (13) 'quite a lot' and from the subgroup of 17 students, again the majority of them (8-47.1%) said they knew 'quite a bit' and six in total (35.3%) said they knew 'quite a lot' and 'a lot'. This tells me that the children of the subgroup might have been better informed about environmental issues, which may make their opinion about the quality of the environment more reliable.

How much children feel they know about the environment
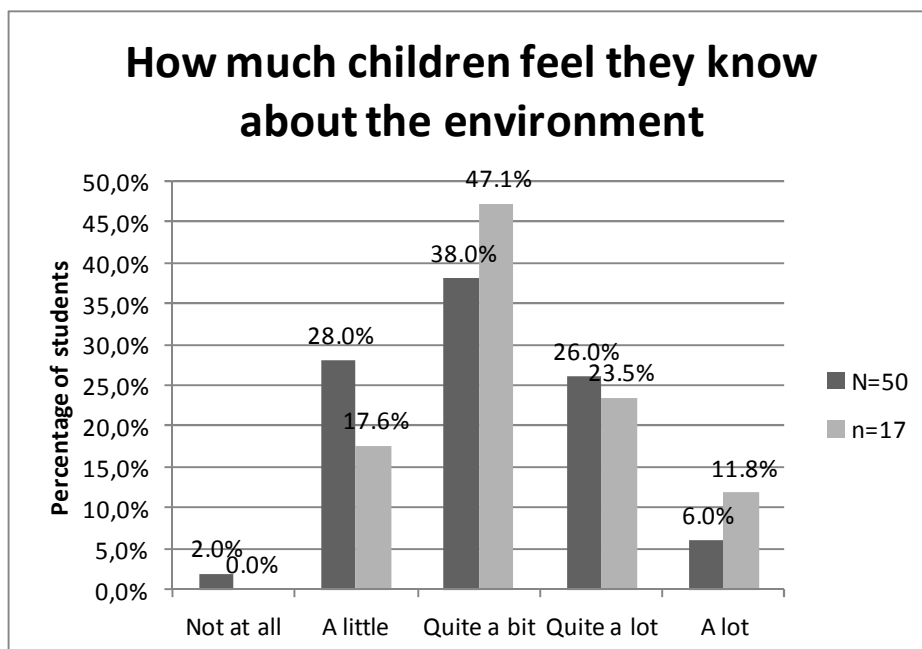
Chart 4.4.1.1 How much children feel they know about the environment

Combining the variables of children's satisfaction about the environment and children's reported knowledge about the environment for the whole population, I can say that the majority of students (38%) said they knew 'quite a bit' about the environment and this percentage comes 10% from those who were 'very happy or very satisfied', 12% 'happy or satisfied' and 16% 'neither happy nor unhappy'. 28% of the children said they knew 'a little' about the environment and this view was mainly supported by children who were neither happy nor unhappy. But it is very interesting that the children who said they knew more about the environment were those who were happier or more satisfied. Another example is that the majority of children from the sub-group (47.1%) believed they knew 'a lot' and this percentage came mainly from those who felt happy or satisfied (17.6%) and neutral (17.6%). Finally, the children who said they knew 'a lot' about the environment were mainly those who said they were 'very happy or very satisfied' and 'happy or satisfied'.

4.4.2 Children's views about sustainability at school

This section presents how children understood their school's effort to be a sustainable school and how they felt their school tried to influence their parents' pro-environmental behaviour indirectly. This part is very important since it relates to one of the research questions, trying to find out if and how a school which has adopted the National Framework for Sustainable Schools managed to diffuse the message of sustainability at students' homes. I found out that the ways the school used and the children understood better were: sending letters to parents, bringing experts to school and teaching children directly how to teach their parents. Moreover, most of the children were positive about this effort having used the adjectives 'interesting' and 'useful' to characterise it. Finally, the majority of children from both groups were 'very happy or very satisfied' with their effort to be environmentally friendly within the school boundaries.

This behaviour of theirs will be compared at a later stage with their respective effort at home, since there have been views both from experts and teachers, that there are children who take the knowledge from school but they do nothing when they go home.

Regarding the ways which the students understood and mentioned and their school used to promote the message of sustainability, the following table is giving a clearer picture. In order to end up to these ways, I first read all the questionnaires to find the most commonly mentioned ways by the students.

How the school diffuses sustainability at home according to students				
Large group (N=50)			Small group (n=17)	
Turn off lights	23.5%		Teach children to teach parents	23.5%
Send letters to parents	22.0%		Bring experts at school	17.6%
Other	20.0%		Not applicable	17.6%
Teach children to teach parents	20.0%		Recycle at home	17.6%
With talks and readings at school	14.0%		Send letters to parents	17.6%
Not applicable	12.0%		With talks and readings at school	17.6%
Bring experts at school	12.0%		Other	11.8%
Recycle at home	10.0%		Turn off lights	11.8%
Turn off other appliances	6.0%		Turn off other appliances	11.8%
Eco-club	4.0%		School trips	5.9%
Gardening club	2.0%			
Green-day	2.0%			
School trips	2.0%			

Table 4.4.2.1Ways of school's contribution

From the table above it is obvious that the children noticed that the school focused more on sending letters to parents in order to diffuse the message of sustainability, by bringing experts at school, teaching children to teach their parents and asking them to turn off the lights. As the head of the school and the teacher of year 5 had said in their interviews, the doorways of energy, waste and water were most preferred by the school and students and this is proven by the table above. If the percentages of 'turning off lights' and 'turning off other appliances' are added, then the percentage of saving energy in general is the highest. As far as the subset of 17 children is concerned, they gave more importance to the information and knowledge they gained from experts and how they could use them to teach their parents, something that the whole population did as well.

These were the ways in which the children believed that the school promoted the message of sustainability, and now the following table is going to show how children characterised their school's effort.

The majority of children found this effort interesting, useful and exciting; but the children of the sub-group (n=17) seemed to enjoy it more, according to the percentages for the adjectives 'cool', 'interesting' and 'exciting'. Generally speaking, the children were in favour of sustainability and their school's effort to diffuse it; and along with the following graph we can see how the students assessed their own behaviour at school.

The majority of children (57.1% of the whole population and 68.8% of the subgroup of 17) were 'very happy or very satisfied' with their pro-environmental behaviour at school, which agrees with their characterisations as interesting, exciting and useful, for the school's effort to promote sustainability.

16 out of the 17 students of the subgroup felt 'happy' and 'very happy' with their effort to be environmentally friendly at school, which may relate to their parents' willingness to participate in the research, which in turn may have been perceived as a kind of cooperation with the school.

This paragraph showed that the children understood most of the ways that the school used to diffuse the message of sustainability at home, which proves that school's efforts to this direction were fruitful at least partially. But beside that, the children also showed a positive attitude towards the environment not only regarding what the school itself did but also how happy or satisfied they were with their effort to adopt a pro-environmental behaviour at school.

4.4.3 Children's perception about everyday family life in relation to the environment

In this section I present if and how children understood that their families tried to protect the environment, as well as information from their everyday life, such as what the children did more often with their parents and what they enjoyed doing with their parents. In doing so, I want to see children's preferences for outdoor activities and any possible discrepancies between what they did and what they enjoyed. Moreover, I will present and analyse the frequency of discussion about the environment reported by children as part of their everyday family routine, as well as who was that who initiated a discussion about the environment. Hence, I found that most of the students said that their families tried to protect the environment mainly through water and energy saving and recycling; but unfortunately most of the students from both groups said that they rarely or never discussed about the environment with their parents.

When the students were asked if their families tried to protect the environment, 70% of the whole population felt that their families did try to protect the environment and answered

'yes', 22% 'no' 6% 'a little' and the statistics from the subset of 17 students say that 70.6% answered 'yes', 11.8% 'no' and also 11.8% 'a little'.

According to students' viewpoints, the families of the subset seem to have had slightly better percentages than the whole population. The interesting thing is that the children had answered this question before their parents gave their consent. As a result, I could say that the families who were interested in participating in the research and tried to protect the environment, always according to children's perceptions, seemed to be proportionally more than the families of the whole population. This may be a sign of their willingness to get involved in the research.

After students' responses regarding whether they said that their families tried to protect the environment, they mentioned the ways they understood that their families did so. But it is also very important to clarify, that children's responses may indicate what they understood as ways of environmental protection at home and not necessarily what their families did. These responses were classified according to their frequency and the most commonly mentioned are included in the table below. However, I need to highlight that some of the ways or actions mentioned below are beyond children's control, such as double-glazed windows. But the question was about the ways in which the family as a whole tried to protect the environment.

What children said their families did to protect their environment				
Large group (N=50)			Small group (n=17)	
Activity	Percentage			Percentage
Turn off the lights	32.0%		Turn off the lights	29.4%
Not applicable	26.0%		Turn off appliances	29.4%
Turn off appliances	24.0%		Recycling	17.6%
Recycling	16.0%		Not applicable	17.6%
Save water	10.0%		Other	11.8%
Save electricity	10.0%		Plant trees and plants	5.9%
Plant trees and plants	6.0%		Walk instead of using the car	5.9%
Other	6.0%		Energy-saving bulbs	5.9%
Take care of rubbish and littering	6.0%		Save electricity	5.9%
Walk instead of using the car	2.0%		Save water	5.9%
Energy-saving bulbs	2.0%		Double-glazed window	5.9%
Double-glazed window	2.0%			
Collect rain or bathe water for plants	2.0%			

Table 4.4.3.1 Families' environmental protection ways

Again, electricity, water and waste (in the form of recycling only) were most mentioned by students, which was in agreement with the doorways of sustainability that the school tried to promote. The differences between the two groups are not significant. However, actions which are relevant to sustainable consumption, like composting, using public transport, buying bio-products, reduction of consumption and so on; were not mentioned.

The majority of children in both groups (28% "never" and 46% "rarely" for N=50 and 29.4% "never" and 35.3% "rarely" for n=17) rarely discussed about the environment with their parents and not any students from both groups said 'always'. Regarding who started the discussion about the environment at home, most children said that they did initiate the discussion and then their mothers. Another big percentage (24% for N=50 and 35.3% for n=17) said that nobody initiated the discussion about the environment in agreement with the high percentages of the low frequencies from the chart above. However, this percentage does not mean that these families do not have a pro-environmental attitude and behaviour.

When the environment was in the families' 'agendas' for discussion the motives were the lights and other appliances which were left on and the guests at school. In some way, this indicates the main focus on energy saving and how well it had been perceived by children in a way that made them feel comfortable to start a discussion with or a 'teaching' process for the family members.

Motives for discussion about the environment				
		N=50		n=17
	Not applicable	38.00%	Not applicable	35.30%
	Lights and other appliances have been left on	26.00%	Lights and other appliances have been left on	23.50%
	Guests at school	14.00%	Other	23.50%
	Other	12.00%	Guests at school	17.60%
	School activities and talks	8.00%	After hearing other people talking	11.80%
	School trips	6.00%	School trips	5.90%
	After hearing other people talking	4.00%	School activities and talks	5.90%
	After watching a TV programme	4.00%	After watching a TV programme	5.90%
	After a walk in the forest and see trees cut down	2.00%	After a walk in the forest and see trees cut down	5.90%

Table 4.4.3.2 Motives for the discussion about the environment

4.4.4 Children's pro-environmental behaviour at home

At this point I think it is useful to see children's pro-environmental behaviour at home, since there is a probability that some children are 'passive learners' taking the information and knowledge from school but when they go home they do nothing. Maybe they do not discuss for example about the environment or they do not even try to apply this knowledge to their everyday home life. In this school, most of the children said they were 'happy' (42% for N=50 and 47.1% for n=17) and 'very happy' (26% for N=50 and 35.3% for n=17) with their pro-environmental behaviour at home and it will be very interesting to see at a later stage if this effort to be environmentally friendly themselves was translated to influence on their families'

pro-environmental behaviour. This perception of children decreases the possibility of them having gone home and did nothing to protect the environment and promote sustainability.

The differences between their behaviour at school and home were very slight (32% "happy" and 56% "very happy" for N=50 and 23.5% and 64.7% for n=17 respectively), confirming that there is a consistency in their behaviour and a transfer of sustainability at home, at least for themselves. Comparing the consistency of children's pro-environmental behaviour at school and at home, I found out that there was a general uniformity in children's behaviour in terms of the environment at home and school, towards a positive direction, with only minor discrepancies which indicated a better picture within the school boundaries. This can be justified by the fact that sustainability was embedded in the school ethos favouring at the same time a more positive pro-environmental behaviour at school.

When children had to answer a question about what their family members did to protect the environment and promote sustainability, in effect they were asked to enumerate the environmentally friendly practices that they understood that their families had adopted in their day-to-day life. What they mostly mentioned were recycling, energy/electricity saving, and water saving; without causing any surprise, since the doorways of energy, waste and water respectively were encouraged by school and preferred by students and parents.

Parents' pro-environmental behaviour		
	N=50	n=17
Recycle	32.0%	41.2%
Save water	16.0%	17.6%
Save energy/ electricity	6.0%	5.9%
Energy saving bulbs	4.0%	11.8%
Turn off lights	32.0%	29.4%
Turn off other appliances	32.0%	23.5%
Reuse	4.0%	5.9%
Tidy up litter	8.0%	5.9%
Plant trees and other plants	4.0%	5.9%
Compost	4.0%	0.0%
Walk	2.0%	5.9%
Reduce	2.0%	5.9%
Reduce waste	2.0%	5.9%
Turn off the tap	2.0%	0.0%
Nothing	6.0%	0.0%
Other	6.0%	11.8%

Table 4.4.4.1 Parents' pro-environmental behaviour

Finally, when the children were asked to rank the level of how environmentally friendly they felt their family life was, in a scale from 0 to 5 (5 was the highest level), the majority of students of the whole population (38%) gave them grade 3 and the majority of students of the

subgroup (35.3%) gave grade 4, which may have been related to their parents' willingness to participate in the research and their possibly higher environmental awareness.

4.4.5 Children's perception of their influence on family sustainable lifestyle

The main question in children's questionnaire was about how they thought they had influenced their family members to make their lifestyles more sustainable. In effect, what they said was compared to their parents' responses in order to find if there is any consistency on how both sides feel the flow of influence from children on parents. The group of students I focused on at this stage was basically that of the 17 students, because their answers were compared to their parents' responses. What I found very important here is that there was a positive but moderated tendency for children's influence, since most of them said they had influenced their parents 'quite a bit' but the same number of students in total said 'quite a lot' and 'a lot'.

Children's perception about their influence on their families' sustainable lifestyle													
		Not at all		A little		Quite a bit		Quite a lot		A lot		Total	
Total	Count	1	*1*	20	*3*	13	*6*	9	*2*	6	*4*	49	*16*
	%of total	2.0%	*6.2%*	40.8%	*18.8%*	26.5%	*37.5%*	18.4%	*12.5%*	12.2%	*25.0%*	100.0%	*100.0%*

N=50
n=17

Table 4.4.5.1 Children's perception about their influence on their families' sustainable lifestyle

In the table above it is shown that 40.8% of the whole population said that they had influenced their family members only 'a little' and 26.5% 'quite a bit'. However, it is very interesting that 37.5% of the subgroup said they had done so 'quite a bit' and a 25% said they had influenced their parents 'a lot'. The children of the subgroup seemed to have been more confident regarding their part in families' sustainable lifestyle.
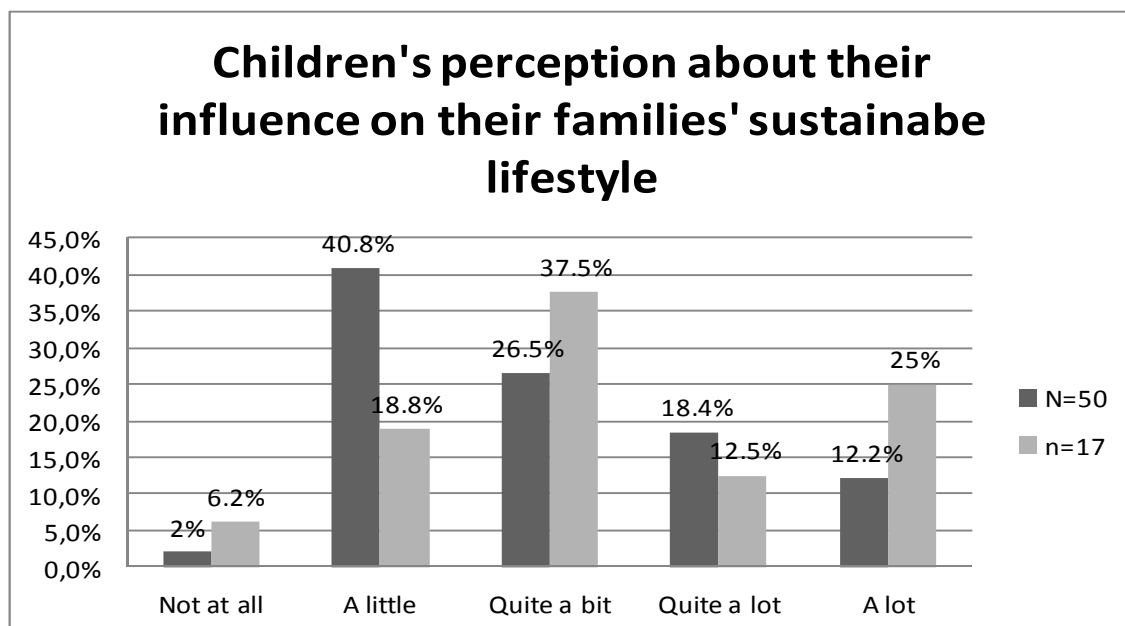
Chart 4.4.5.1 Children's perception about their influence on their families' sustainable lifestyle

Comparing children's reported knowledge about the environment and influence on their parents we can see that most of the students reported a moderate knowledge and a moderate level of influence as well. However, it is quite important to see that there were also students who reported a high level of knowledge and the same number also reported a high level of influence. After this comparison, I can infer that children seemed to be quite aware of their ability to influence their parents; based on their knowledge they reported themselves. Moreover, it would be very interesting to see more specifically who said what.

Children's knowledge about the environment * Children's influence on family's sustainable lifestyles (n=17)								
			Children's influence on family's sustainable lifestyles					
			Not at all	A little	Quite a bit	Quite a lot	A lot	Total
Children's knowledge about the environment	Not at all		0	0	0	0	0	0
	A little		1	0	1	0	0	2
	Quite a bit		0	2	2	1	3	8
	Quite a lot		0	1	1	1	1	4
	A lot		0	0	2	0	0	2
	Total		1	3	6	2	4	16
		% of Total	6.3%	18.8%	37.5%	12.5%	25.0%	100.0%

Table 4.4.5.2 Children's reported knowledge and influence (n=17)

What is interesting here is that four students said they had influenced their parents 'a lot' and three of them also said that they knew 'quite a bit' about the environment and only one said 'quite a lot'. Almost the same applies for the students who said they had influenced their parents 'quite a lot'. But it is very interesting that the students who said they knew 'a lot' said that they had influenced their families only 'quite a bit'. On the contrary, there were three children who said they knew 'quite a bit' and at the same time they reported that they had influenced their families 'a lot'. After this short description, what impresses me is that the children who reported they knew 'quite a lot' and 'a lot' were not very confident to influence

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their families to the same extent and children who said they knew 'quite a bit' felt more confident for the impact they had on their families' sustainable lifestyle. What we can assume here is that the children who reported a moderate level of knowledge were more aware of the actual level of knowledge represented by the title 'quite a bit', giving probably more objective and realistic views. It would be also very interesting to combine children's reported knowledge with their responses when they had to compare their knowledge to their parents' knowledge about the environment.

Children's reported knowledge about the environment * Children's perception about their parents' knowledge (n=17)								
			Children's reported knowledge compared to parents'					
			Much less	Somewhat less	About the same	Somewhat more	Much more	Total
Children's knowledge about the environment	Not at all	Count	0	0	0	0	0	0
	A little	Count	1	0	0	0	1	2
	Quite a bit	Count	0	0	2	3	3	8
	Quite a lot	Count	0	0	2	0	2	4
	A lot	Count	0	0	0	1	1	2
	Total	Count	1	0	4	4	7	16
		% of Total	6.3%	18.8%	37.5%	12.5%	25.0%	100.0%

Table 4.4.5.3 Children's reported knowledge over parents' knowledge (n=17)

As we see from the table above, 11 students in total said they knew 'somewhat more' and 'much more' than their parents and most of them were students who had said they knew 'quite a bit', implying in that way that their parents' knowledge was possibly of low level, even lower than theirs. Moreover, only two students who had said that they knew 'quite a lot' also said that they knew 'about the same' as their parents and both of the students who had said they knew 'a lot' about the environment said that they knew 'somewhat more' and 'much more' than their parents. Hence, the students appeared quite confident in their self-reported knowledge.

The next step was to ask students if they felt that they knew more about the environment than their parents and examine how confident they felt with their knowledge and able to transfer their knowledge and experience as something new for their families to follow. From the table below, we can see that 38.8% of the population said they knew 'about the same' their parents and 34.7% 'much more'. On the other hand, the subgroup seemed to be more confident, since 43.8% said they knew 'much more' than their parents.

		Much less		Somewhat less		About the same		Somewhat more		Much more		Total	
Total	Count	3	*1*	0	*0*	19	*4*	10	*4*	17	*7*	49	*16*
	Total	6.1%	*6.2%*	0.0%	*0.0%*	38.8%	*25.0%*	20.4%	*25.0%*	34.7%	*43.8%*	100.0%	*100.0%*

If the children said they know more about the environment than their parents

Table 4.4.5.4 If the children said they knew about the environment more than their parents

In my opinion it would also be very useful to have a table which combines the variable of children's influence on their parents' sustainable lifestyle and their perception about the level of their environmental knowledge in comparison to their parents' knowledge. For example, one interesting finding is that seven students said they knew 'much more' than their parents but only two of them said they had influenced their parents 'a lot'. Two of them said 'a little' and three said 'quite a bit'. And even two of the three students who said they had influenced their parents 'a little' had said that they knew 'much more' than their parents. Hence, what I can infer from this table is that despite the children were confident in the knowledge they believed they had, they were not equally confident in their ability to influence their parents' sustainable lifestyles.

Children's influence and knowledge over parents' knowledge

			Children's influence on family's sustainable lifestyle					
			Not at all	A little	Quite a bit	Quite a lot	A lot	Total
Children's knowledge over parent's knowledge	Much less	Count	1	0	0	0	0	1
	Somewhat less	Count	0	0	0	0	0	0
	About the same	Count	0	1	1	1	1	4
	Somewhat more	Count	0	0	2	1	1	4
	Much more	Count	0	2	3	0	2	7
	Total	Count	1	3	6	2	4	16
		% of total	6.3%	18.8%	37.5%	12.5%	25%	100.0%
		N=17						

Table 4.4.5.5 Children's influence and knowledge over parents' knowledge

In the table above, we see that most of the children who knew 'much more' than their parents had influenced them 'a little', showing their possible lack of confidence in their knowledge, contribution and power. Further analysis is taking place in comparison with parents' perceptions about their children's knowledge and influence.

4.4.6 Conclusions

In this section we found that most of the children claimed that they had influenced their families' sustainable lifestyles somehow, without though being confident in their ability to do so; which could also agree with the medium level of environmental knowledge they reported they had. The discussion about the environment is a pre-requisite for the influence and knowledge transfer to take place, but most of the children said that they 'rarely' or 'never'

discuss with their parents about the environment, but when it happened it was usually the children those who initiated the discussion.

Finally, there was a consistency in children's pro-environmental behaviour in different contexts, at school and home, where they claimed to be 'happy' and 'very happy' with their effort to be environmentally friendly; characterising at the same time the whole action for sustainability as 'interesting' and 'useful'; with the main focus on energy and water saving and recycling, both at school and home.

4.5 Focus group with children-Phase 1

The first phase of the focus group took place at the end of the participant observation week, only with the 17 students whose parents had consented for themselves and their children to participate in the research. The session took place in a free classroom and lasted about one hour. The students were all together in the same classroom at the same time, but they sat in smaller groups on different tables. The main goal of this focus group was to engage students into the research design asking them to write some of the questions that their parents would be asked during the interviews, always relevant to three main topics. Through this stage I managed to find out where the children focused on through the way they structured the questions and the topics of the questions themselves.

More specifically, the children focused on their parents' understanding of the importance of the pro-environmental behaviours and the process needed to achieve these behaviours. They also wanted to know if their parents had a deeper and detailed knowledge of various environmental issues and practices. Finally, the children made it clear that they wanted to know if their voices had been heard by their parents, what their opinion about them was and if they finally managed to have an impact on their parents. At this point only the findings will be discussed and analysed, since the methods which have been used and their effectiveness have been discussed in the chapter about the methodology.

Some general conclusions before I start describing and analysing the process are that in the aforementioned topics, there was a repetition of similar questions which indicates the cooperation within the group and also there was a focus on the three doorways of sustainability, energy, water and waste, including the 3 R's (reuse, reduce and recycle). However, there were some questions about transportation and use of public means of transport.

The first topic was about what the parents know regarding the environment. The questions which were voted as 'very important' were

"Do you reuse things instead of throwing them away?"

"Do you walk or ride your bike or use the bas instead of using your car?"

But there were a lot of questions around energy saving and 'turning off the lights and other appliances'.

The next categories of 'important' and 'less important' questions included questions around similar topics but the wording was not good enough to elicit as much information as possible.

The next topic was about what parents know about the environment. There were some very interesting questions that have not been voted to be included in the interview protocol, maybe because there were some similar ones but slightly better or they were very general or so. Some interesting questions I spotted were

"Do you understand how to save the environment?"

"Do you understand how recycling works?"

In my opinion, these questions show that children took for granted that their parents knew that they had to save the environment or they had to recycle, as general knowledge, but they wanted to know if their parents understood how do it. They seemed to care more about the process rather than the knowledge of the problem, which was probably considered already known.

Starting from the category 'less important' questions, we can see again the emphasis on the process with questions like

"What do you know about saving energy?"

"Do you know how to recycle waste properly?"

But it is also very interesting that one of the questions in that category was about the problem of environmental degradation with a future perspective. Despite the fact that this question was voted as a 'less important' one, I included in the interview protocol a question with the definition of sustainable development and how parents saw the future perspective implied in the definition. Children's question was

"What will happen to the environment?"

Moving 'upwards' to the important questions, children wanted to know not only what did their parents know about the environment but also how much they knew about the environment. Another interesting question was

"Do you think you know how to save as much energy as your child?"

Showing children's confidence on their pro-environmental behaviour, as a motive to make their parents see them as role models regarding energy saving.

Finally, two of the very important questions were

> *"Do you know the difference between recyclable and non-recyclable things?"*

> *"Do you know more than children about the environment?"*

Focusing on the details, reasoning and goal of recycling; and comparing and checking the difference in environmental knowledge between adults and children; implying though that children knew more.

The last topic was about what parents' thoughts about their children were and I clarified that the children should come up with questions that could elicit parents' opinion about their knowledge about the environment, their pro-environmental behaviour and most importantly about their role as promoters of the sustainability message at home.

Initially, the children had a difficulty to understand the main goal of this topic and with simple words I tried to explain that they should make up questions that would shed light on parents' opinions about their children's pro-environmental behaviour and knowledge. Starting again from the 'less important questions', I can say that the majority of those questions centred on attitudes

> *"Does your child care about the environment?"*

> *"What does your child think about the environment?"*

And behaviour

> *"Does your child turn off the lights?"*

> *"Do you think your child does something to protect the environment?*

> *"Does your child know how to recycle?*

The important questions were rather based on children's knowledge themselves and in comparison with their parents' knowledge. For example

> *"Does your child know a lot about it?"*

Maybe because they looked for adults' accreditation, believing that they already knew a lot or somewhat less. The second question which was voted as important was

> *"Do you know more about the environment than your child?"*

Finally, the questions which were voted as very important questions were very much to the point, focusing on children's influence on their parents' sustainable lifestyle and pro-environmental behaviour, giving emphasis on the behaviour itself and the behaviour learning process. The questions were

"Has your child had any effect on you on how to help the environment?"

"Has your child taught you anything new to help the environment?"

In a nutshell, this first phase of focus group with students, made me understand where children gave emphasis on and what they would like to know from their parents regarding their stance towards the environment, and finally they had their voices heard, through collective participation in research design and democratic processes. In my opinion, this was a good opportunity for children to develop their critical thinking in order to make up those questions that could bring more information on the surface.

The following pictures depict the final results
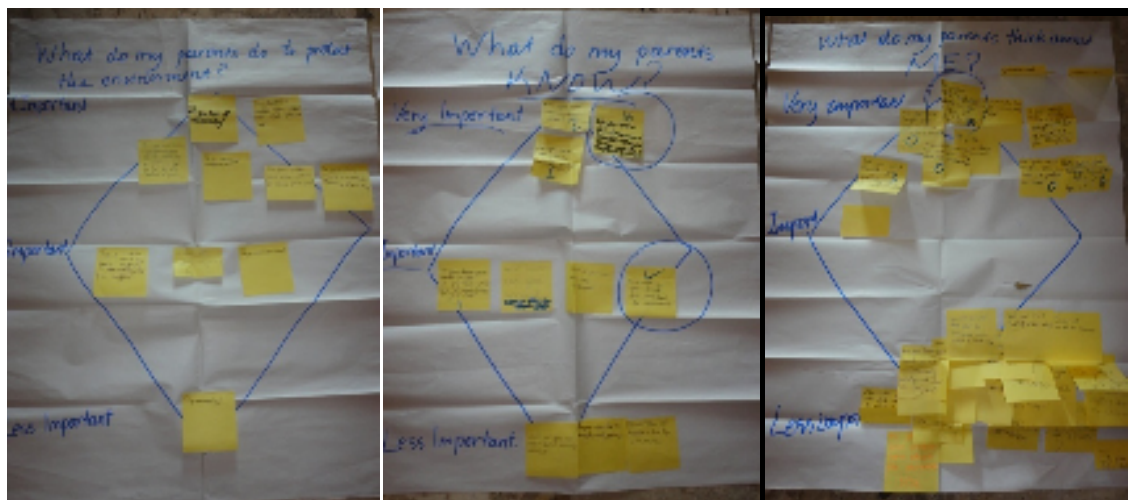
Picture 4.5.1 Decision-making charts

4.6 Analysis of the interviews with the parents

As described in a previous section, 17 families gave their consent to participate in the research allowing their children to involve in the next steps of the study and themselves to be interviewed and fill in a self-completed questionnaire with demographic questions, which showed that they were families whose mean number of members and children was four and two respectively, mean annual family income about 38,500 pounds while the UK household average income per year is £29,100[15] (in 2008-2009); and mean number of cars 1.4 (not practically correct but it shows a tendency for more than one). Finally, the average qualification level of both parents was somewhat less than college or university and mainly connected with work.

The initial goal was for all the adult members of the families to be interviewed in their houses but finally only the father or the mother came to school for the interview. This option of the

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[15] After taking account of all taxes and benefits, this is the average final income of household (Source: Office for National Statistics, "The effects of taxes and benefits on household income, 2008/2009).

family represented (average age 37.5 years old) was given to parents in order me to increase the response rate, since the majority of parents were a bit reluctant in the beginning to take part because of the lack of time. 16 mothers and only one father came to school for the interview. Some parents gave more than one answer to the same question and the number of responses exceeds 17 and to some others some parents did not give any response lower the number below 17.

This section gives us information initially about the families' socio-economic background, then about their consumption habits guided by the principles of sustainable consumption and finally about their children's potential influence on them, regarding the adoption of more sustainable lifestyles. The findings showed that there was some influence from the children on the parents and the school played its part to this direction; however, the issues of cost, price, budget and time were mentioned as major deterrents for them to further this effort to a more environmentally friendly way of living.

The interview started with a question about how much the parents said they knew about the environmental impact of their lifestyles. From a scale form "not at all" to "a great extent" 58.8% answered "somewhat" and 41.2% "very little". Due to high percentages for the lower levels of the scale, I asked if there were any difficulties in getting more information and some answers were not very outright. Six people gave positive answers about the availability of information but one parent stressed the importance of knowing what you are looking for and another one the need to absorb the information. Another category of answers centred on the difficulty in understanding the information, mentioned by two parents; and another one on ignorance, expressed by two parents, either because they did not know what to believe when there is not any unanimity on experts' views or because they had the impression that they did things but they did not know if these things were environmentally friendly.

Another category of answers was that of 'lack of guidance' where two parents mentioned the lack of guidance and explanation on 'how to do it better' and 'whom to ask for help'. These responses showed a willingness to do more for the environment and to improve their pro-environmental behaviour; but they found it difficult to get help for things they cannot do alone. In the same line, three parents mentioned the lack of campaigns which could give people easy access to information. Finally, three parents were indifferent because of lack of time and lack of interest in environment.

When they were asked about potential ways to overcome these difficulties, problems or inefficiencies, most of them mentioned media and internet, but there was also an answer which highlighted the role of learning and teaching process, saying that

> *"If you target the younger generation, they are more inclined to do something about it. And if they can stream it through the family and pass on the information..." (Mother)*

Afterwards, the parents were read the definition of sustainable development (UN, 1987) emphasising the future meaning of the definition and they were asked if they had ever thought that the quality of the environment and their actions now can affect the quality of life of their children and their children's children; and if this thought had prevented them from doing things that harm the environment or encouraged them to break environmentally harmful habits.

Seven parents answered that they had thought about this future perspective and they were positive to change and improve their pro-environmental behaviour or they had already started doing things to that direction.

> *"...that's true. I have thought about that, because obviously I think about my children and I do what I can now..." (Mother)*

> *"Yes, and obviously, if there is anything we can do to stop harming the environment and consequently their future, we will do it..." (Mother)*

There were also two participants who had thought about it but not in the very long run or on a big scale, and there was one more parent who said that they had not thought about it in that way and one who just agreed with this future meaning as an idea.

> *"Not maybe as far ahead as children's children, but for my children and for now yes...maybe we do what we can and maybe we don't look such far forward" (Mother)*

> *"I suppose if we don't look after what we've got, in the future there won't be anything for the children..." (Mother)*

Finally, there was also a parent who agreed with this point of view but on the other hand expressed the difficulties of staying committed; and finally two parents had never thought about it before.

> *"Yes, I mean the idea is always there, but being able to do it it's a different thing. I work everyday and because of lack of time, when I need to get to school, I take the car because it's fast and convenient..."*

When the questions were more consumption-oriented, the parents were asked if they tended to satisfy their needs or their wants first when it came to purchasing. 64.7% of the parents answered that their priority was their needs, 23.5% said wants and 11.8% said both. Because of the fact that the percentage of parents who thought about their needs first was relatively high, agreeing with the sustainable consumption principles; they were asked about the priority they gave to the environment when they decided to buy something. Eight of them said that

the environment was 'medium' priority and six said 'low' priority. It would be interesting to see if it is combined with the high percentage of needs satisfaction.

			Environment as priority for buying				
			Not a priority	Low priority	Medium priority	High priority	Total
Motives for buying	Needs	Count	1	1	8	1	11
		% within Motives for buying	9.1%	9.1%	72.7%	9.1%	100.0%
		% within Environment as priority for buying	50.0%	16.7%	100.0%	100.0%	64.7%
		% of Total	5.9%	5.9%	47.1%	5.9%	64.7%
	Wants	Count	0	4	0	0	4
		% within Motives for buying	0.0%	100.0%	0.0%	0.0%	100.0%
		% within Environment as priority for buying	0.0%	66.7%	0.0%	0.0%	23.5%
		% of Total	0.0%	23.5%	0.0%	0.0%	23.5%

Table 4.6.1 Motives for buying & environment as a priority for buying

From the table above we can see that from those who tended to satisfy their needs first, 72.7% considered the environment of 'medium priority' when it came to buying. If we see it from different perspective, we can observe that all of the parents who regarded the environment as a 'high' and as a 'medium priority', tended to satisfy their needs first. On the other hand, 100% of those who tended to satisfy their wants first, regarded the environment as 'low priority' when it came to buying. As a result, we can ascertain a consistency in the answers showing a kind of link between motives for purchasing and environment as a priority. However, primary conclusions should be accompanied by the part that prices play in families' decision making process regarding the purchasing choices.

The parents were asked if the price was a higher priority than the environment when it came to purchasing decisions. The total number of affirmative answers was seven, where some of the reasons were that the environmentally friendly products are more expensive and because the constrained budget compelled them to "go for the cheapest" (Mother). In the same line, one parent said they bought what they needed and was best for them, without considering the environment. However, the price was considered for some things but not for all things. Another two parents said that probably the price was a higher priority than the environment without being certain and another three said that this happened sometimes, because it mainly depended on the circumstances. Another moderated view was that price and environment were equally considered. In combination with the previous question about how highly ranked the environment was as a priority, we can ascertain an agreement since about 47% considered the environment of a medium priority and about 47% of the parents answered outright that

the price mattered, leaving the rest 53% to moderate answers fluctuating between price and environment. Finally, there was also a very interesting stressing made by a parent who saw the price and cost as a deterrent factor for a pro-environmental behaviour.

> *"If the things that could make the country or the world greener were cheaper, everybody would it. We need to try and reduce the cost in the things that make the world and environment better" (Father)*

After parents having been asked about the part that the price played in families' purchasing decisions, they were also asked what sort of things they may think about in terms of the environment when they buy something. In the first place, the participants could not think of any example and then I prompted them by mentioning the packaging and air miles of the products. The answers were given separately by topic and in combinations as well. As a result the packaging was mentioned more often (eight times) by the parents, stressing their effort not only to limit it at the first stage by preferring products with less packaging, but also at the stage of disposal by choosing products with recyclable and reusable packaging. Additionally, a parent said that attention was paid to packaging if it is recyclable, not while the product was being bought but after that, at home. A preference for local food was mentioned four times and the four main reasons were the taste and quality of the local products because they are fresher, the support to the environment and the support to local producers and community. On the other hand, it was mentioned equally that packaging and air miles were not considered by some parents. Specifically one mother stressed the importance of the content rather than of packaging.

> *"I try to buy healthy stuff...I don't look much at the packaging but what's inside" (Mother)*

Finally, it was observed that some parents did and some others did not care about packaging, but either way they did not care about the air miles. In effect, the air miles were not highly ranked on parents' list of environmental concerns which is justified by the fact that they were not mentioned often. What I realised through the discussion I had with them is that they focused more on hands-on issues and things that they can control directly, and mainly what they can do to moderate the impact of products, especially after buying. In my opinion, this comes to an agreement with what experts, teachers and children said through their interviews and questionnaires, that the 'theme' of waste is preferred most by people because it is more easily manageable as a hands-on 'task'.

After these probing questions, I asked the parents to choose from a scale to show how they felt about their current lifestyle and the environment and describe their current lifestyle.

Most of the parents said that they 'would like to do a bit more to help the environment' while about their current lifestyle, the majority said that they 'did quite a few things that are

environmentally friendly'. In my opinion this is a positive sign which depicts parents' willingness towards a pro-environmental behaviour and sustainable lifestyle. They acknowledged that they 'did their bit' and they felt they could do more. For a more detailed picture, the following table matches exactly what the people answered when they were asked about their current lifestyles and feelings.

Feelings about the current lifestyle	Current lifestyle
B	B
B	D
A	C
B	B
B	B
A	C
C	B
B	C
B	F
B	B
B	C
B	D
B	D
C	C
C	D
A	C
B	D

Feelings about the current lifestyle		Current lifestyle	
I'm happy with what I do	A	I'm environmentally friendly in everything I do	A
I'd like to do a bit more	B	I'm environmentally friendly in most things I do	B
I'd like to do a lot more	C	I do quite a few things	C
Don't know	D	I do one or two things	D
		I don't really do anything	E
		Don't know	F

Table 4.6.2 Paired responses for current lifestyles and feelings for current lifestyles

From the table above we can see that there was definitely a positive trend and willingness for the parents to improve their pro-environmental behaviour, but I would say that this positive trend is rather moderate and there are examples which can justify it. To be more specific, there were five parents who said they were environmentally friendly in most things they did and four of them also said they would like to do 'a bit' more and only one said 'a lot' more. But in general, this is a positive sign, showing that despite the fact that they tried to do be environmentally friendly, they still want to improve their behaviour, but only by changing few things. However, as we go down to lower levels of pro-environmental behaviour, we will notice that this positive trend is moderate because either they are happy by doing 'quite a few things' or they are not willing to 'do a lot more' but only 'a bit more' when they already did 'quite a few things' or 'one or two things'.

Without being able to generalise and come to concrete conclusions due to the small size of the sample, however I can only observe that in the table below we can see that there is no clear distinction between families with different income in terms of their perception of their current lifestyle, since for example one of the families that did one or two things that were environmentally friendly had annual family income between £50,000 and £59,000 and again only one of the families which were environmentally friendly in most things they did had annual income between £15,000 £19,999. These observations remind us of what the teachers and the experts said that we cannot conclude with certainty if the financial status of the families relates to their pro-environmental behaviour.

If the mean family income is about £38,500 we see from the table below that five people said that they were environmentally friendly in most things they did, and four of them reported family income below the average family income. However, we cannot say that they did so from the environmental perspective, but possibly because of the cost and the potential for saving money by adopting some pro-environmental behaviours. But again, if we see the number of people who said that they did 'quite a few things', we will see that three out of six were below the average family income and three were above; and the picture is almost similar for those who said that they did 'one or two things'. The important thing is that we cannot be sure what the motivational power was and if finally they are the income and budget constraints that drive people to pro-environmental behaviour or it is their environmental concern per se.

This assumption can be proven also by the table 4.6.4, where most of the parents (eight) said that the environment was a medium priority when it came to buying and five of them had family income lower than the average income; but from those who said that the environment was a low priority (six), three were below the average family income and three above. In effect, we can see that regardless the family income; the families were driven more by the cost and saving money perspective rather than by the environmental perspective; since some environmentally friendly practices can help them save money.

		Current lifestyle				
		I do one or two things that are environmentally friendly	I do quite a few things that are environmentally friendly	I am environmentally friendly in most things I do	Don't know	Total
Household annual income	2,500-4,999	0	1	0	0	1
	10,000-14,999	0	1	0	0	1
	15,000-19,999	1	1	1	0	3
	20,000-24,999	0	0	1	0	1
	25,000-29,999	1	0	0	0	1
	35,000-39,999	1	0	2	0	3
	40,000-44,999	0	1	0	0	1
	45,000-49,999	0	1	0	0	1
	50,000-59,999	1	0	1	0	2
	60,000-74,999	1	1	0	0	2
	Don't know	0	0	0	1	1
Total		5	6	5	1	17

*Table of: Household annual income * Current lifestyle*

Table 4.6.3 Income and current lifestyle

		Environment as priority for buying				
		Not a priority	Low priority	Medium priority	High priority	Total
Household annual income	2,500-4,999	0	0	1	0	1
	10,000-14,999	0	1	0	0	1
	15,000-19,999	1	0	2	0	3
	20,000-24,999	0	0	1	0	1
	25,000-29,999	0	1	0	0	1
	35,000-39,999	0	1	1	1	3
	40,000-44,999	0	1	0	0	1
	45,000-49,999	0	0	1	0	1
	50,000-59,999	0	2	0	0	2
	60,000-74,999	0	0	2	0	2
	Don't know	1	0	0	0	1
Total		2	6	8	1	17

*Table of: Household annual income * Environment as priority for buying*

Table 4.6.4 Income and environment as a priority

Afterwards, I wanted to check how environmentally conscious they were and if they understood if they had done something that harmed the environment and how they felt. So, they were asked if they had ever had guilt feelings for doing things that harmed the environment, and six parents said 'yes', four 'no', three 'sometimes' and one said 'don't know'. The main reasons of these guilt feelings were if recyclable things are thrown into the general waste bin, which was mentioned three times, the food waste, the use of aerosols and sprays and the use of car for walkable distances.

After the guilt feelings, the parents were asked about the 'drop in the ocean' feelings, that is to say, if they think that it is not worth doing something to help the environment if others do not do the same. The majority of parents (11) said that they should still do their bit, because every little bit helps, and other's behaviour did not prevent or stop them from doing what they thought right. However, one parent mentioned that if you feel that you are not 'a drop in the ocean' then, you may try harder to do a bit more. They said exactly

> *"...but if you feel that everybody does it, you should probably do a bit more" (Mother)*

Three more parents agreed that others' behaviour would not be a deterrent factor for them to do their bit, because it had to with how good they felt with themselves having done their bit.

> *"No. I suppose if I do what I can; at least I know I have done my bit" (Mother)*

Finally, there were also three parents who admitted that they were partially influenced by others' behaviour, feeling sometimes that they were only 'one person on Earth', and they expressed their concern about how many people are on board and how many are not, in order not to counteract a positive behaviour and effort.

In order more information about families' everyday environmentally friendly actions to be elicited, the parents were asked to say what they usually did towards a more sustainable lifestyle. The most common answers were energy saving by turning off the lights and electrical appliances, using energy saving bulbs and switching off the sockets. The second most commonly mentioned action was recycling for example, household waste, clothes, glass bottles and plastic. The third most common action was water saving by turning off the taps, having shower instead of bath, installing a water-meter, collecting the rain water for toilet and plants and so on. Other examples of pro-environmental behaviours mentioned by parents were walking instead of using the car, especially for short journeys like going to school, trying to use the public means of transport, composting, growing food and vegetables, reusing plastic bottles or plastic carrying bags, scrap paper and bath water for flowers; reducing the amount

of paper, food left-overs, household waste and packaging and turning off the heating when it was not really necessary or setting it on the absolute minimum standard.

Other than just enumerating the behaviours that the families adopted, I should also mention that the main deterrent factor mentioned by parents was the lack of time to learn, try and change. But the interesting thing is that somebody would expect that the cost would be a deterrent factor as well, but the parents driven by a rational choice motive, said that they saved electricity and started walking more giving up the bus because of the cost. Characteristically, they said

> *"We save electricity because of the cost" (Mother)*

> *"I don't use the bus for short distances because of the cost. It costs a lot of money just to go down the road" (Mother)*

When the cost was mentioned as a factor no matter to which direction, then the parents were asked if they believe that it is only worth doing environmentally friendly things if they save them money. The majority of the parents (13) gave a negative answer closer to an altruistic behaviour rather than to a rational one, and additionally, the habitualisation of action was mentioned as well. For example some of them said

> *"I recycle my bottles and this does not save my any money…" (Mother)*

> *"No, I'd like to think I am trying. Money is obviously a factor but not just for money" (Mother)*

> *"I do it automatically now. It just comes to me naturally now" (Mother)*

> *"We should do it all the time and not only if it saves you money" (Mother)*

On the other hand, there were also those parents (three) whose point of view was based more on the rational choice concept, saying that the cost was the main reason of doing environmentally friendly things.

> *"It's cheap for me and the cost is the main reason" (Mother)*

> *"We do things because they save us money" (Mother)*

Now, regarding the habitualisation of the pro-environmental behaviours, the parents were asked if it was hard for them to change their habits to be more environmentally friendly. The opinions were equally distributed and 8 parents said that it was hard

> *"Habits are always hard to break" (Mother)*

Eight more parents said that it was not hard for them to change their habits, for example because they were very adjustable or they did simple things that did not change their everyday routine drastically.

> *"It's just little and simple things you can do in the house" (Mother)*

> *"No, because I don't do all those which get me out of my way" (Mother)*

Finally, one parent gave an ambivalent response, saying that it depends on the action itself and the infrastructure. Specifically, that mother said

> *"Not for recycling, but I think for car is a bit difficult. You've got used to doing certain things in certain ways, but recycling is simple. The bins are there and there is no reason why we can't recycle. We don't have to go anywhere or do anything different. You just put things in a different bin" (Mother)*

After that, in order to check parents' willingness to change their lifestyles and make them more sustainable, I asked them if they believed that any changes they made to help the environment needed to fit in with their lifestyles; and the majority (11) said yes, because it is easier if they fit in, because they are busy and because none of these changes put them out of their way.

> *"To be honest, it needs to be something you can easily do. If it's easier....yes. Like recycling. You do it anyway" (Mother)*

> *"Yes. We are quite busy so we can't really do too much" (Mother)*

Next the parents were asked if they had tried to talk to family and/or friends and persuade them to adopt more sustainable lifestyles. The negative responses were more common than the affirmative ones with more emphasis on discussions within the family environment; and showing at the same time their reluctance to diffuse the message of sustainability outside the home environment.

4.6.1 Factors of influence for pro-environmental behaviour

The next and most important part of the research was to find out the factors that influenced parents' pro-environmental behaviour and finally ascertain if children are one of these factors. Again, as it has been mentioned before, the methodology followed to get parents' answers has been described thoroughly in the methodology chapter, and here only the findings are being presented.

Finally, only nine parents mentioned their children as a source of influence, either after a probe by me or on their own, before the list with some potential sources of influence had been handed out. However, the following table shows the most commonly mentioned sources of influence, which were TV, the desire for their children to live in a better world, the feeling of care for themselves and where they live and the ambition to help future generations to live in a safe environment. We see that the quality of children's lives and environment in which they live in the long run concerned parents; influencing their parents indirectly, just through their existence.

After that, the parents were asked if and what they had started doing to protect the environment after their children's encouragement and suggestions. Initially, there were parents (five) who said that they did nothing, not because of indifference or ignorance to what their children said, but because they had already been doing what their children suggested before they did so. Another reason was that sometimes children's ideas and suggestions were not very practical and doable. But from those who said that their children made them change their habits, the most commonly mentioned pro-environmental behaviours were recycling, energy saving by turning off lights, appliances and plugs; and water saving. Then walking more, composting and gardening followed. But this was interesting because it justified exactly what the experts and teachers had said in their interviews about the doors of sustainability that are most preferred by students (energy, water and waste). Additionally, these findings are really consistent with what the children thought the families' environmental protection ways were.

However, there were some remarks about the difference between adults' and children's motives and about the durability of the change in children's behaviour.

> *"We've started using less water and they've got an obsession with turning plugs off. Although my husband always does that for money. The children are really enthusiastic not leaving anything on stand by...I think his motives are definitely less altruistic than children's motives" (Mother)*

> *"The kids leave the lights on. When they did the climate exercise at school, they came back home from school telling me all the time to turn the lights off, but after a while they came back to 'normal'" (Mother)*

According to the parents, everything started when children came after school discussing and trying to enforce what they had learnt at school. School visitors were also a good reason for children to go home and start applying the suggestions of the experts at home. Finally, other motives or actions that initiated this process were children's participation in school clubs (e.g. gardening club), their homework (e.g. total water consumption at home) and school trips.

4.6.2 Parents' perceptions about their children's influence

After having checked children's perception of their influence on their families' pro-environmental behaviour, I need to check what parents believed about this kind of influence, exerted by children. Hence, this section focuses on the comparison of perceptions about children's influence on their parents' pro-environmental behaviour and I found that there was a consistency regarding a moderate influence but on the other hand there were some discrepancies regarding the very high and low levels of influence. However, in general we can come to the conclusion that there was some positive perceived influence.
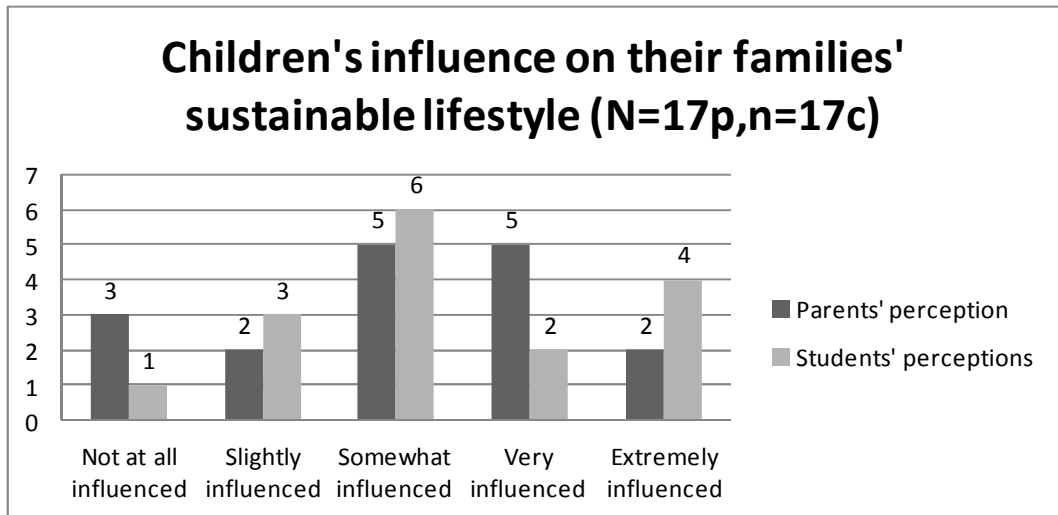
Chart 4.6.2.1 Children's perception about their influence on families' sustainable lifestyle

As we see from the chart above, the parents said that they have been equally 'somewhat' and 'very' influenced by their children in order to make them adopt more sustainable lifestyles. It is interesting to see that only one child said they had not influenced their parents, but for parents this number is much higher (three). It is also very interesting that quite a big number of parents said they had been very influenced by their children while the respective number from children's perspective was very low (two). But, even for children who felt confident about how much they had influenced their parents, their parents did not have the same opinion, since only two said they had been extremely influenced. This may have happened because parents were strict with their children's effort or children were not able to assess their actual impact of their effort.

However, the majority of children and parents agreed that they had and had been influenced respectively 'quite a bit' by their children, indicating a positive impact. Interestingly, more children appeared to believe that they had influenced their parents at least a little than the number of parents who said so; but on the other hand, more parents said they had not been influenced by their children at all. So, what I can infer from the chart above is that children and parents estimated the level of influence differently, with the parents being more moderate that children when it came to high level of influence and more absolute when it came to the lowest one. Possibly, this inconsistency may have been caused by differences in knowledge level about the environment.

On the other hand, in total the number of parents who said they had been 'very' and 'extremely' influenced by their children is almost the same as the total number of students who also believed so. And even more interestingly, the total number of parents and students who reported influence for the categories 'somewhat influenced' to 'extremely influenced' is exactly the same (12), which shows a consistency in general for the existence of influence but not for its 'intensity'. For example, if we examine the categories of influence individually, we

will see that there is not a consistency either for low levels of influence or for high levels. The children who said that they had influenced their parents 'a lot' ('extremely' in parents' scale) were much more that the parents who had said the same and children seemed to overestimated their influence on their parents. But on the other hand, much more parents said that they had been 'very' influenced ('quite a lot' in children's scale) by their children and surprisingly, children did not feel confident enough to say the same for themselves and their own influence.

Finally, in general, this inconsistency between children's and parents' responses regarding the level of influence individually can also be seen in the table below, where only in two cases children and parents agreed on the level of influence. However, the children were not very confident in their influence on the parents' pro-environmental behaviour, since there were more parents who said that their children's influence was higher than the children themselves believed for their influence on the parents. Moreover, the discrepancies between children's and parents' responses were bigger in those cases where the children had said that they had influenced their parents more than the parents believed. And it is also very important to mention that these discrepancies mainly exist in the high levels of influence, showing that those students probably overestimated their ability to influence. On the other hand, the fact that there were more parents who said their children had influenced them more than the children themselves said about their influence, shows that those children lacked of confidence in their own ability to influence their parents.

Adding to the previous argument, the following table will help us have an even better picture of the trend of influence, trying also to find if the level of influence the children reported related to the level of influence the parents perceived.

	Child	Parent	Not at all	A little	Quite A bit	Quite a lot	A lot
			Specific children and parents' perception of influence				
1	2	**3**	Not at all influenced	Slightly influenced	Somewhat influenced	Very influenced	Extremely influenced
2	3	**1**	1	2	3	4	5
3	2	**1**		Absolute consistency		**2**	
4	5	**1**		Children better		**6**	
5	1	**3**		Parents better		**8**	
6	5	**5**		One level of difference		8	
7	4	**5**		Two levels of difference		5	
8	2	**4**		Three levels of difference		**0**	
9	4	**2**		Four levels of difference		**1**	
10	5	**4**					
11	5	**3**					
12	2	**3**					
13	3	**4**					
14	3	**4**					
15	3	**4**					
16		**2**					
17	3	**3**					

Table 4.6.2.1 Match of children's and parents' reported level of influence (N=17p, n=17)

In effect, in the table above I matched the responses of the children with what their parents said specifically, and I found that there was an absolute consistency between children and parents only in two cases and the number of parents who reported a better level of influence was bigger than that of children. To be precise, four parents said they had been 'very influenced' by their children while their children had not reported such a high level of influence. However, the majority of discrepancies were of one level (e.g. the children said they had influenced their parents 'quite a lot' while their parents said they had been 'extremely influenced'). There were also some two-level discrepancies, but fewer than the one-level, which shows a kind of consistency in their perceptions or at least a kind of converged way of thinking and understanding.

Regarding the existence of any kind of relation between children's confidence and parents' perception of influence; from our data we cannot come to the conclusion that the more confident the children felt the more influenced the parents said they were, since only one student said that they had influenced their parents 'quite a lot' and their parents said that they had been extremely influenced. Moreover, about those parents who said that they had been very influenced by their children, the children reported a moderate level of influence such as 'a little' and 'quite a bit'.

4.6.2.1 The role of knowledge

As we saw before, the children were asked how much they felt they knew about the environment and they were also asked to compare their reported knowledge to the knowledge they believed their parents had about the environment. In a sense I found that there is a kind of relationship between knowledge, confidence and influence which is explained below. In general, most of the children said they knew 'quite a bit' about the environment with a positive tendency to higher levels of reported knowledge. In this section I will examine the role of children's confidence, resulting from their reported knowledge about the environment, in their influence on families' sustainable lifestyles.

In order to avoid repetition of tables and charts, every time I need to refer to a table or chart from previous sections I will use their number. Therefore, following a string of variables which starts from children's reported knowledge about the environment we will try to find out how we result in how parents perceived their children's influence on them in terms of sustainable lifestyles.

In table 4.4.5.2 we saw that the majority of students (n=17) (eight) said they knew 'quite a bit' and six in total said they knew 'quite a lot' and 'a lot'. This tells me that the children might have been well informed about environmental issues, which may make their opinion about the quality of the environment more reliable. The next step was to ask students if they said that they knew more about the environment than their parents and examine how confident they felt with their knowledge and able to transfer their knowledge and experience as something new for their families to follow.

Because in the previous tables we related the variables only in pairs, now I am going to present a table with the three variables described before, matching exactly what the children said about the level of knowledge they claimed they had, the comparison of this level with their parents' knowledge and at the same time the level of influence they said they had on their parents' pro-environmental behaviour.

	Children's reported knowledge	Children's Vs Parents' knowledge	Influence
4	A little	Much more	Quite a bit
5	A little	Much less	Not at all
17	A little		
2	Quite a bit	Much more	A lot
3	Quite a bit	About the same	A little
6	Quite a bit	Much more	A little
7	Quite a bit	Somewhat more	A lot
8	Quite a bit	Somewhat more	Quite a bit
10	Quite a bit	About the same	Quite a bit
13	Quite a bit	Much more	A lot
14	Quite a bit	Somewhat more	Quite a lot
9	Quite a lot	About the same	A lot
11	Quite a lot	Much more	Quite a bit
12	Quite a lot	Much more	A little
15	Quite a lot	About the same	Quite a lot
1	A lot	Much more	Quite a bit
16	A lot	Somewhat more	Quite a bit

Table 4.6.2.1.1 Combination of variables (n=17)

From the table above we can see that the children were more confident in their knowledge about the environment compared to that of their parents than they were in their influence on their families' sustainable lifestyles. As we can see, most of the students rated their knowledge at least one level higher than that they believed their parents had, as well as few said that they knew about the same as their parents and only one said they knew less. On the other hand, six students were confident both in their knowledge and influence, mainly those who said they knew 'quite a bit'. It is very interesting to notice that two of the students who said they knew 'quite a lot' and the two students who said they knew 'a lot' said also that they knew more than their parents but at the same time they said that they had influenced them 'a little' or 'quite a bit'. I think that this last comment makes children's lack of confidence in their ability to influence their parents' pro-environmental behaviour even more clear, especially when it is observed in children who reported high level of knowledge about the environment.

Another way to check children's confidence is by checking their reported knowledge, always in comparison to their parents' level of knowledge.

A high percentage of parents (ten out of 17) claimed low (seven parents said 'very little') and medium (ten parents said 'somewhat') levels of knowledge. On the other hand children's percentages are distributed from the low level of 'a little' to the highest one 'a lot'; indicating a broader understanding of the environmental issues. Comparing what both parents and children believed about who knows more about the environment, we have the following chart.

Children's and parents' perception about children's knowledge compared to parents' (N=17p, n=17c)

(y-axis: Number of students and parents, 0–8)

	Much less	Somewhat less	About the same	Somewhat more	Much more
Parents' perception	0	5	7	1	4
Children's perception	1	0	4	4	7
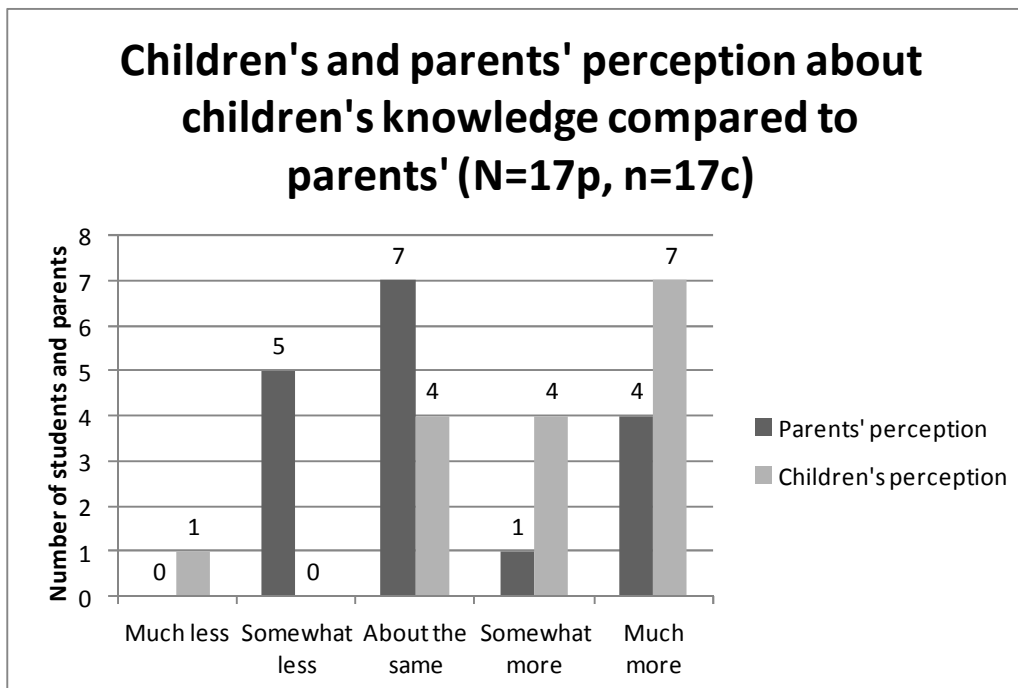
Chart 4.6.2.1.1 Children's and parents' perception about children's knowledge compared to parents' (The children and parents were asked if they felt that the children knew more than their parents about the environment) (N=17p, n=17c)

The majority of children said they knew more than their parents while the majority of parents said they knew about the same. We see again this inconsistency, maybe because of children's lack of confidence or unwillingness to communicate their knowledge and show that it is up-to-date and useful. So these findings agree with what the literature says about weak knowledge transfer and influence (Sutherland & Ham, 1992; Leeming et al, 1997) and intense but inconsistent and unreliable transfer of environmental information from students to parents (Vaughan et al, 2003; Sutherland & Ham, 1992).

Now, I am presenting a table which matches children's perception about their parents' knowledge about the environment and parents' respective perception.

	Children's Vs Parents' knowledge (Children's perception)	Children's Vs Parents' knowledge (Parents' perception)	Influenced by children (Parents' perception)
5	Much less	Somewhat less	Somewhat
3	About the same	Somewhat less	Somewhat
10	About the same	Somewhat more	Very
9	About the same	About the same	Not at all
15	About the same	About the same	Extremely
7	Somewhat more	Much more	Extremely
8	Somewhat more	About the same	Very
14	Somewhat more	Much more	Slightly
16	Somewhat more	Much more	Very
4	Much more	About the same	Very
2	Much more	Somewhat less	Somewhat
6	Much more	About the same	Somewhat
13	Much more	About the same	Very
11	Much more	Much more	Somewhat
12	Much more	About the same	Not at all
1	Much more	Somewhat less	Not at all

Table 4.6.2.1.2 Comparison of reported knowledge and influence (N=17p, n=17c)

From the table above we can see that eight children out of the 16 that finally answered, said that they knew more than their parents about the environment and they were confident enough, and only four children had exactly the same perception as their parents in terms of their knowledge compared to parents' knowledge.

In general, there is an inconsistency between children's and parents' responses because only in two cases children and parents agreed on the level of influence. However, the children were not very confident in their influence on the parents' pro-environmental behaviour, since there were more parents who said that their children's influence was higher than the children themselves believed for their influence on the parents. Moreover, the discrepancies between children's and parents' responses were bigger in those cases where the children had said that they had influenced their parents more than the parents believed. And it is also very important to mention that these discrepancies mainly exist in the high levels of influence, showing that those students probably overestimated their ability to influence. On the other hand, the fact that there were more parents who said that their children had influenced them more than the children themselves said about their influence, shows that those children lacked confidence in their own ability to influence their parents.

Regarding the existence of any kind of relation between children's confidence and parents' perception of influence; from our data we cannot come to the conclusion that the more confident the children felt the more influenced the parents said they were. This is because only one student said that they had influenced their parents 'quite a lot' and their parents said that they had been 'extremely influenced'. Moreover, about those parents who said that they had been 'very influenced' by their children, the children reported a moderate level of influence such as 'a little' and 'quite a bit'. However, even from the table above, we can say that the children were more confident in their knowledge about the environment than they were in their ability to influence their parents; and at the same time the parents believed more in their children's ability to influence them than the children themselves. The table above shows in general that, children's confidence in knowledge is being transferred to the parents but in the form of influence, even if the latter do not share the same opinion about the level of knowledge. A possible explanation may be the lack of feedback the children receive from their parents regarding the adoption of their ideas or suggestions; or the frequency of discussion about the environment.

We see that parents have high percentages at the low levels of knowledge but on the other hand children's percentages are distributed from the low level of 'a little' to the highest one 'a lot'; indicating a broader understanding of the environmental issues.

It would also be very useful to see what topics are discussed with the children at home and if the environment is included in the family 'agenda'. So, most of the parents said that they discussed about anything and everything, but mostly about school. News and what is happening in the world were another common answer and general topics about the environment such as recycling, not wasting paper, allotments and plants were also mentioned.

In terms of parents' perception regarding their children's influence related to the family annual income, we can see from the table below that the parents who said they had been 'extremely influenced' by their children were those who had annual income lower than the average 38,500 pounds, however there were parents with very low family income who said they had not been influenced by their children at all, in terms of the environment, justifying in a way what the experts had said, about difficulties in life and different priorities. On the other hand, half of the parents with higher income than average said they had been 'somewhat influenced' and the rest said 'very influenced'. In essence, we cannot say with certainty that a higher family income may give more possibilities to children to persuade their parents and get them on board in terms of pro-environmental behaviour.

Household annual income * Children's influence on parents						
		Children's influence on parents-parents' perception				
		I am not at all influenced	I am slightly influenced	I am somewhat influenced	I am very influenced	I am extremely influenced	Total
Household annual income	2,500-4,999	0	0	0	0	1	1
	10,000-14,999	0	1	0	0	0	1
	15,000-19,999	1	0	0	2	0	3
	20,000-24,999	0	0	1	0	0	1
	25,000-29,999	1	0	0	0	0	1
	35,000-39,999	1	0	1	0	1	3
	40,000-44,999	0	0	0	1	0	1
	45,000-49,999	0	0	1	0	0	1
	50,000-59,999	0	0	2	0	0	2
	60,000-74,999	0	0	0	2	0	2
	Don't know	0	1	0	0	0	1
Total		3	2	5	5	2	17

Table 4.6.2.1.3 Parents' perception about children's influence   on parents and family income (N=17)

The extent of the interest for the environment can be judged by the frequency of the discussions about it, so the parents were asked how often they discussed with their children about the environment
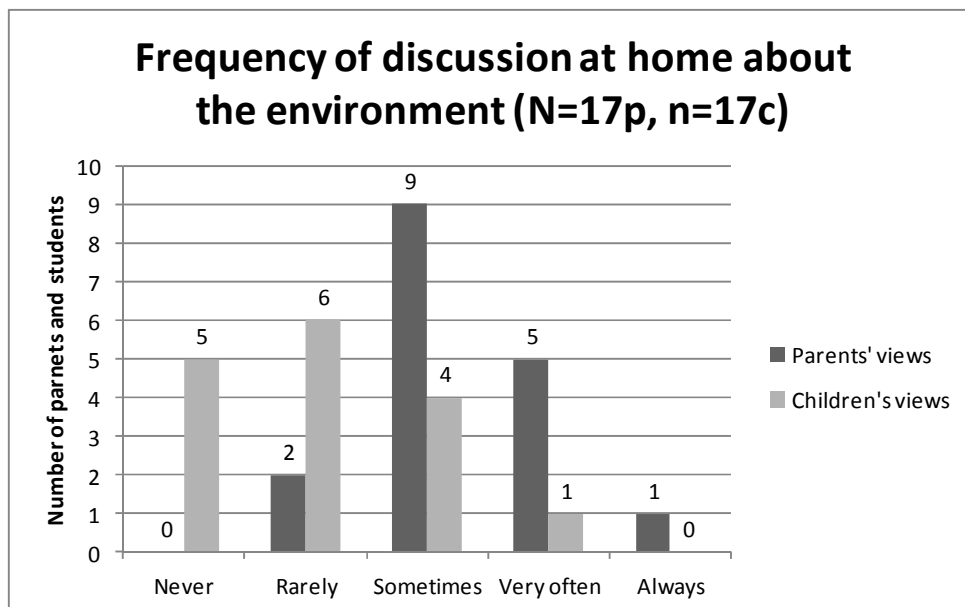
Chart 4.6.2.1.2 Frequency of discussion at home about the environment (N-17p, n=17c)

Again, we see that there is not any consistency between children's and parents' answers. Probably the latter wanted to give more socially desirable answers, or they had different understating and perception of what discussion about the environment means. Because of the fact that children had long conversations about the environment at school, they regard this duration as normal, so anything shorter may not be considered a proper discussion. In contrast with parents for example who may talk about the environment fostered by something they

had seen in the news. According to parents' responses, the majority of times where children discussed with their parents about the environment were initiated by children; a viewpoint that agreed with what children answered in their questionnaires. Parents themselves and both age groups were mentioned only three times in total as those who initiated a discussion about the environment. So, when the discussion about the environment was finally initiated by children, the parents managed to discover the motives behind that. In essence the parents felt that the discussion started from something that the children had heard on the news, something they had been taught or said at school, something they had read, or in order to show what they had learnt or what they knew, in order children to tell their parents what to do and finally, because they wanted to do something good for the environment.

Afterwards, I think it would be useful to check if the parents had perceived and understood the ways that the school used to make children live more greenly. So, the parents first noticed and mentioned the school trips, thorough teaching and/or discussions, experts' visits at school and the green days. Some more hands-on ways were also mentioned such as showing children how to do certain things, through gardening club and finally by the way they were taught.

> *"…if they are taught something with passion, they do come home and put it into place, because they are really enthusiastic and excited…"*
> *(Mother)*

Finally, the parents were asked if they said that their children's school had affected their lifestyles indirectly to become more sustainable, and the majority of parents said yes (ten out of 17), five said no, one said 'maybe' and one 'a little'. This relates to my research questions since this study is a kind of evaluation of the National Framework for Sustainable schools but based on its ability to influence parents' sustainable lifestyles indirectly through their children.

According to the parents, this influence occurred mainly thanks to assemblies, through teaching and trips, homework and gardening; and these ways were considered effective because

> *"…I think that if you do it with the children it's always effective. They can be very stubborn. They are not going to let you ignore what they're saying. My children everything all the time and make me feel bad if I don't do what they are saying" (Mother)*

and because

> *"...they make it fun and children enjoy it and they are happy to do it"*
> *(Father)*

On the other hand, there was the viewpoint that

"...they should do something in order the children not to forget, maybe every week. To become part of their day-to-day life. Not learning about something and then forget" (Mother)

4.6.3 Conclusions

This section in effect answers the main research questions about children's influence on their families' sustainable consumption from the parents' perspective as well as it compares what both students and parents and said about this influence and other sources of influence. We tried to examine if there was any kind of consistency in their responses to which could confirm in some way the existence of impact on parent's pro-environmental behaviour. Moreover, this section also answers if and how the National Framework for Sustainable schools has influenced the families' sustainable lifestyles indirectly through schools; and all these were also examined through the prism of parents' and children's environmental knowledge.

Driven by the research questions, the findings showed us that the majority of both children and parents claimed that there was some positive influence where 12 people in total from each group contended 'somewhat' to 'extreme' influence. However, in terms of knowledge, the children were more confident in their knowledge, especially comparing to their parents' knowledge, than they were in their ability to influence their families' sustainable lifestyles. The main sources of influence that the parents mentioned were the TV, the ambition for a better world for their children, the feeling of care for themselves and where they live, the respect for the environment, the newspapers and magazines.

But it is very interesting that only nine parents mentioned their children as a source of influence in their first place. According to the parents, some possible reasons for the low effectiveness of children's effort to have an impact of their parents' pro-environmental behaviour were the fact that some of the parents had been already pro-active before the children brought the information and ideas at home; and because sometimes their ideas were not practical and doable.

Finally, regarding the second part of the research questions which concerns the role of school in families' sustainable lifestyles, we saw that the majority of the parents said that they had been influenced indirectly by the school through their children; which in turn suggests the impact of the National Framework for Sustainable Schools outside the school boundaries.

4.7 Focus group with children-Phase 2

The last step of the research design was the second phase of the focus group with the children, where we partially analysed the data, tried to find out and understand the reasons why the message of sustainability were difficult to be diffused and absorbed by parents. Moreover, the

children were asked to suggest ways to overcome this problem or at least to facilitate this process and make it more effective. The same with the first phase of the focus group, all children (17) were in the same classroom at the same time seated in a circle and facing the board. The whole session did not last more than 40 minutes and the time was allocated almost equally to the three tasks of the session.

During this session were used innovative participatory methods for ranking, decision making and problem solving, which have been explained more thoroughly in the methodology chapter. Here are presented only the findings. In the first place the children were asked to classify the changes they believed they had caused to their families' lifestyles; starting with the most powerful, drastic, effective and important change.

After some very simple calculations bearing in mind the frequency and the level, the ranking of the changes that the children perceived as a result of their effort was the following.

Rank	Action	Points
1st	Recycling	81
2nd	Reuse bags	36
3rd	Turning off the tap	33
4th	Turning off the lights	26
5th	Reuse clothes	17
6th	Walk more	13
6th	Use the bus	13
6th	Save electricity/energy	13
7th	Save water	12
8th	Turn switches off	9
8th	Use the bike	9
9th	Gardening	7
10th	Bath water for vegetables	5
10th	Drive less	5
11th	Energy saving bulbs	4
11th	Grow food and vegetables	4
11th	Handing down clothes	4
12th	Tell other people to turn things off	3
12th	Composting	3
12th	No bus or car	3
13th	Charity shops	1

Table 4.7.1 Point system

From this table we see again that the children believed that they had the strongest influence on recycling, energy and water as was mentioned by experts, teachers, children through the questionnaires and parents. This comes to an agreement with what the children mentioned in the questionnaires about their confidence in their knowledge and especially how familiar they were with the concepts of recycling and energy and water saving.

After that the children were asked to answer a question if it was their mother or father who followed their ideas to change their lifestyles more easily or if they felt it was the same for both parents. 10 children out of 17 said that there was no difference between parents on the

level of adopting their own ideas and suggestions. Next were mothers and finally fathers who seemed to have been the least adjustable.

Afterwards, we tried to find out the three most important reasons according to children's views, why it was difficult for the parents to follow children's ideas for sustainable lifestyles. Children's responses showed that the three main reasons which hindered the adoption of children's suggestions and ideas for more sustainable lifestyles were their parents' lack of time, the lack of infrastructure translated into lack of green, brown or compost bin; and the location of the house and parents' workplace, which made them use their cars more often.

Children's responses	Frequency
Lack of time	11
Lack of infrastructure (Green, brown or compost bins)	5
Location of the house	4
Location of parents' workplace	4
Extra cost	3
Need to work	2
Get all the stuff required	1
They don't always listen	1

Table 4.7.2 Problems identified by children

The children seemed to understand the real difficulties their parents faced in getting their ideas and suggestions for more sustainable lifestyles on board. However the extra cost was mentioned only by three children, indicating that the price and cost were not their priority, in contrast with their parents who seemed to consider price and budget very important. This point of view was also mentioned by a mother, who said that her husband and children tried to save energy at home for example by turning off the lights, but their motives were different. Father's motive was the cost (more rational choice based behaviour) but her children's motives were more altruistic.

Finally, the third task the children were asked to work on, was to find ways, including follow-up activities, to facilitate the diffusion on the message of sustainability at home and influence their parents more effectively. Through the discussion, the children decided which ideas were more doable and more possible to have a better result. I need to mention here that I guided children to make the final list, asking them appropriate questions in order to elicit the information we needed and let children themselves to decide the final and most appropriate ideas. The short list is the following

- Ask parents to grow food instead of buying

- Ask parents to buy a compost bin

- Tell parents not to use the plastic bags and prefer reusable bags

- Ask parents to turn off the lights

- Spend more time together at the weekends

- Ask parents walk more

- Persuade parents to buy local products

- Use the bus more often

- By telling parents more about the environment

This short list indicates children's willingness to start growing food at home and composting, as a way to support an alternative way of consuming and waste management. Moreover, the children implied that they needed to spend more time with their parents and especially to discuss about the environment, which confirms the low frequency of discussion that children and parents reported. So, most of the things that this list includes were mentioned both by children and parents as "deficiencies" in their families' pro-environmental behaviours, showing in that way the children were very well aware of the ways in which their families tried to be environmentally friendly.

Moreover, in order to make children feel confident in their knowledge and also make their parents see that their children do know a lot and in depth about the environment, having as an ulterior purpose to communicate the message of sustainability more effectively; we decided to write every summarising the findings and publish it in the school newsletter which is sent to parents, in order them to see their children's participation and name on the essay. More details can be found in the methodology chapter though.

4.8 Conclusions

From this analysis it was made clear that the doorways of energy, water and waste are those that are preferred most by the school, the students and their families, mainly because they are easily measurable, comparable and sometimes interpretable to financial gains. This viewpoint agrees with (Bourn, 2008) who admits that measuring the outcomes of sustainability efforts is a complex process.

Moreover, we can conclude that they children finally had influenced their parents, without though leading to generalisations. Additionally, according to the teachers, there was some influence from children on their family members towards more sustainable lifestyles, but this influence was small and in different ways. However, they underlined that the effect of this influence was gradual and steady, having given some examples of the feedback from parents, which was definitely positive.

This analysis of the first case study offered rich information about children's and parents' pro-environmental behaviour and the potential of intergenerational influence from children to their family members, in terms of sustainable lifestyles and sustainable consumption patterns. Some findings confirm what the literature says about a vague picture in terms of environmental information and knowledge transmission from children to adults and about children's influence on their families.

However, even the inconsistencies between parents' and children's responses about their knowledge, the frequency of the discussions about the environment and finally children's influence on their families' pro-environmental behaviour; the findings disclose how children see themselves as promoters of sustainability and how parents see their children. More specifically, there is unanimity between children's and parents' perceptions of children's influence on parents' pro-environmental behaviour. In effect their perceptions as promoters of sustainability. About the same percentage of children and parents thought that they had influenced and been influenced respectively a lot or quite a lot.

Generally speaking children had a difficulty to understand how much they had influenced the behaviour of their families in terms of the environment. On the other hand, parents seemed to trust their children and adopt their suggestions, more than the children themselves believe, despite the fact that the children thought that they knew more than their parents about the environment; and regarding children's awareness of environmentally friendly activities.

Finally, most of the parents admitted that their children's school had played a part influencing their pro-environmental behaviour indirectly through their children, giving a positive sign in that way that the National Framework for Sustainable School can have an impact on people's pro-environmental behaviours outside the school boundaries.

Chapter 5 – Analysis of the second case study

5.1 Introduction

In this chapter I present in detail the findings from the second case study, with the structure of this chapter following the chronological order of the different steps of the research, starting with the interviews with the Head of the school and a teacher, the analysis of the participant observation, the questionnaires for children, the 1st phase of the focus group with the children, the analysis of the interviews with the parents and finally the 2nd phase of the focus group.

5.1.1 About the case

This case study was a primary school in a rather middle-class area of Wakefield, where according to the Communities and Local Government database its Index of Multiple Deprivation in 2010 was 18,605th most low income LSOA (Lower Layer Super Output Area) (E01011548) in England which means that this area is in the 42.72% least low income areas in England. According to the latest OFSTED report in 2010, the WPS has achieved the National Healthy School Award, the Leeds School Inclusion Award and the Investors in Pupils Award. Additionally, WPS is characterised by OFSTED as an *'outstanding'* school and its students achieved a *'high'* score to the extent to which they contribute to the school and the wider community, inextricably linked with the aim of this research, where the influence of children outside the school boundaries, on their parents' lifestyles is under scrutiny.

Moreover, this school is a member of the Lead Partners team of the Leeds Education sustainability team and has the responsibility to educate and train other schools according to the principles of the National Framework for Sustainable Schools; confirming in that way that it has achieved high and recognised standards for its pro-environmental performance. Furthermore, this school has also developed cooperation with the 'Food for Life Partnership', which gives the school advice about the provision of school catering, with an organisation called 'Yorkshire Fruit into Yorkshire Schools' which advises the school how to plant traditional fruit varieties, with the 'British Trust for Conservation Volunteers' (BTCV) which consults the school about the school ground; and organises visits for the children to local woodland. Furthermore, this school has also worked with two more organisations called 'Young People's trust for the Environment' and 'Learning through Landscapes'. This information helped me form the picture of the broad support that the school offer to and receive from local authorities and organisations in order to achieve and promote the sustainability goals. Hence, I can infer that this school has been very active in terms of the environment and extremely dedicated to their goal towards sustainability, achieving many and different kinds of co-

operations with local and not only authorities.

5.2 Analysis of the interviews with the Head of the school and the teacher

The Head of this school, and a teacher who was in charge of the Sustainable Schools Strategy at school were asked among others about the integration of sustainability in their school ethos, about any preference for specific doorways to sustainability that their school has shown, children and parents' willingness to take sustainability on board and children's potential to turn their parents 'green', fostered by a long-term environmental education programme and the role of family socio-economic background in the families' pro-environmental behaviour.

They said that there was a general enthusiasm for sustainability diffused throughout all of the year groups, and children found sustainability quite interesting because they had an inherent interest in caring for the environment, the topics covered were new, different and out of the routine and finally because it was a well-planned and exciting strategy. Regarding the doorways of sustainability preferred by the students and school, the teachers indicated those of 'food and drink', 'energy', 'local well-being', 'school ground' and 'waste and purchase'. Finally, about the children's influence on their parents' pro-environmental behaviours, the teachers said that they lacked parental feedback, but they knew that there were parents who agreed with the principles of sustainability but they were not actively involved. However, they could not talk with certainty about the extent of this influence; because they admitted that children might have had different behaviour at home from that they had at school. Nevertheless, the school tried to use homework as a vehicle to pass the message of sustainability to parents, where some of them were interested because they had a pre-disposition or wanted just to save money.

5.2.1 The Sustainable Schools Strategy at the second case study

According to the Head teacher, the school tried to get different groups of people on board in terms of sustainability, starting with students and their clubs and groups such as the 'eco club', the 'school food action group' which is looking at school catering and the contribution of the school council to the school sustainable work. Additionally, there were teachers who run certain activities like the gardening club, the eco-warriors and the cookery club, and some more teachers, staff and governors who run the 'going green group' whose main aim was how they could become more sustainable.

When the Head teacher was asked about the methods and ways that his school followed so as other schools to be more sustainable; and if there was any student or parental participation, he said that they had a series of seminars attended by staff from other schools. In these seminars, guest speakers gave presentations and students narrated their stories from school about sustainability and not only. Regarding the parental involvement, this came after children having talked to their parents about the 'focus week', when they had sustainable themes for a week and parents had been made aware of this. Specifically, the Head teacher said

> *"…sometimes our children have been involved in telling teachers from the other schools about the things we have done in this school, some groups of children have actively been involved by giving presentations. Some children have also gone out to other places to talk to Head teachers and governors about their work in the school, about being in the school council and that sort of things. So, that is not just about sustainability, but sustainability has been an element of it… Some children later this month are going to a young people's conference to tell them about our sustainable work…We've had a link with a couple of schools abroad where we told them about what we are doing. For example, we've got a link with a school in Philippines to tell them about our gardening." (Head teacher, 2011).*

After that, the Head teacher was asked about the ages that were more willing to participate in environmental activities, and he stressed that all children shown interest in sustainability

> *"…children are very interested in this subject and we don't have any shortage of enthusiasm, certainly for some out of school activities such as our cooking and gardening…and special lessons about sustainability are very popular" (Head teacher, 2011)*

However, the teacher added that all of the seven year groups in the school, at some point deal with different parts of the whole issue of sustainability; and as an example of the diffusion of sustainability across the curriculum he mentioned the big science topic of water in Year5 and through religious education in Year3. On the other hand, English and Maths were two subjects where perhaps they could do more.

Moreover, the Head teacher also mentioned that special guests at school who talked about sustainability, like climate caps, spent all day with Year5 attracted children's interest, but he was not sure if some year groups were more interested than others. However, he mentioned the difference in children's cognitive development and its importance.

> *"…Of course the older children, Year 5 and 6 perhaps have got a little more of independence and they are learning to find out more and have started to form their own values and opinions about things. So, perhaps*

> *those children are more proactive and want to do more things" (Head teacher, 2011)*

The Head teacher also tried to pin-point the reasons why sustainability lessons and activities were popular in the student community. He mentioned three basic reasons which were children's interest in caring for the environment anyway and the fact that new and different things out of the routine always interested children. Finally, he added that children showed enthusiasm for lessons that are interesting, well-planned and exciting, so perhaps because sustainable lessons have been thought particularly carefully, maybe that was why they were successful. The teacher came to support this view saying

> *"...If you make it interesting for them, then they will be interested. But usually they are quite enthusiastic. It seems simple. I've got a board game in my class called "sort the rubbish" and you have to recycle things and sort different materials and they really enjoy playing it. As long as it is fun and interesting, they will be interested and easier to deliver it" (Teacher, 2011)*

On the other hand, the Head teacher did not forget to mention that there were some children keener to volunteer and participate in sustainability groups and activities than others, without having measured it in terms of who had more sustainable attitudes than others though. Moreover, he added that this willingness of children relates to their predisposition, interest and willingness to help; and the teacher was not able to say from his experience if children's participation related to their families socio-economic background.

This route to sustainability has got some easier and some more difficult paths. The Head teacher stressed the importance of cost in hindering radical changes. Characteristically he said

> *"...some of the gateways I think are easier to access than others. There are some issues around making radical changes to the building which precludes a lot of work because obviously there is a huge capital cost. We've looked at for example using grey water to flush toilets, but the cost involved is significant in changing the system and installing new tanks" (Head teacher, 2011)*

After these difficulties having been acknowledged, the focus was directed through the curriculum to children trying to change the way they were thinking. And so, the areas or doorways that were easier and most preferred by the school were the food and drink, the energy, in terms of energy saving, the local well-being , through the promotion of health and exercising; the school ground through children growing their own food and purchasing & waste. Moreover, the Head teacher admitted that they had done a little work on global

dimension through some links with schools abroad and considerable work on developing the school grounds to encourage wildlife. On the other hand, the school had difficulties in the doorways of water in terms of water management and travel and traffic, stressing at the same time the importance of habitualised behaviours

> *"…because people are so set in the ways of driving their cars around"*
> *(Head teacher, 2011)*

The Head teacher referred to the doorway of waste more extensively since it was something they had done quite a lot. He mentioned that this doorway had been approached in two different ways through the curriculum and in a management way. Moreover, he enumerated the ways and methods which were quite impressive including separate bins for paper recycling, card, general waste, milk cartons, batteries and toner cartridges. They recycled as well the oil in the kitchen and composted all fruit and vegetable waste from children's snacks at play times. Finally, they had also looked to try and recycle food waste from the kitchen, working with the local waste company but the necessary mechanism had not developed yet. But the most important thing was school's effort to get children and parents on board.

> *"…In terms of recycling we try to involve the children quite a lot and families" (Head teacher, 2011)*

In terms of buying the Head teacher said that low energy electrical appliances were their priority, as well as the purchase of local and organic food. However, he mentioned the technical difficulties for example in buying recycled paper because of its non-compatibility with the machines and its higher cost.

The Head teacher also acknowledged the ability of doorways like energy, water and waste to be measured, compared and interpreted to financial gains quite easily but he concluded that

> *"…it's easy to demonstrate but more difficult to demonstrate attitudes"*
> *(Head teacher, 2011)*

He said the examples of LED appliances and solar panels, without forgetting to mention the difficulties in plans completion.

> *"For example we are carrying out a replacement lighting operations and we're replacing the older lights and high usage lights with LED appliances which are going to save us a lot of money…We're also looking at trying to get some solar power units but I have to say that the authorities energy units seem to be a bit slow in promoting that too"*
> *(Head teacher, 2011)*

5.2.2 Sustainability as a high profile message

The Head teacher said that sustainability as a high profile message started to appear three years ago when a new raft of guidance was given by the department of education, and then aroused

> *" …a general feeling in the population that we all should try to do something about the environment …and there are lots and lots in the media about it, a lot of commercial organisation have tried to be green and eco-friendly…" (Head teacher, 2011)*

This focus of the school on sustainability was a major part of the personal well-being where the school aimed at, and caused the recognition of Ofsted for their overall effectiveness. So, since the personal well-being is inextricably linked with sustainability, this made the school staff want to continue this effort; and in combination with the recognition from Ofsted

> *"…it made us want to do it more and more" (Head teacher, 2011)*

Keeping at the same time a balance between teaching children sustainability and basic skills. Moreover, regarding the recognition received from Education Leeds Sustainability team, and their inclusion in the Lead Partners team, both of them might have come after their initial interest to try, maybe because they went a step further than other schools or because of their obvious desire to do more.

Apart from the recognition from Oftsed and Education Leeds regarding the school's overall achievements and pro-environmental behaviour, the Head teacher and the teacher confirmed that this environmentally friendly stance was well embedded in the school ethos and in children's behaviour and understanding.

> *"Children respect the environment and they are very keen to try to improve the environment and they've got lots of great ideas and they are interested in nature anyway. Children tend to be interested in nature and they like taking part in any activities and lessons to do with nature and so I think their understanding is quite good. Yes, I think they are conscious of what we are trying to do. Some of a higher level than others of course" (Head teacher, 2011)*

In agreement with the Head teacher, the teacher said that this effort was beyond recognition and personally speaking it was about feeling that

> *"…you make a difference not only for the school but also for the children around the school as well" (Teacher, 2011)*

5.2.3 The role of family background

In an effort to categorise the families in terms of their interest for sustainability and environmental principles, the Head teacher said that there may be two types of parents, those who are very passionate and those who do not care at all. However he admitted that they lacked parental feedback about it. He also separated the interest from action saying that,

> *"…I think there are some families who are particularly interested and supporters, but I would say there are a lot of people, a lot of parents who probably agree with the principles and agree with what we are trying to do, but they don't seem to be actively involved" (Head teacher, 2011)*

He explained though that one of the reasons this may have been the case, was the fact that

> *"…there are some people who really struggle with life and for whom sustainable issues are really very peripheral to their day-to-day living… I think middle-class families can afford to be altruistic and working-class families are always going to purchase at a lower price." (Headteacher, 2011)*

On the other hand the teacher believed that there may have been only a slight difference, very generalised though, between families of different socio-economic background, but he was of the opinion that parents of any kind of background took a varying level of interest in their children's education. He said

> *"…I have examples of working-class parents who come and see me more often than some high income parents. I think all depends on each parent rather perhaps on the backgrounds" (Teacher, 2011)*

Regarding parents' interest in environmental things, the Head teacher could not say with certainty if parents of lower socio-economic groups have got the same interest in sustainability as those of higher socio-economic groups, feeling however that this probably would be the case and only for the reason mentioned before, because for some parents life is pretty hard. However, he was not certain because they had not really surveyed parents. There was absolute unanimity, since the teacher also said that due to lack of communication with and feedback from the parents, he also could not say with certainty what kind of things the parents were really involved in, but he assumed that standard things like recycling were happening and families shown sympathy for things like this. Characteristically he said

> *"…there are some spots I would say we don't really communicate with parents regarding the sustainability. If I had to guess, a lot of them would be into that, they care and they're trying their best but they could*

probably do more; that kind of category, if I had to categorise them"
(Teacher, 2011)

When the Head teacher was asked about the motives for the families to engage in environmental activities, he mentioned that

> *"I think some parents are getting involved because they have an interest themselves, a predisposition and support those politics. Some of them get involved because they think it may be interesting for the children and they want to support the children in their learning whatever it is about. Some parents might be interested in saving money …some of the ways to save money involves lifestyles changes or even their effort or going out of the way. I think with some of those activities we could help and show them how to do things more easily" (Head teacher, 2011)*

The teacher also agreed that money was a priority for parents and possibly the highest one, given the tough times the economy was going through.

> *"I think again that it depends on the parents and there is quite a big range. I mean that the economy as it is, all parents earning more or less than others are interested in saving as much money as possible. I think that for everybody the money could be an incentive. But I am sure there are some parents who have the priorities as you said, to help the planet. Through our communicating with the parents I am not quite sure what their opinions are. But I might guess that the monetary priority might be the main one that they would say" (Teacher, 2011)*

5.2.4 Children's influence on their families' pro-environmental behaviour

The Head teacher said that generally speaking the parents in this school were fairly supportive about helping children with their homework, and through homework he pointed an interesting avenue for the children to influence their parents, saying that

> *"…we actually make one of our special homework to do with sustainability and that is part of our work and next step about promoting to the community. So, that is a very nice idea for getting parents to help the children. For example, children were asked to do little surveys about energy use in the home" (Head teacher, 2011)*

Regarding other activities which aimed at children's influence on their parents, the Head teacher enumerated some key things that all children did. More specifically, recycling had been explained to all of the children, they had organised school trips for a whole year group to visit local woodland with the idea of conservation in mind, or to local farms for children to learn about growing things and how important it is to choose local food and reduce air miles. They also had whole school assemblies talking about sustainability issues and encouraging

them for example to walk more instead of travelling by car, they also by organised a competition for this. This was a very parent-oriented activity, since most of the parents brought themselves their children to school.

As far as children's actual influence on their parents' pro-environmental behaviour is concerned, the Head teacher and the teacher said that

> *"I think there is an influence. Children will try and promote that but the parents I suspect the children will only put pressure on as long as it doesn't inconvenience them…maybe they want to recycle but it is not very convenient for the parents" (Head teacher, 2011)*

> *"…But we do much in terms of the school itself, as a wider, whole school approach at the moment. Hopefully some messages will go home and impact the children, which is probably the main reason we are doing that…I realise that I have to think if they go home and pass on any message we have given them, and like I said we have not measured all that and find out what has happened at home. So, we would not really be up to measure if there is any impact on the families" (Teacher, 2011)*

> *"We have some of the eco-warriors who came back to us and said "I've told my dad not to leave the lights on in the garage". I do have some children in my class they have started having a compost bin in their garden or they made their parents put some paper into the recycling bin instead of putting them into the general waste bin and going to the land field site. It happens occasionally and it is not very frequent" (Teacher, 2011)*

But again the teacher could not say with certainty if this potential influence was the case, again due to lack of communication with and feedback from parents. He had some examples which could support this idea but the evidence and the information that came back to school from students were not able to defend and justify this viewpoint. The examples were few and occasional.

> *"If we 'dig' the parents and see their opinions on…we have some sorts of examples, but we don't really reach out to the parents, regarding sustainability…and I must say that no parents have come to me and say "My child made me change…but yes, some children came and told me that they asked their parents to walk to school instead of driving; and other teachers have told me that they have similar messages from other children. But it happens very occasionally and it's not quite frequent" (Teacher, 2011)*

The Head teacher also believed that there was some influence on the parents but he also believed that children's behaviour in terms of the environment at school may differ from that

at home, because children have the inclination to separate these two different environments and they may say that

> *"…This is something we learn at school and this is home. Without being in the home I can't really tell you" (Head teacher, 2011)*

> *"…I haven't seen much of that or I have not got much feedback if you like, about what happens and how much at home. I'd love to think that everything we've discussed in school, they've carried at home. We all know that different things go on…" (Teacher, 2011)*

Moreover, the teacher talked about percentages regarding children' behaviour when they leave school borders and go home, saying that

> *"I'd say in every class there may be two thirds of the children are passive or lazy, and on third would be quite active or vocal towards their parents. These two thirds may be interested but they are passive or lazy" (Teacher, 2011)*

As a result the Head teacher underlined that one of the school's next goals was to engage more parents and families in the sustainable lifestyle concept, since only one or two parents went to their 'Going Green' group and who had volunteered to come to school and talk to the children about sustainable issues.

5.2.5 Motives to make this effort durable

When the Head teacher was asked about the motives for them to continue this effort, he mentioned that the staff were quite keen to support the idea of reducing climate change and their intrinsic interest in activities about sustainability which made them want to develop them more. However, he did not neglect to mention that saving money certainly was also a driving force. Regarding children's motives to carry on this effort, it was the fact that the activities were fun and the feeling they did good things. At the same time, according to the teacher, this was one of the benefits for the children themselves from their engagement in sustainability.

> *"For themselves, they are doing something right, in terms of doing something ethically right. For the school, probably they find some enjoyment from the things they have done" (Teacher, 2011)*

This will for a continual and durable effort related to future goals that the Head teacher set for the school. His ambitions and goals were to start composting food waste from the kitchen in cooperation with a food waste company, to improve the facilities on the school field and make them easy to manage, environmentally friendly and to produce more areas to grow their own food, to try through the lab replacement programme to reduce energy costs, to install solar

panels on the roof, to focus on children's diet and exercise regimes and finally to promote these values to parents and local community.

Regarding how long-lasting the results of this effort will be, the Head teacher talked about some changes which definitely would have long-lasting benefits, like those changes in the physical plant of the school, but he also mentioned the importance of the durability of behaviour changes, having said that

> *"…I suppose if we can be successful and celebrate our work locally, that may have a long-lasting effect" (Head teacher, 2011)*

5.2.6 Conclusions

According to the Head teacher and a teacher of the second case study, the school has done a lot of work in order to diffuse and promote sustainability, not only within the school boundaries or the local community, but also overseas, having created links with schools abroad. The main doorways the school has focused on and which tried to develop to an even greater extent were the school ground, well-being, purchase and waste and energy.

They contended that sustainability was well embedded not only in staff's behaviour, but also in the school ethos and students' behaviour. This made them want to try harder and take further steps, further, addressing sustainability as a high profile message for students and their parents. However, neither the Head teacher nor the teacher could say with certainty if this message of sustainability went back home through students, influencing parents' lifestyles. There were some good examples but not enough to lead to generalisations, since the feedback and the information the teachers got from students and parents were not sufficient.

Finally, regarding the role of families' socio-economic background in children's and parents' engagement in environmental activities and adoption of more sustainable lifestyles, no concrete evidence existed to prove any kind of relationship; since the school had lack of communication with parents, especially in these issues, something that they should work on and improve.

5.3   Analysis of participant observation

I visited Year 5 of the second case study for my research and the first phase was the participant observation in the classroom for a whole week, to ascertain whether and how sustainability and environmental protection were mentioned, given attention and diffused across the curriculum. Moreover, I wanted to familiarise myself with the school environment and build a trustful relationship with children. This was absolutely necessary since there were subsequent

steps in research design which required students' participation and cooperation with the researcher.

Regarding the school, it was so big, with three classes in Year 5 with almost 30 students in each class, that it prevented me from spending sufficient time with the same children. For example, in the first place I spent one day in each class and on the fourth day the students of the first class had not seen me for two days. One possible argument would be that I could swap between the classes, but the number of students in each class did not allow me to do so, because I needed more time to talk to as many students as I could from one class.

In the first place all students gathered in the same class and I had the opportunity to talk about the project and its importance, to explain all the steps of the research design and highlight how vital their own and their parents' participation was. After this short talk, I went to each class separately to hand out the consent forms for children and the questionnaires to those students who agreed to participate, at least to the point where parents' consent was not necessary. The students' response rate was 100%, expressing their willingness to participate and help me also in later stages of the research. At the same time, they were a little reluctant to express their interest openly in the first place.

While I was explaining the aim of this research, I observed that the children were not very familiar with the term 'sustainable' and its derivatives like sustainability and so on. Instead they used words or terms like 'green' and 'environmentally friendly' and they seemed to know a lot mainly about recycling.

After only one week at school I have to be careful about making generalisations regarding the extent to which sustainability was mentioned in the classroom. It did seem that the environment as a topic, its protection, ways of promoting pro-environmental behaviours and ways to develop children's critical thinking regarding the environment and sustainable development were not the teachers' priority; in terms of their diffusion across the curriculum or the use of relative examples to facilitate the teaching and learning process.

However, there were some examples where science was taught with hands-on activities which children showed a particular preference for. The most characteristic example was when children had to do a kind of experiment in order to find out the optimum conditions for plant germination, controlling the amount of light and water a plant needs and also the type of soil. This helped children understand for example that excessive amount of water for plants, is rather a waste than something beneficial to plants.

Another example of promotion of pro-environmental behaviour in the classroom without necessarily being linked with the curriculum was the teachers as role models. A particular

incident made me understand how well embedded some behaviours were and how the teachers tried to habitualise them and make them normal. What happened was when the teacher of one class received two letters and after having read them he asked a student to take the empty envelops to the recycling bin for scrap paper; which was placed exactly next to the general waste bin. In my opinion, in this way the children could understand the emphasis the teacher laid on recycling or reusing scrap paper, passing the 'responsibility' to a student to do that for him. Another example of making pro-environmental behaviour a high-profile message for students within the classroom borders was a sign on the wall saying

> *"…Keeping areas neat and tidy is very important and we want to be as eco-friendly as possible…"*

This is an odd interpretation of the term 'eco-friendly', associated with a clean and tidy school environment in particular and a wider environment in general I suppose. In effect, it does not foster students to think about sustainability and environment from the perspective of saving the natural resources for example and maintaining a standard level of quality of the environment for the next generations, which is one of the aims of sustainable development. I would say that this message urged students not to litter but without helping them to think further about sorting out their litter and recycling though.

Finally the school had adopted a rather collective and integrated perspective of promoting sustainability and pro-environmental behaviours, trying also to give tangible examples of their activities and making their results known. A characteristic example was a vase with flowers at the reception of the school saying

> *"These chrysanthems were grown by school gardening club"*

So, what I can say from this stage of the research is that there was a stark contrast between the extent to which sustainability was promoted in the school but outside of the classroom and boundaries of the strict curriculum and the extent to which it was mentioned in the classroom as a part of the teaching process. Sustainability was an integral part of the school's operation but in the classroom it seemed to me like a secondary subject that was not mentioned that often. The time I spent in the classrooms was not sufficient to infer what would happen in the school year, however this was a typical, average week which could help me generalise about day-to-day experience if not about the whole year.

Regarding children's interest in sustainability and willingness to participate in my project which relates to the environment and sustainability, I can say that it was obvious that they were interested in the environment and my project also, and the first sign was their focus and attention they paid on me while I was explaining the project and the aim of my visit at school.

Moreover, they were very committed to the experiment they had to do for the plant germination during the whole week, and how willingly they asked for my help at the last stage of their experiment, when they had to write the results. I should not forget to mention also the short discussions that took place during the play time which included their participation in the garden club, eco-club and eco-warriors.

5.4   Analysis of children's questionnaires

The next phase of the research was children's questionnaires. In the first place 87 consent forms were handed out to children to fill in if they agreed to participate in the study. They were explained by me and their teachers, if it was necessary, every single step of the research design and the importance of their contribution. All of the students from the three classes of year 5 gave their consent to participate and filled in the self-completed questionnaires in the first place. The procedure which was followed was exactly the same as in the first case study (chapter 4).

The whole population of Year 5 that completed the questionnaires, was 87 children and then 20 (19 parents gave their consent but there were two twin children) of them finally fully participated in all stages of the research after their parents' consent. As a result, the analysis will be for two sets of students, one for the whole population and one for the 20 students. When the two subgroups are being compared, then percentages are being used in the diagrams, otherwise the observed frequency is being used.

5.4.1 Children's level of satisfaction and knowledge about the environment

In this section, I am analysing children's level of satisfaction with the quality of the environment they live in as well as their reported knowledge about the environmental problems and ways to tackle them. This section is very important because it is going to be combined with children's reported level of influence on their parents' pro-environmental behaviour, justifying the lack or not of confidence in order to transfer the message of sustainability at home and finally to influence their parents. Generally speaking, the whole population of children in Year 5 has got a relatively high summative percentage of knowledge (44.7%) for the levels of 'quite a lot' and 'a lot'; while the subgroup of 20 students had 70% respectively. Hence, the students were confident enough in their knowledge about the environment based in what they reported.

In both groups the mean level of satisfaction is between 'neutral' and 'happy' and in both cases the majority of children said 'happy or satisfied' with the quality of the environment they lived in. But this is only the impression that the children had about the environment they lived in. What I can say from my experience and observation of the area around the school and the

neighbourhoods around the houses I had the chance to visit for the interviews with the parents, is that the environment was very clean and green with open spaces, small alleys forming in the way small and closed neighbourhoods where children can play without the danger of the cars, as well as providing them with the opportunity to form stronger community relationships. Moreover, almost all of the houses in this area were detached with their own garden; helping in that way the children to create their 'own' environment and possibly come closer to nature.

Regarding children's knowledge about the environment in general and the environmental problems we are currently facing, the majority of students 32.9% (N=87) said they knew 'quite a bit', 23.5% 'a lot' and 21.2% 'quite a lot'. On the other hand, the majority of the subgroup students 50% (n=20) said they knew 'a lot', 20% 'quite a lot' and 15% 'quite a bit'. These numbers show us that the children of the subgroup seemed to know more about the environment or at least they felt more confident in their knowledge. This difference may relate to the frequency of discussion about the environment with their parents and parents' interest to participate in the research, which may indicate a propensity to pro-environmental behaviours.

5.4.2 School practices to communicate sustainability according to children

In a later stage of the questionnaire, the children were asked *if* and *how* they had perceived that their school tried to diffuse the message of sustainability at their homes, with a view to identifying the ways or methods the school used to do so, or at least which of these methods were more easily perceived by them. I ended up in the ways included in the table below after having read all the questionnaires and classified the answers in categories with the highest frequency.

How the school diffuses sustainability at home according to students		
Method	Percentage (N=87)	Percentage (*n=20*)
Send letters to parents	1.1%	*5%*
Teach children to teach parents	1.1%	*0%*
Recycle at home	26.4%	*20%*
Turn off lights	5.7%	*5%*
Turn off other appliances	4.6%	*5%*
Bring experts at school	12.6%	*10%*
With talks and readings at school	6.9%	*10%*
Eco-warriors group	24.1%	*35%*
Green-day	10.3%	*15%*
Gardening club	14.9%	*30*
Assemblies	6.9%	*0%*
Eco-club	3.4%	*5%*
Other	9.2%	*10%*
Not applicable	19.5%	*10%*

Table 5.4.2.1 How the school diffuses sustainability at home according to students

As we see from the tables above, the three most common actions that the children perceived as those actions that their school used to diffuse sustainability at home were the eco-warrior group, the gardening club and the need for recycling at home. However it is very interesting to see that school's initiatives for energy saving by fostering children to turn off either the lights or other electrical appliances are very low ranked, despite the fact that the school focused on energy saving activities according to the Head teacher and the teacher. Maybe the children did not understand the school's effort to pass the message of saving energy just by habitualising those actions. Additionally, the eco-club and the letters to parents are two actions that were not perceived by children as effective as the school aspired them to be; or their contribution was not clear-cut to them.

After that, the children were given some adjectives to choose from as well as the option to include theirs, in order to describe their school and teachers' efforts to make their school a sustainable school. The most frequently used adjectives (even in different order) that students preferred to characterise their school and teachers' efforts to make their school a sustainable school were 'interesting', 'exciting', 'cool' and 'useful'; and on the other hand the adjectives 'tiring' and 'boring' are bottom ranked in both groups. As it was described in the beginning, children were asked to choose as many adjectives as they wanted, having been explained to them that choosing combinations of opposite adjectives (e.g. exciting and boring) would not make any sense. So, these results show children's enthusiasm or positive predisposition towards sustainability and their teachers' effort; confirming in some way school's general pro-environmental attitude and how it has been instilled to children. In their interviews, the Head of the school and the teacher mentioned that if this effort becomes fun and exciting for children, then it is more likely to succeed; and they worked towards this direction with good results according to the table.

5.4.3 Children's pro-environmental behaviour in different contexts

According to the experts and teachers of this school, there is a possibility for children to behave differently in terms of the environment when they are at home and when they are at school. So it would be very useful to see if there is or there is not consistency in their behaviours; and infer how committed the students were to an effort to influence their parents. Generally speaking, there were not big differences for both groups between their pro-environmental behaviours at home and school respectively; and they were mostly 'happy or satisfied' and 'very satisfied' with their behaviour in both contexts.

One of the questions the children were asked was how happy they were with their effort to be 'environmentally friendly' in different contexts, at home and school. People tend to behave differently in different environments for many reasons; such as peer pressure, different

infrastructure, obedience to rules or people, laziness and generally speaking, influence from different sources.

Children's claimed pro-environmental behaviour at school and home (N=87)					
N=87	Very unhappy or very dissatisfied	Unhappy or dissatisfied	Neutral (neither happy nor unhappy)	Happy or satisfied	Very happy or very satisfied
At school	1.1%	2.3%	14.9%	35.6%	46.0%
Frequency	1	2	13	31	40
At home	2.3%	5.7%	16.1%	33.3%	42.5%
Frequency	2	5	14	29	37

Table 5.4.3.1 Children's claimed pro-environmental behaviour at school and home (N=87)

Children's claimed pro-environmental behaviour at school and home (n=20)					
n=20	Very unhappy or very dissatisfied	Unhappy or dissatisfied	Neutral (neither happy nor unhappy)	Happy or satisfied	Very happy or very satisfied
At school	5.0%	0.0%	15.0%	35.0%	45.0%
Frequency	1	0	3	7	9
At home	5.0%	10.0%	10.0%	40.0%	35.0%
Frequency	1	2	2	8	7

Table 5.4.3.2 Children's claimed pro-environmental behaviour at school and home (n=20)

As we see from the tables above, in both groups students tended to report they were happier with their effort to be more environmentally friendly at school than at home. This discrepancy is very slight but it is very interesting that children tended to have higher percentages for higher levels of satisfaction and lower for lower levels of satisfaction at school than at home. In order to have a better picture of the reasons why this discrepancy exists, we should compare parents' pro-environmental behaviour at home, considering school's environmental performance very good and given. The fact that the school has adopted sustainability and environmental protection as high profile messages, according to the Head of the school and the teacher who were interviewed, possibly made students to act considering the environment as one of their priorities, while the emphasis given at home may have not been that strong.

With a view to comparing children's contentions for their pro-environmental behaviour at home, children were also asked if they believed their families tried to protect the environment and here are the answers.

Based on students' **perceptions** regarding whether their families tried to protect the environment, the vast majority in both groups (77% for N=87 and 85% for n=20) said that their families tried to protect the environment, a fact that help us understand or assume that the family environment and lifestyle have been supportive in terms of pro-environmental attitudes and behaviours. This assumption could justify in a way the small discrepancy in children's pro-environmental behaviour between school and home. I should not forget to mention though

that the subgroup of 20 children had slightly better percentages indicating their own and their parents' environmental awareness, without it being a generalisation.

After the children having been asked if their families tried to protect the environment and the majority of them answered yes, then they were asked to report the ways they did so as a family and not their parents or themselves separately. From the table below it is obvious that some activities either environmentally friendly or not, are beyond children's control for example 'walk instead of using the car', but the main aim was not to find out what children or parents themselves did, but what children regarded as pro-environmental behaviours in their family life.

Families' pro-environmental behaviours reported by children					
Activity	Percentage	Frequency		Percentage	Frequency
Turn off the lights	52.9%	46	Turn off the lights	60.0%	12
Recycling	48.3%	42	Turn off appliances	50.0%	10
Turn off appliances	31.0%	27	Recycling	35.0%	7
Walk instead of using the car	18.4%	16	Turn the tap off	30.0%	6
Turn the tap off	17.2%	15	Plant trees and plants	25.0%	5
Plant trees and plants	11.5%	10	Walk instead of using the car	15.0%	3
Other	10.3%	9	Other	15.0%	3
Not applicable	8.0%	7	Take care of rubbish and littering	10.0%	2
Save water	5.7%	5	Energy-saving bulbs	10.0%	2
Save electricity	3.4%	3	Shower instead of bath	5.0%	1
Reasonably minimum use of heating	3.4%	3	Save electricity	5.0%	1
Shower instead of bath	3.4%	3	Not applicable	5.0%	1
Energy-saving bulbs	3.4%	3			
Double-glazed window	2.3%	2			
Take care of rubbish and littering	2.3%	2			
Collect rain or bathe water for plants	2.3%	2			
Insulation	1.1%	1			
	N=87				n=20

Table 5.4.3.3 Families' pro-environmental behaviours reported by children

From the table above we can see that 'turning off the lights', 'recycling', 'turning off appliances', 'walking' and 'turning off the tap' were the most frequently reported behaviours and if we add the separate behaviours which also save energy and water like 'energy saving bulbs' and 'shower instead of bath', we can say again that the themes of energy, water and waste (recycling) were the most common or at least those that children could perceive in their everyday family life. It would be very interesting to compare these answers with parents' answers, since no children mentioned anything about purchasing habits like reusing plastic bags. However, even in a small percentage, I think it is important that there were children who mentioned 'double-glazed windows', 'reasonably minimum use of heating' and 'energy-saving bulbs' which actually are changes in house conditions itself as well as in indoors conditions. They understood these changes, the aim and effect of these changes and they mentioned them.

Almost the same applies for the subgroup of 20[16] students. They said that their families tried to protect the environment mainly by turning off the lights and other appliances (energy), recycling (waste) and turning off the tap (water). Again we ascertain an interest in the three themes of energy, water and waste, likewise with the whole population of Year 5.

When the children were asked what they did more often with their parents and what they enjoyed doing together, chatting was high on children's 'doing' and 'enjoying' agendas for both groups. This made me wonder whether the environment is one of the topics of discussion and if yes, in what frequency it comes up. So, the next question that children were asked was about the frequency of and the motives for discussion about the environment, as well as who usually started the discussion about the environment.

In both groups the majority of children (40.2% for N=85 and 50% for n=20) reported that they 'rarely' discussed about the environment with their parents; and another substantial percentage (31% for N=85 and 35% for n=20) said 'sometimes'. However, the majority of children (36.8% for N=85 and 50% for n=20) said it was themselves who started a discussion about the environment more often and sometimes along with their mothers. On other hand, this can be a potentially positive sign of children's initiative to educate their parents about more sustainable lifestyles or more pro-environmental behaviours.

After we have seen who usually started the discussion about the environment according to children's reports, it is very useful to see what the motives for discussion were, again according to students' opinions. Lights and other appliances which had been left on were the main

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[16] Any comparison with the whole population of Year 5 would not be objective because the number of families' pro-environmental behaviours is almost the same as the number of families of the sub-group, so it was very possible for some types of behaviour to have zero frequency.

motive, mentioned most often by students, showing their interest in saving energy, or when the tap had been left on as well, indicating children's focus on hindering the waste of energy and water. On the other hand, this preference for water and energy saving as motives for discussion about the environment makes me believe that the fact that their practicality and the focus of school on these issues played their part. However, guests at school do not seem to have been a powerful motive for discussion, despite the fact that many children said that bringing experts to school was an effective way for them to influence their parents. In a nutshell, the environment was not a high priority for discussion on families' agendas, but when this happened it was mostly instigated by children who were motivated in turn by energy and water wastage.

5.4.4 Children's role in families pro-environmental behaviour

Children's influence on parents and generally on families' sustainable lifestyles is the main research question of this study, but the answer to this question can be elicited in association with other parameters which may affect the effectiveness of influence. The main parameters which are going to be examined are children's pro-environmental behaviour at home, children's knowledge about the environment, children's knowledge about the environment in comparison to their parents' respective knowledge and children's influence on their parents' sustainable lifestyle. Roughly speaking, I found that the children mainly said and felt that they had influenced their parents 'a little' and 'quite a bit', despite the fact that a substantial percentage of them claimed they knew 'quite a lot' and 'a lot' about the environment and most of them said also that they knew 'about the same' as their parents without feeling inferior to them in knowledge about the environment.

In order to avoid repetition, I use the number of the tables instead of presenting the same tables again.

	Much less	Somewhat less	About the same	Somewhat more	Much more	
If the children said they knew more about the environment than their parents (N=87 & n=20)						
Percentage	12.6%	18.4%	32.2%	14.9%	19.5%	
Frequency	11	16	28	13	17	N=87
Percentage	*15%*	*15%*	*25%*	*25%*	*20%*	
Frequency	*3*	*3*	*5*	*5*	*4*	*n=20*

Table 5.4.4.1 If the children said they knew more about the environment than their parents (N=87 & n=20)

Children's perception about their influence on their families' sustainable lifestyle (N=87 & n=20)						
	Not at all	A little	Quite a bit	Quite a lot	A lot	
Percentage	6.9%	31.0%	33.3%	12.6%	16.1%	
Frequency	6	27	29	11	14	N=87
Percentage	*0%*	*30%*	*30%*	*15%*	*25%*	
Frequency	*0*	*6*	*6*	*3*	*5*	*n=20*

Table 5.4.4.2 Children's perception about their influence on their families' sustainable lifestyle (N=87 & n=20)

Examining the previous tables we can see that the whole population of Year5 (N=87) and the children of the subgroup (n=20) almost agreed on the level of their influence on their families' sustainable lifestyles, with the subgroup being a little more optimistic presenting slightly higher percentages for the level 'a lot' and 0% for the level of influence 'not at all'. For example, trying to combine previous information, we see that the majority of children said they knew 'quite a bit' about the environment and as well as 'about the same' as their parents knew, without considering them more aware or experts. This opinion of theirs is consistent with what they said about the influence they had exerted on their parents in order to make them adopt more sustainable lifestyles. For example, by knowing 'about the same' as their parents and having a moderate knowledge about the environment, they said that they did not feel able to make the difference and influence their parents further towards more pro-environmental behaviours.

At this point, I think it would be very interesting to see what the children who said they knew 'a lot' about the environment and 'more' than their parents reported about their influence on them. This would be an indication of children's confidence in their knowledge, their ability to influence their parents and communicate the message of sustainability and as well as, how they see themselves within families' decision making process in everyday life. For example, it would be very interesting to see what children with a higher level of confidence said about their influence on their parents.

The following series of tables will lead us gradually to their perception about their influence on their parents' pro-environmental behaviour and we will try to find out if there is consistency in this year group between their reported knowledge about the environment and what they also said about their parents' knowledge and the influence on them.

Children's reported knowledge about the environment * Children's perception about their parents' knowledge (n=20)								
			Children's reported knowledge compared to parents'					
			Much less	Somewhat less	About the same	Somewhat more	Much more	Total
Children's knowledge about the environment	Not at all	Count	0	0	0	0	0	0
	A little	Count	1	1	0	1	0	3
	Quite a bit	Count	1	1	1	0	0	3
	Quite a lot	Count	0	1	1	2	0	4
	A lot	Count	1	0	3	2	4	10
	Total	Count	3	3	5	5	4	20
		% of Total	15%	15%	25%	25%	20%	100.0%

Table 5.4.4.3 Children's reported knowledge over parents' knowledge (n=20)

Analysing this table, four of the students who said they knew 'a lot' about the environment also said that they knew 'much more' than their parents, indicating their confidence in their knowledge and at the same time three students said they knew 'about the same', indicating that their parents had a good level of knowledge. This consistency continues as we move towards lower levels of children's knowledge along with lower levels of confidence since two of the four children who said they knew 'quite a lot' also said they knew 'somewhat more' than their parents and. Carrying on with this path, we see that lower level of reported knowledge indicates lower level of confidence through the comparison of children's and parents' knowledge; or they perceive that their knowledge was not of the same level as their parents.

As we see in the Table 5.4.4.2 above, 14 (in total) out of the 20 students (70%) of the sub-group said that they had influenced their parents, starting from the level of 'quite a bit' to 'a lot', indicating the existence of some influence. However, six of them said that they had influenced their parents 'a little'. So, we see that the diffusion of sustainability and pro-environmental behaviour was not that strong from children to parents and children did not felt very confident to make their voice be heard and cause changes to their families' lifestyles towards sustainability.

The next two steps are to present the cross-tables of children's reported influence and knowledge, as well as children's reported influence and perception about their parents' knowledge.

Children's knowledge about the environment * Children's influence on family's sustainable lifestyles (n=20)								
			Children's influence on family's sustainable lifestyles					
			Not at all	A little	Quite a bit	Quite a lot	A lot	Total
Children's knowledge about the environment	Not at all	Count	0	0	0	0	0	0
	A little	Count	0	2	0	0	1	3
	Quite a bit	Count	0	2	1	0	0	3
	Quite a lot	Count	0	1	3	0	0	4
	A lot	Count	0	1	2	3	4	10
	Total	Count	0	6	6	3	5	20
		% of Total	0%	30%	30%	15%	20%	100,0%

Table 5.4.4.4 Children's reported knowledge & influence (n=20)

From the table above, we can see that the children who claimed higher level of influence were those who had had reported high level of knowledge. More specifically, we can observe that eight students in total had said that they influenced their parents 'quite a lot' and 'a lot' and before that they had reported that they knew 'a lot'. But it is very interesting that we can see again what we saw in Table 5.4.4.3, that the decreasing confidence in knowledge we observed before, continues also in influence as we see in table 5.4.4.4.

The next step is to present a cross—table matching children's perception about their influence on their parents' pro-environmental behaviour and their parents' environmental knowledge at the same time.

Children's influence and knowledge over parents' knowledge								
			Children's influence on family's sustainable lifestyle					
			Not at all	A little	Quite a bit	Quite a lot	A lot	Total
Children's knowledge over parent's knowledge	Much less	Count	0	2	1	0	0	3
	Somewhat less	Count	0	3	0	0	0	3
	About the same	Count	0	1	1	2	1	5
	Somewhat more	Count	0	0	4	0	1	5
	Much more	Count	0	0	0	1	3	4
	Total	Count	0	6	6	3	5	20
		% of total	0%	30%	30%	15%	25%	100 %
		N=17						

Table 5.4.4.5 Children's influence and knowledge over parents' knowledge (n=20)

Cumulatively eight students of the subgroup said they had influenced their parents 'quite a lot' and 'a lot' and this came from children who said they knew much 'much more' and 'somewhat more' and 'about the same' as their parents. This is the case for those children who were confident enough in their knowledge, especially in comparison to their parents' knowledge. But on the other hand, as we are moving towards lower levels of knowledge, we can see that the children admit their inefficiency to influence their families' sustainable

lifestyles. For example, six of the 20 students said that they had influenced their parents 'a little' and at the same time they admitted that they knew 'about the same', 'somewhat less' and 'much less' than their parents. We could say that the students may be able to assess their ability to influence their parents in a way that is consistent to their knowledge.

After all, I think that this is very promising, since it shows that children with a high level of environmental knowledge and awareness said confident enough to say that they influenced their parents to a substantial extent. This also makes me believe that what we should do is to enhance children's faith in their own knowledge in order to make them feel comfortable and confident enough to express and support their views and cause some changes towards environmental protection.

I think it is also worth examining children's influence on their parents from the perspective of their satisfaction about their effort to be environmentally friendly at home. Hence, we should look again at the Table 5.4.3.2 and Table 5.4.4.2, focusing on the subgroup of 20 students; and we can say that despite the fact that 15 out of 20 students said they were 'happy' and 'very happy' with their own effort, they did not manage to influence their parents' pro-environmental behaviour at home to a great extent. This may have happened, either because their effort did not work as an example, or because the children did not try or mean to share their efforts or views with their parents, also bearing in mind the low frequency of discussion about the environment. Another explanation may be parents' potential lack of attention on what their children did, or the fact that they considered their children's effort something they had to do anyway, especially if the parents themselves were pro-active. But these possibilities are going to be investigated in the parents' interviews analysis part.

At this point, it would be very interesting and useful to see what the children said about the ways in which their parents tried to make their lifestyles more sustainable and about how environmentally friendly their families' life was. But I need to clarify that these are the ways the children perceived and not necessarily what the parents actually did. Their responses focused more on recycling (waste management), energy saving either by turning off the lights and other appliances or by improving the infrastructure (e.g. use of energy saving bulbs) and water saving. This is in the same line with the main focus of students and school on the doorways of energy, water and waste. It should also be mentioned that there are not any substantial differences between the two groups of 87 and 20 students respectively.

Finally, the last question that the children had to answer was how environmentally friendly they thought the way their families' life was. They had to choose a number from a scale 0-5 where 0 meant 'not at all' environmentally friendly and 5 meant 'very much' environmentally friendly (0=not at all, 1=very little, 2=little, 3=medium, 4=very, 5=very much). For the whole

population of Year 5, the majority of students circled number three, about 37% and for the subgroup (n=20), about 45% (9 students) circled number 4. The mean for the population was 3.5 and for the subgroup 3.7. This is a rather weak indication that the children of the families who agreed to participate in the research were slightly more positive to report that their families were closer to a very environmentally friendly way of living. However, both groups reported a medium to a very environmentally friendly way of living for their families which is consistent with the extent they said they had influenced their parents (quite a bit), and in general with a medium level of knowledge about the environment not only regarding their own knowledge but also their parents' knowledge.

In essence, we observe a moderate stance towards avoiding extreme values or behaviours, a fact that indicates that the school is on a right and secure path regarding the communication and diffusion of sustainability but on the other hand more emphasis on taking sustainability outside the school boundaries is needed. However, these are some primary conclusions from children's point of view which are going to be compared with parents' point of view at a later stage.

5.4.5 Conclusions

This chapter focused on children and their influence on their parents' pro-environmental behaviour. This is also the main research question which I want to answer. Through this chapter, I tried to give an answer to this question, examining children's point of view and factors from different perspectives in order to have a spherical picture of what is going on and how we can intervene in the future to improve or enhance a potential positive outcome. Through children's questionnaires I found out that in terms of their environmental knowledge in general, the majority of children said they knew 'quite a lot' or 'a lot' about the environment and they claimed that they were somewhere between 'neutral' and 'happy' regarding the quality of the environment they live in. This in combination with their high level of knowledge about the environment makes their opinion more trustworthy, because it may come from a strict and thoughtful assessment.

More than 60% of the children found their school's effort for sustainability interesting and useful which is in the same line with their consistent pro-environmental behaviour in different contexts, namely both at school and home, where more than 70% of the children said they were 'happy or satisfied' or 'very happy or very satisfied' with their effort to be more sustainable. Regarding now their families' pro-environmental behaviour at home, most children said that they focused on actions such as 'turning off the lights and other appliances', 'turning off the tap' and 'recycling', in other words they centred mainly on the themes of energy, water and waste.

Finally, about 50% of the children said they knew 'about the same' or 'somewhat more' about the environment than their parents, which in combination with their high self-reported level of environmental knowledge, we could say that the children perceived that the level of environmental knowledge within the family was quite good, a fact that should also be compared with parents' perceptions at a later stage. Based on that, about 30% of the children said they had influenced their parents 'quite a bit' to make their lifestyles more sustainable.

5.5   Focus group with children-Phase 1

The first phase of the focus group took place at the end of the participant observation week, only with the 20 students whose parents had consented for themselves and their children to participate in the research. The session took place in the staff room while it was empty and lasted about an hour and a half. The students were all together in the same room at the same time, but they sat in a big circle around me. The main goal of this focus group was to engage students into the research design asking them to write some of the questions that their parents would be asked during the interviews.

At this stage, I am not going to present the methods that had been followed, since they have already been presented more thoroughly in the methodology chapter, but I am going to focus only on what the children said and the interpretation of their questions. Hence, the children had to write the questions that they would like me to ask their parents according to specific themes, such as "What do my parents know?", "What do my parents do to protect the environment?" and finally the most important one "What do my parents think about me?".

Some general conclusions before I start describing and analysing the process are that in the aforementioned topics, there was a repetition of similar questions which shows the cooperation within the group and there was also a focus on the three doorways of sustainability, energy, water and waste. However, there were some questions about transportation and use of public means of transport.

The first topic was about what the parents know regarding the environment. The questions which were voted as 'very important' were

> *"Do you know more than your children about the environment?"*

> *"Do you know what your children learn about the environment?"*

> *"How much do you know about recycling?"*

The first question shows children's interest to know the extent of their parents' knowledge about the environment, compared to their own knowledge, having taken for granted the fact

that their parents already knew at least something about the environment. Since the topic of this specific question-writing process was the knowledge of parents' about the environment, children focused on this having approached at the same time the topic from different perspectives, some more general and some more specific.

The second question was also very interesting because the children wanted to know whether their parents know exactly what they learnt at school, having shown indirectly their interest in diffusing the environmental knowledge they gained from school. In my opinion, with this question, children would like to learn more about their parents' interest in what they learn at school about the environment and their willingness to participate in this knowledge and experience exchange. This question was not included verbatim in parents' interview protocol, but being inspired by the children's idea; I included questions that could elicit information and answer children's question indirectly. For example "About what topics do you usually discuss with your children", "How often do you discuss with your children about the environment?" "Who usually starts the discussion about the environment?" etc.

The aim of the third question which was voted as very important in the first place, was to examine the level of parents' knowledge about the environment, considering a specific minimum level of knowledge given. Among other themes of pro-environmental behaviour the children preferred to focus on recycling, showing their preference on waste management issues by voting it within the 3 very important questions. However, this question was not included in parents' interview protocol, since I tried to keep the number of questions at a reasonable level, but there was particular emphasis on waste management questions (e.g. recycling, reusing things, reducing waste and composting).

After this first vote, the children voted for the 'important' question and they ended up with these two

> *"What makes you use lots of energy?"*

> *"Do you know how to save energy?"*

Although these questions were finally not included in parents' interview protocol, they made clear children's interest in energy consumption and energy saving practices, as well as parents' motives for their extended energy use. What we ascertain from these two questions is that children had observed themselves that their parents' lifestyles were 'rich' in terms of energy use, and through this question they tried to find the motives behind this, and possibly to make them think if there are any other options to be adopted or necessary changes to be made for less energy consumption in their everyday life. The second question was very specific, asking about the ways for energy saving that the parents were aware of. This question may also

disclose children's desire to know if their parents consume a lot of energy either because they do not know how to save energy or because they do not care to do so. Moreover, the children are likely to know the answer to this question in order to check if their parents finally applied their knowledge to their everyday life, by checking what has already been done or changed.
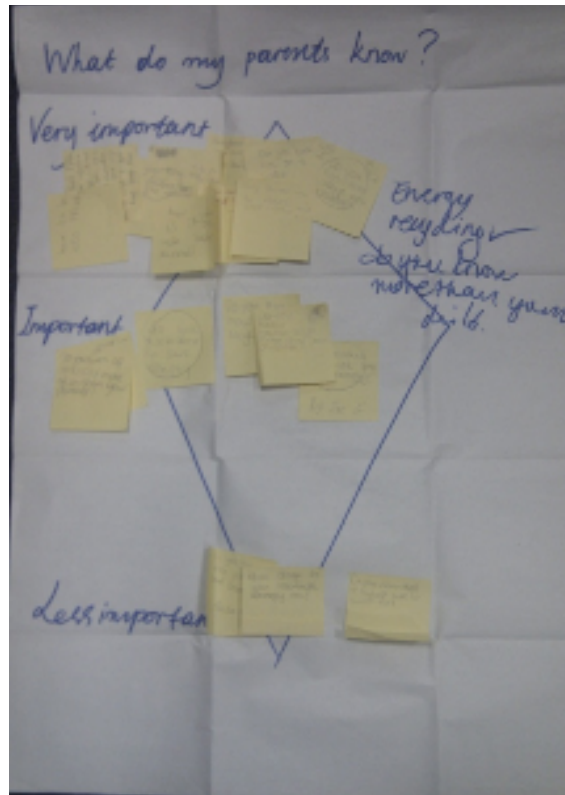
Picture 5.5.1 "What do my parents know?" Diamond graph

The next topic the children had to write questions about was 'what do my parents do for the environment?'. Before I start quoting and analysing children's questions and ideas, as well as the voting process, I would like to mention that there was a repetition of questions based on energy and water saving, recycling and walking to school and work. In the category of 'very important' questions, the children voted for the following questions

> ***"Do you protect the environment?"***

> ***"Do you do what your children learn to do about the environment?"***

And the following set of questions

> ***"Do you turn the lights off when you are not in the room?"***

> ***"Do you use the water properly?"***

> ***"Do you walk to school or work?"***

The first disarming question shows children's will to get a straight answer about whether their parents protected the environment or not. Actually, this question was not included verbatim in parents' interview protocol because it could not elicit much information since the most possible responses would be 'yes or no'. Instead, I adapted the wording to 'what are you doing on a daily basis to protect the environment?'.

The second question is very interesting, because it reveals that the children wanted to know if the information / suggestions for more sustainable lifestyles they brought at home from school had been adopted by their parents. With this question, the children wanted also to ascertain if they had set an example with their behaviour or if they managed to teach their parents and to what extend this happened. It is also a way for the children to find out if their voices had been heard within the family. This question was changed again by me in order to avoid yes or no replies, to 'What have you started doing to protect the environment after your children's suggestions or advice?".

The last set of questions included very specific questions about water and energy saving and walking to school and work. Children's preference to these topics should not surprise us, because these are also the topics that the school itself focused on, especially energy saving and walking, for example with energy monitors and 'walk to school' competition. Regarding the interview protocol and how these questions had been integrated in it, they were asked as probes after the main question of what they did on a daily basis to protect the environment.

About the 'important' questions, these were

> ***"Do you recycle?"***

> ***"How much do you recycle at home?"***

Both questions who got the majority of children's votes were about recycling, focusing on the action this time after having focused on the knowledge about it in the first topic. With these questions the children wanted to know not only if but also how much their parents recycled at home, fostering them to think indirectly about the amount of waste they produce, the amount of waste they could have avoided and the amount of waste they finally recycled. In the interview protocol, recycling and household waste management practices were included; however, there were no questions about the specific amount of waste recycled in each household but there were questions which resulted from this one, as described above.

Finally, as a less important question, children voted for the following one

> ***"Do you grow your own fruit and vegs?"***

Despite the fact that children did not give much importance to gardening and growing their own food, I included a relevant question because I believe that it could provide us with information about families' sustainable consumption habits and sustainable lifestyles, general preferences for local and fresh food even about how they spent their time throughout the week, since gardening is a pastime that takes time, and probably information about children's engagement may come up.
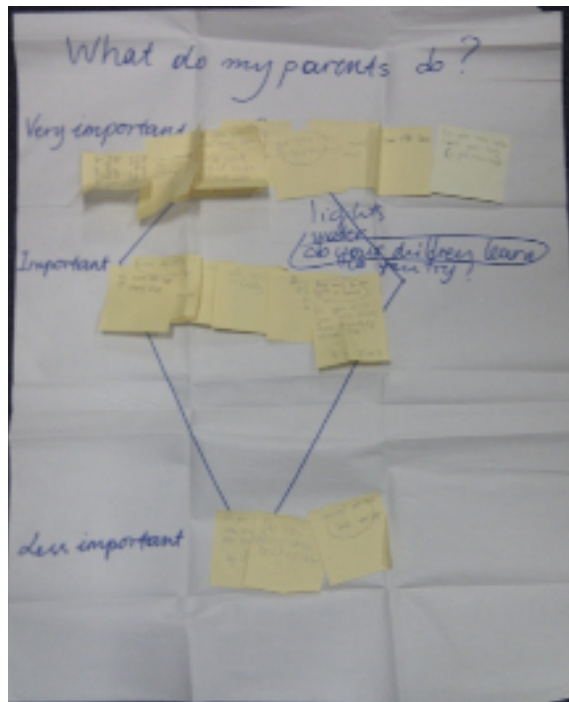
Picture 5.5.2 "What do my parents do?" Diamond graph

Finally, the last topic about which the children were asked to write questions was titled 'What do my parents think about me?", asking children in effect to think about questions which could elicit information about parents' opinion on their children's environmental knowledge and awareness, their pro-environmental behaviours and above all their influence on their parents' sustainable lifestyles.

The children voted for two questions as the very important questions which were

> *"Do you think your child's advice has made you more eco-friendly?"*

> *"Are you more eco-friendly than your child?"*

The first question was exactly to the point in terms of the main research question of the study, focusing on children's influence on their parents' pro-environmental behaviour. With this question, children shown initially that they had understood the main aim of the study and worded the question in a very nice and explicit way. However, the children implied a level of communication and discussion about the environment, between children and parents, which

consisted of advising, knowledge exchange and behaviour adoption processes; something which was not confirmed at least by children themselves through the questionnaires in the first place. Nevertheless, the children wanted to know if finally they had influenced their parents' sustainable lifestyles, but maybe starting with a minimum level of 'eco-friendly behaviour' denoted by the comparative word 'more'. Regarding the way this question was integrated in the interview protocol, only the wording changed slightly ending up to "Do you feel you have been influenced by your children to turn yourself 'greener'?"

With the second question, the children wanted to put themselves in a process of comparison with their parents, in terms of the most pro-environmental behaviour. Possibly, with this question, the children regarded themselves as role models and their pro-environmental behaviour as an example. This may go hand in hand with children's general positive view regarding their own effort to be environmentally friendly at home.

Regarding the important questions, only one was emerged, which was

"How does your child care about the environment?"

Where children wanted in the first place to show that they cared about the environment and secondly to know whether their parents had perceived their own efforts for more sustainable lifestyles. Again, this is another way for the children to ascertain if their voice, literally or metaphorically through their actions, had been heard by their parents regarding the environment. Throughout this analysis, I ascertained that one of the children's main concerns was their approval from adults and the desire their voices to be heard and make a difference. However, in combination with their answers to the questionnaires, this ambition of theirs does not come to a full consistency with their actual effort to influence their parents. In order to be more precise though, we should compare with their parent's responses to the respective questions. This question was included in the interview protocol verbatim, but parents were asked if their children's school, which was the main source of environmental knowledge for children, had influenced their lifestyles and how.

Finally, the questions which was voted for the category of the 'less important' questions was

"Do you listen to your kids for influence on recycling?"

This question focused again on recycling, which was one of the most popular themes and children were quite familiar with, but again stressed their interest to know if finally their voices had been heard by their parents.
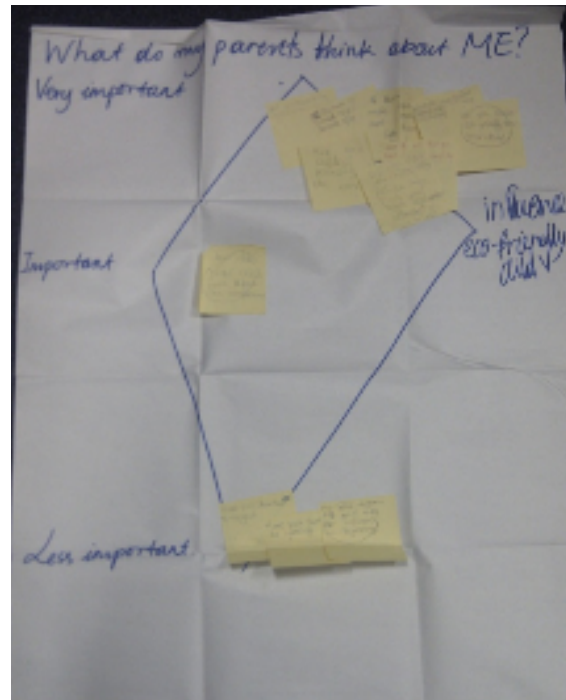
Picture 5.5.3 "What do my parents think about me" Diamond graph

5.5.1 Conclusions

This step of the research was very important because it disclosed children's thoughts, beliefs and questions; through their active and vital participation in research design. The children had to write questions that would be included in the interview protocol for parents, based on three main topics; what the parents know about the environment, what they do to protect it and what they think about their children.

Initially, the children were interested in comparing their environmental knowledge to their parents' and learning if the parents knew what their children learnt at school about the environment. At a later stage of the analysis we will see that there were parents who said that their children did not mention anything about school or they did not bring any information back home. After that, the children wrote frank questions about their parents' pro-environmental behaviours, and they also wanted to know if they finally imitated their behaviours which were taught at school. For the last topic, the children again wanted to compare themselves to their parents, however not in terms of knowledge but in terms of actions. They also wanted to know if finally their behaviour had a positive impact on their parents towards more sustainable lifestyles. Generally speaking, the children wanted to find out if their voices had been heard and whether their role in the family lifestyle had been taken into serious account.

5.6   Analysis of interviews with parents

In the first place 87 questionnaires were handed out to students along with consent forms for them and their parents and an information sheet with details of the project, potential benefits for the participants and the researcher's contact details. After one week time 19 consent forms came back to me signed by the parents thanks to the invaluable help of the Head of the school. The response rate was about 22%, not very high given the number of students in Year 5, but enough to provide me with rich information up to the point of data saturation where there was no new information.

From the 19 families that agreed to take part in the research 14 mothers came to school to be interviewed, three fathers were interviewed in their houses and in two cases both parents were interviewed in their houses. The mean age of the participants was 41 years old, the mean number of people in the house was four; and there were not any grandparents or other relatives in the house. The mean education level of the parents was from School College or university with a tendency to connect it to work, for example job training. Some other demographic characteristics regard the participants' working status, where the majority of fathers worked full-time (16 out of 18) while the majority of mothers worked part-time (11 out of 19) and some worked full-time (6 out of 19), the type of house (13 detached houses), the mean number of cars per family (mean number of cars=two), the mean number of miles per year (about 16,000 miles) and the mean annual family income which was about£45,250, while the household average income per year is£29,100[17] (in 2008-2009).

Before starting analysing the data from the interviews with parents I need to report that some parents gave more than one answers to some questions and some others did not answer at all. As a result, the number of responses to some questions varies, either exceeding the actual number of participants or not. All the interviews started with the assurance that a university protocol had been followed for the codification of names and personal details and confidentiality; and all of the participants assented for me to record the interview. Finally, I should not forget to mention that parents' words have been quoted verbatim, without any correction made by me.

5.6.1 Parents' perception and knowledge about the environment

In this section I am looking at how much the parents said they knew about the environmental impact of their lifestyles, in other words their environmental awareness; and if they had ever thought about the future perspective of their impact on their children's and their ancestors. In a nutshell, most of the parents said they knew somewhat about the environmental impact of

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[17] After taking account of all taxes and benefits, this is the average final income of household (Source: Office for National Statistics, "The effects of taxes and benefits on household income, 2008/2009).

their lifestyles but they admitted they did not have any difficulty in finding more information, indicating the internet as the main source. On the other hand, the majority of the parents said that they had associated their children's future with the quality of the environment and how it is affected by their actions, without though being prevented by this thought from doing something that would harm the environment.

In the first place, the parents were asked how much they said they knew about the environmental impact of their lifestyle and from a scale from 'not at all' to 'a great extent', 73.7% (14)[18] said 'somewhat', 15.8% (three) said 'a great extent' and only 10.5% (two) said 'a little'. Because of the fact that the vast majority of parents said 'somewhat' I asked if they had any difficulty in getting more information, and 11 parents said that they did not have any difficulty in getting better informed mainly because of the internet.

> *"No. I think with the internet these days you can find out what you want to know" (Mother)*

These are some of the outright answers which underlined the importance of the internet as a source of information. However, gradually we are moving to those answers which implied the importance of people's own choices in order to look for the necessary information. For example, two fathers and a mother said

> *"Information is there if you want" (Father)*

> *"I think I know where I can get it. I think it's more about going out and do it. Everything is on the internet basically" (Father)*

> *"It's probably laziness not choosing to find the information to be honest [...] We do try to follow this path as much as we can, but my life is driven by what I do on a day to day basis…"(Mother)*

These three answers show that the availability of information or the knowledge of the source of information are not enough to make people more aware of the environmental impact of their lifestyle, in this case. Laziness, was also mentioned as one of the reasons which may prevent people from searching for the information, conquering possible any interest.

Finally, there was also an answer given by a couple that addressed the role and responsibility of manufacturers for the provision of information in such a way that could help consumers to perceive and potentially reduce the environmental impact of their lifestyle

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[18] The numbers in the brackets are the actual frequency.

> *"Mother: In terms of recycling, I think they could make it more clear about what items can be recycled and what not. I am always struggling with the different types of plastic and aluminium cans.*
>
> *Father: I think it should be down to the manufacturers to make it physically seen. They should make it simple.*
>
> *Mother: For example these labels on packaging…"* (Parents)

There was one mother though who would like more information because she said the that there are some difficulties in getting more information and she mentioned only the simple distinction between the black and green bin

> *"...We are very aware that the black bin goes to the landfill and we have a green bin for recycling. Yes, I think there could be more information available to be honest"* (Mother)

These two categories of replies in essence are talking about lack of guidance and a need of more and better quality information, indicating indirectly their willingness to do more in a more proper way. However, there was only one participant who did not look for any information, which may result from ignorance or deep knowledge, where in this case some more information and knowledge would not make any difference.

> *"I don't really look for any"* (Mother)

But according to the respondent's answer to the question about how much she said she knew about the environmental impact of her lifestyle, which was 'a little', we can understand that this parent was not willing to look for more information because of lack of interest, and we exclude the option of deep knowledge.

After this question, the parents were read the definition of sustainable development (UN, 1987), stressing the future meaning entailed in the definition and if and how much this future perspective had prevented them from doing something now, having in mind that they harm the environment in which their children and their children's children are going to live. Most of the parents (15) answered positively, that they had thought about it, and their children's future in association with the environment they live and are going to live, is a main concern.

> *"I think it's very scary. For my child's generation and his/her (the sex was withheld) deliberately children especially"* (Father)
>
> *"I try to do what I can because I think of my children's future. I probably could do more"* (Mother)

Although the majority of the answers did not indicate if the parents had been prevented or not from doing something that would harm the environment, there were some parents (four) who admitted that this thought had been a deterrent factor for specific behaviours and actions in the present.

> *"Yes. Since he had our sons, both myself and my husband try to be more environmentally friendly […] Me and my husband are responsible for our children and I believe if we take a more responsible attitude and all the other parents do, then my grand children and great grand children will have a nice world to live in. Yes, having children has had an impact. And this made us not just to be more aware but also actively do a lot more"* *(Mother)*

> *"...I'll try to make decisions based on what kind of legacy I am going to leave to my children…I'll try to make decisions being aware of what the implications are"* *(Father)*

> *"I'm quite into that because I think it's very important really. Because of the fact that my son is nine and I want him to grow up into a world which is worth growing up into. I can say that it prevents me from doing something, but I am quite aware when I go to the supermarket and buy something…"* *(Mother)*

Through these responses, four interesting topics came up, which were the responsibility of being a parent and how it can affect the behaviour and lifestyle towards a rather pro-environmental behaviour, the importance of a healthy lifestyle and how it can be achieved through environmentally friendly practices (e.g. walking), the issue of imported products and air miles, and finally the issue of demand and supply for imported products; focusing more on the demand side from consumers and indirectly on the behaviour change needed in order to turn to local products and a different and more sustainable way of consuming.

On the other hand, there were also parents who said that they have thought about the impact of their lifestyles on their children's future in terms of the quality of the environment, but this thought did not foster them to change their behaviours or did not prevent them from doing something 'harmful' to the environment. In total of 19 parents, four of them admitted that they have not changed their behaviour because of the future impact of their actions and characteristically said

> *"I thought about it but it has not prevented me from doing anything. I do little things"* *(Mother)*

> *"I think about it but it does not stop me from doing anything. When we buy things it's a consideration and also the alterations we've made at*

home to make it more sustainable and environmentally friendly"
(Father)

"I wouldn't say we would change habits really. Probably I would be
more aware than we've been before…" (Father)

"No. I don't know if I do anything purposely differently about it […] We
do logical things but we don't do anything out of the way. But […] I
don't know if it is because we think about what is going to do but
because we know we should" (Mother)

It is very interesting to see that despite the fact that these parents were negative in terms of changing their behaviour, driven by the future perspective of sustainable development and their impact on the environment and their children's living conditions in the future; they said that they did some things for the environment which did not require much effort. Moreover, we should underline the fact that the awareness of what is right or wrong for the present; and the responsibility resulting from this knowledge were more important to them in order to adopt a pro-environmental behaviour, than the future perspective mentioned earlier.

5.6.2 Parents' consumption habits

The next step of the interview was to drive the questions towards participants' consumptions habits; starting with their motives behind that and the importance and priority they give to their needs, wants, environment and price when it comes to consuming. By understanding peoples' motives for consumption, as well as the factors that have an impact on their decisions, we can make, at least, assumptions about their willingness and flexibility to change their consumption habits and lifestyles. We are going to see in this section that the majority of the parents said that their decisions about consumptions were driven by their needs, where the environment was a medium priority but the price and the financial cost were on the top of their agenda. Moreover, talking about products and not about services, the packaging was also mentioned as a secondary factor, but still important; without forgetting though to mention the possibility of locked-in behaviours and choices because of their children's preferences.

In the first place they were asked if it was their needs or their wants they mostly used to think about when they decided to buy something. 78.9% (15) of the parents said that their needs were their priority, only one said their wants and three said both. With their responses, some of the parents addressed some important factors that possibly made them focus more on their needs. For example one mother said that she bought things based on her needs and she preferred products that lasted longer and another parent said that the current financial situation does not leave any margin for wants satisfaction. They said

"Financially, because things are more expensive now, probably it is more needs rather than wants." (Mother)

"I buy things now because of a need and I try to buy things that last. I don't do impulse buying." (Mother)

On the other hand, one of the parents highlighted the importance of current lifestyles saying that both wants and needs affect our choices but finally the wants are those which determine their life. This mother said exactly

"The half of your life is based on your needs and the other half is based on your wants. I think your wants overcome your needs in the way we live" (Mother)

After that, the parents were asked if the environment was a priority for them when it came to purchasing and they were also asked to indicate the level of priority from a scale starting with 'low priority' to 'essential'.

As it may be depicted more clearly in the following chart, the majority of the parents (nine) said that the environment was a medium priority for them while also a high percentage (seven parents) said that it was low priority. Only one parent said the environment was not a priority and two said that it was high priority. None of them said that the environment was essential though.

			Environment as priority for buying				
Motives for buying			Not a priority	Low priority	Medium priority	High priority	Total
	Needs	Frequency	1	4	9	1	15
	Wants	Frequency	0	1	0	0	1
	Both	Frequency	0	2	0	1	3
	Total	Frequency	1	7	9	2	19
		Percentage	5.3%	36.8%	47.4%	10.5%	100%

Table 5.6.2.1 Motives for buying and environment as a priority (N=19)

One parent who said the environment was a low priority admitted that it should not be so, showing in that way his sensitivity and awareness of environmental issues, and he justified his stance stressing the lack of time and the plethora of different choices. He knew what he should do but finally because of other factors he could not act according to that knowledge. Specifically, he said

"I think it should not be a low priority but when we go shopping, we are so busy and there are too many things to look at, you don't really take much notice." (Father)

Moreover, three parents wanted to clarify that the level of priority they gave to the environment when it came to purchasing or consuming in general may vary, according to the category that the material or immaterial wants or needs fall into. They said exactly

> *"It depends on what it is. If it is an electrical item or whatever, and we need it, we are going to buy thinking about the energy rating and going for the A" (Mother)*

> *"It depends on what it is. For holidays for example, we haven't been on an airplane for a very long time, because that's not good […] We've got a family car which has got lower CO_2 emissions. So, we base our holidays and the type of car we've got on the environment. But another purchases such as clothes, we get affordable things. With food, we try to buy certain things that trade friendly." (Mother)*

> *"It would depend on what I am purchasing. If I probably look for a car I would look for something more eco-friendly, or if I want a washing machine I would check the energy rating." (Mother)*

After having rated the environment as a priority as a decision-making factor for buying, the parents were asked if the price was finally a higher priority and 11 parents said definitely 'yes', one said 'no' and five parents said that the price played a part but there were also other factors that were taken into consideration when it came to buying. Among the answers that said that the price was a higher priority, the following responses are very interesting and worth being mentioned.

> *"Yes. If something environmentally friendly was in the same price as something that was not, we would definitely go for the environmentally friendly. Sometimes the environmentally friendly products are few pounds instead of few pennies more expensive, so I go for the cheaper" (Father)*

> *"If I can buy something that affects the environment and buy something at the same price that doesn't, then I'll go for the second. I'd say price is the number one priority" (Father)*

> *"Yes, it could be. They should make eco-friendly products cheaper" (Mother)*

> *"Yes. And I also think a lot of that environmentally friendly products are far more expensive. If only they were cheaper for people to buy. I never buy the cheapest products but equally I never buy the most expensive. And if they were cheaper than they are I would definitely buy them" (Mother)*

All these answers show that people were mainly influenced by the price of the products and services, however they did not forget to mention their willingness to buy environmentally friendly products but their price was a deterrent factor. Actually, they would not mind paying a little more in order to buy something that would harm the environment less or not at all and they stressed again the responsibility of manufacturer's to lower the price of these products and make them more approachable to people.

After that, there were also five parents whose answers indicated the importance of price but not as a determinant, and some of them are worth being quoted.

> *"Sometimes I suppose. It depends on the products you buy" (Mother)*

> *"It's about what you want sometimes over the impact on the environment. If there are two things and one is a lot more expensive but it is environmentally friendly, I would not go for it. Yes, the price does come into it. Not all the time, but mostly yes" (Mother)*

> *"It depends if it's a long term purchase. The washing machine for example usually lasts about 5 or 6 years and I thought 25 pounds more for an eco-friendly one is worth, because it saves money at home as well. So, it depends on the actual item that we buy. If it was a big difference in price, the price might have an impact then" (Mother)*

All of the responses above addressed the type of the product as a key factor for deciding to pay more and buy an environmentally friendly product or use eco-friendly services. They tended to 'weigh' the cost with the financial benefit and the environmental impact as well. So, in my opinion, through these answers we can see a margin to approach people, who are more environmentally aware and less reluctant to pay somewhat more and change their consumption habits.

Since it was obvious that the price was the most important factor that influenced participants' decisions for consumption, I wanted to find out if there were any other factors that could play a part, and especially in terms of the environment. Then the parents were asked what kind of things they could think about in terms of the environment when they bought something. To facilitate the process they were given some examples, like packaging or air miles. Packaging was mentioned 17 times as a concern, the origin of the products, if they were local or not, eight times, energy efficiency twice and two parents said nothing. Starting with the negative answer, this father said exactly

> *"We don't look at that. It's more about what we use and put in the right bin" (Father)*

This reply in effect discloses the power of habit of recycling, because it probably it has turned to a norm within the household, without paying any attention to the packaging they bring at home. This power of habit was also mentioned indirectly by a mother who described herself as a locked-in consumer because of her children's habits. Characteristically, she said

> *"But yes at the super market it does annoy me the amount of packaging*
> *which has been used; because my children like specific food I usually buy*
> *in order them to enjoy really; regardless of the packaging, but it does*
> *not stop me being annoyed" (Mother)*

This mother expressed her concern and annoyance for the excess packaging and her 'weakness' at the same time to stop buying specific products because of their packaging, since these products were her children's main priorities and gave them pleasure. Another answer which described a locked-in situation that consumers fell into is the following

> *"I would rather have less packaging but it's not easy to find. Especially*
> *at Christmas with children's toys" (Mother)*

This mother perceived herself as a locked-in consumer who cannot do anything to avoid packaging or the difficulty in doing so, especially during periods when the demand for products is much bigger. In essence, she 'blamed' the companies for that, stressing at the same time consumer's limit of options in terms of the amount of packaging in specific products and especially in specific periods. At the same time a mother also said that all this packaging was used for marketing reasons and she said exactly

> *"Packaging. We don't need the packaging. They use it to make it look*
> *nice but it does not make any difference because the product is still the*
> *same inside" (Mother)*

Two participants associated packaging not only with the environmental impact but also with the cost. Specifically, they stressed three categories of cost. First the extra cost for the production of packaging with direct impact on the price of the product upwards, secondly the cost of disposing the packaging after buying the product and third the externalities meaning the environmental impacts which result from the production of packaging.

> *"Packaging is a worry. Unnecessary packaging which adds to the cost,*
> *not to mention the production implications of that packaging. Also the*
> *cost of disposing of that packaging when it is not used it" (Father)*

> *"…My wife usually does the super market shopping and she usually buys*
> *less packaging products. There are two wins for me. One is the cost*
> *implication, the product you want to buy and reduce the cost; doing at*
> *the same time your bit for the environment. So wherever possible, I*

> *would not want to spend an awful lot more in order to appease the*
> *environment. So, it's part of it not the sole decision making" (Father)*

Regarding the mention made about the energy efficiency as a factor which affects the consumption decisions, a mother said

> *"…I also bought a new dish washer and I checked the energy rating and I*
> *wanted one which is energy efficient. And there was an A class and an*
> *AA class with 50 pounds difference and I preferred the most expensive*
> *one, just for the energy efficiency side" (Mother)*

Finally, as far as the origin of the products, eight parents said that they preferred local products for three reasons; first to support the local businesses and farmers, secondly for the quality of the products because they were fresher and thirdly for the environmental impact since they do not need to travel long distances. They said exactly

> *"Packaging, we usually buy local products to support the farmers and*
> *local butchers" (Father)*

> *"I like buying local products because you know it's fresher but it has not*
> *all to do with the environmental impact. It has to do with the quality of*
> *products since they don't drive long." (Mother)*

Because of the fact that packaging was mentioned so much as one of the reasons that may have influenced consumers' choices or at least fostered them to think about the environment; I decided to ask participants if they checked the labels of the products to see if the packaging was recyclable, when they usually did it, before or after buying and if this could affect their final decision. So, 13 parents said they did check the labels of the products regarding packaging, and from this number eight said after buying, one before and three said they checked some before and some after. However, there was a negative answer saying that they did not check the labels, without that meaning that they did not recycle. Characteristically, this mother said

> *"No, I just recycle everything. I don't check the labels even after buying. I*
> *put everything in the recycling bin" (Mother)*

And this statement may have proved that recycling had been a norm within the household, but we could say more about it when we analyse what the parents said about their day-to-day pro-environmental behaviours.

At this point I would also like to mention the words of two parents who addressed a difficulty and a motive respectively, in terms of packaging and recycling. So, one mother said

> *"Yes, I check the labels. Some before I buy and some after. But I tend to do a lot of internet shopping, so it's a bit difficult to check the packaging beforehand" (Mother)*

This mother addressed a difficulty because of online shopping. She really wanted to check the labels, and if she could, probably she would decide accordingly, but the fact that web sites did not include information about the packaging and recycling options really concerned her. In my opinion, this would be a very good idea for the online market to integrate and develop further.

Finally, the quote that indicates a motive for checking the labels is the following

> *"After we've bought things, because of the bin situation" (Father)*

This father made it clear that the infrastructure, in effect the existence of green bins, made them start thinking about recycling in the first place and then about packaging and checking the labels, in order to separate waste correctly.

5.6.3 Parents' lifestyle: How 'sustainable' do they feel it is?

After this series of questions which were focused on more practical aspects of consuming decision making, the participants were asked how they *said* about their current lifestyle and the environment. In this section we will see that most of the parents said they would like to do a bit more to help the environment, while at the same time they had already done quite a few things that are environmentally friendly. Finally, regarding the relation between family income and sustainable lifestyle, we could not generalise and come to concrete conclusions, because the findings do not prove any kind of relationship between these two variables, since there were high income families that used to care a lot about the environment and others which did not, and the same was the case for families of lower family income.

They had to choose one of the possible answers included in the table below.

Feelings for current lifestyles (N=19)		
	Frequency	Percent
I'm happy with what I do at the moment	4	21.1%
I'd like to do a bit more to help the environment	9	47.4%
I'd like to do a lot more to help the environment	6	31.6%
Total	19	100.0%

Table 5.6.3.1 How parents said about their current lifestyle and the environment (N=19)

As we can see from the table above, the majority of parents said that they would like to do a bit more to help the environment, implying a kind of satisfaction with what they have been doing already; and only three parents less said that they would like to do a lot more to help the

environment. These responses should be compared to those about their actual current lifestyle. However, in my opinion, it is positive that the parents had this little feeling of 'insufficiency' and consciousness; because they give leave a margin for further improvement and engagement.

Within the process of investigating people's feelings about their current lifestyles, I asked the participants if there had been any times they felt guilty for things they had done and harmed the environment. 15 parents admitted they had guilt feelings for specific things they had done or habits and three said they did not have any. Some of the reasons they caused these guilt feelings were the use of plastic bags at the super market, the use of deodorants, cleaning products, aerosols (mentioned twice); the use of cars, which was the most common reason mentioned by six parents, the type of car, the packaging (mentioned twice) and the over-consumption of food which ended up in the rubbished bin expired. Some quotes from parents' interviews give extra information for example about locked-in behaviours, time constraints, over-consumption and ignorance.

> *"I have to say that I tend to buy individually wrapped staff for the children for school because it's easier." (Mother)*

> *"The packaging of the products that I buy, especially food because my children like them. They like the same things all the time. So, I buy them because we are going to use them." (Mother)*

> *"Yes. Sometimes when I use my car I feel guilty and that's because of what I do, what the kids do, where I work, the hours I work… it's a kind of unavoidable." (Mother)*

These three quotes indicate parents' locked-in behaviours because of convenience, their children's choices and because of everyday routine, which includes parents' and children's activities, time schedule and area of work and living.

However, one of the parents who said they did not have any guilt feelings, said exactly

> *"In honesty, no. But it's probably ignorance because I don't think about that" (Mother).*

But this mother, in the question about how she felt about her current lifestyle in terms of the environment, had said that she would like to do a bit more. So, in combination with her ignorance and non-existence of guilt feelings, probably her response was because of her limited willingness to try harder or low environmental awareness.

After the investigation for guilt feelings, I wanted to investigate also the 'drop-in-the-ocean' feelings of participants, namely if they said that their own contribution as individuals is worth and can make a difference. So, they were asked if they thought that it was not worth doing things to help the environment if others do not do the same. 13 parents said that the so called 'drop-in-the-ocean' feeling does not affect them, and they believed that every little individual effort could help. On the other hand four parents said that a collective effort is needed while the individual contribution cannot solve the problem. The parents who were positive about the impact of individual help also stressed the need for somebody to pave the way. Moreover, this situation may result in either a virtuous or a vicious circle where everybody or nobody will do anything respectively. Four parents said exactly

> *"No, If you don't do it because others don't do it then nobody will do it"*
> *(Father)*

> *"It is worth. Somebody needs to stay up sometimes and most will*
> *follow." (Father)*

> *"If you don't do it how you expect everybody else to do it." (Mother)*

> *"I think no matter how small an individual is I think you can make an*
> *impact. And really it's up to the people to encourage other people"*
> *(Mother)*

On the other hand, there were parents who said that the individual help is so small that cannot have a substantial impact able to make a difference and one parent also addressed the issue of convenience how willing people are to sacrifice it to help the environment even if others do not do the same.

> *"There is an element of that but if it's something that I can do anyway*
> *and this is not massively inconvenient for all my family then I would do*
> *it anyway. But if it's something to go the extra mile, then there is an*
> *element why I do this while nobody else does it" (Mother)*

Leaving the section of feeling, the parents were asked about their actual lifestyle, in essence what they did in their everyday life. The table and chart below show that the majority of the parents said that they did quite a few things but there was also a substantial percentage that said they did one or two things. These responses will be compared to those that parents gave to the question about how they said about their lifestyles in terms of the environment.

Parents' current lifestyle (N=19)		
	Frequency	Percentage
I don't really do anything that is environmentally friendly	0	0.0%
I do one or two things that are environmentally friendly	6	31.6%
I do quite a few things that are environmentally friendly	8	42.1%
I am environmentally friendly in most things I do	5	26.3%
I am environmentally friendly in everything I do	0	0.0%

Table 5.6.3.2 Parents' current lifestyle (N=19)

As we see from the table, there were also a number of parents (five) who said that they were environmentally friendly in most things they did. If we focus on the frequency we will see that the differences are not that big; a fact that is quite positive for the level of parents' environmental awareness and behaviour. At this point I thought it would be very interesting and useful to combine how parents felt about their lifestyle with what they said about their current lifestyle. I will just assume and make the following sets of responses from both questions.

Parents' feelings and current lifestyles			
Current lifestyle	Frequency		Feelings
I do one or two things	6	6	I'd like to do a lot more
I do quite a few things	8	9	I'd like to do a bit more
Environmentally friendly in most things	5	4	I'm happy with what I do

Table 5.6.3.3 Combination of parents' feelings and current lifestyles (N=19)

In order to make this quite interesting table, I envisioned in my mind a reverse pyramid where the more things people said they did the less they said they would like to do; and I observed that the frequencies for each category were almost equal. Indeed, almost the same number of people who said they were environmentally friendly in most things they did also said that they said happy with what they did. But from the table 5.6.3.3 where I matched exactly what people said they did with what they felt, we can see that they are not the same people. Likewise, this is the case for the rest two categories, making us conclude that there was a consistency in people's answers, self-awareness and also we can say that the possibilities of ignorance, for example for people to say that they were happy with what they did despite they did only one or two things, were limited.

After a closer and more meticulous look at table 5.6.3.3 we will see that there were five people who said they were 'environmentally friendly in most things they did' and four of them said also that they would like to do a lot more. I think that this is a very positive trend showing people predisposition to continue and improve their good effort to be more environmentally friendly and finally change their lifestyles. A rather moderate but also positive trend can be

noticed if we look at those eight people who said that they did quite a few things and five of them said they wanted to do a bit more and one said a lot more. Finally, it is also very positive that people from a lower level and specifically four out of six who said they did one or two things said they would like to do a bit more and one said they would like to do a lot more. Generally speaking, we can infer a positive tendency and willingness of people to improve their pro-environmental behaviour, which possible can imply a margin for children to influence their parents to this direction.

At this point, I think that it would be quite interesting to see how these responses are allocated across the different levels of family income. Of course the data is not sufficient to provide us with concrete evidence to come to general conclusions; however, I can use these data to give a rough picture of the role of income in people's behaviours and decision making process. But what I observed throughout the interviews with the parents was that regardless the family income, people tended to mention cost, price and budget as the main drivers.

What somebody would possibly expect to find out is that people with high family income would answer mostly that they were environmentally friendly in most things they do, and people with lower family income would say that they did quite a few, or one or two things that were environmentally friendly. This assumption resulted from the fact that the role of price and cost in families' decision making was mentioned so much by the participants throughout the interviews. But as teachers and experts had said in their interviews, this is just a feeling but in effect none of them had managed to make any generalisations about the role of income and people's pro-environmental behaviour. However, there is also the other side of the same coin, where higher income means more consumption and consequently more environmental damage. But according to the parents (15 out of 19), they were driven by their needs rather than their wants when it came to buying. This can possibly be linked with the importance they give to the financial motives, which have the potentials at least to reduce their consumption. The following table gives a rough picture of the allocation of income levels among the categories of lifestyles.

Household annual income * Current lifestyle					
		Current lifestyle-1st member			
		I do one or two things that are environmentally friendly	I do quite a few things that are environmentally friendly	I am environmentally friendly in most things I do	Total
Household annual income	10,000-14,999	0	2	0	2
	15,000-19,999	1	0	0	1
	25,000-29,999	0	1	0	1
	35,000-39,999	1	0	2	3
	40,000-44,999	0	1	0	1
	50,000-59,999	0	1	1	2
	60,000-74,999	2	1	0	3
	75,000-99,999	1	1	1	3
	100,000 or more	0	1	0	1
	Don't know	0	0	1	1
	Refused	1	0	0	1
	Total	6	8	5	19

Table 5.6.3.4 Family income and parents' current lifestyle (N=19)

Feelings about the current lifestyle	Current lifestyle
B	D
A	C
B	C
B	C
B	C
C	B
C	B
B	C
A	D
C	B
B	D
B	C
A	B
B	D
B	D
A	C
C	B
C	D
C	C

Feelings about the current lifestyle		Current lifestyle	
I'm happy with what I do	A	I'm environmentally friendly in everything I do	A
I'd like to do a bit more	B	I'm environmentally friendly in most things I do	B
I'd like to do a lot more	C	I do quite a few things	C
Don't know	D	I do one or two things	D
		I don't really do anything	E
		Don't know	F

Table 5.6.3.5 Parents' match of feelings about current lifestyle and actual current lifestyle (N=19)

As we can see in the Table 5.6.3.4 there is not any chance of generalisation since there are people from the lower income levels who said that they did quite a few things and people from the higher income levels who also said they did one or two things. Moreover, there were people around the average income level in all of these three categories. As a result, we cannot infer that families with higher income are more likely to adopt pro-environmental behaviours and vice versa, because the association of pro-environmental behaviour and sustainable lifestyles with money saving and cost cuts is strong and present in any level of family income. If this is the case, then the fact that there are families with high income which do only one or two things for the environment may be explained by the fact that these families do not face any financial difficulties in order to see sustainable practices as a way to save money.

For example, being environmentally friendly may be voluntary for some families with high income but the only alternative for those with low income, which may not associate actions such us turning off the lights with pro-environmental behaviour, but they only see it as a way to save money. So, the motives are different for different levels of income, but this is just a scenario. What I noticed is that even parents with high family income regarded saving money as the most important driver for environmentally friendly behaviour. I am of the opinion that

this is linked with the current financial situation in which the research took place, when even the middle class families try to save money and limit their expenses.

In effect, we cannot generalise since the allocation of income levels across these categories of lifestyle seems random, but the possibility of behaviours based on rational choices (e.g. financial motives) is particularly enhanced, according to the parents' interviews and the importance they give to this kind of motives. Some examples where the cost is a priority followed by environmental motives can be seen below

> *"About the heating we don't keep it in a low temperature but we are comfortable. It's about the cost but not only about the cost" (Father)*

> *"…for example we turn off lights and appliances <u>but from the bills perspective</u>" (Mother)*

> *"We have changed every bulb to energy saving bulb. We turn lights and other appliances off. We have taught our child as well to do the same. We do that as a matter of cost as well" (Father)*

> *"We do things like turning lights off, but from a cost point of view and not environmental" (Mother)*

5.6.4 Parents' pro-environmental behaviours

After having examined people's feelings and opinions about their lifestyles, I tried to elicit information about their day-to-day pro-environmental behaviours and practices. Likewise what happened in the school, again I ascertained that energy/electricity, water and waste were the main themes where the families focused on. For example, everybody mentioned recycling, electricity saving by turning off the lights and other appliances (e.g. TV), and also water saving was mentioned by at least by 13 parents out of 19.

This study also addresses the topic of sustainable consumption, trying to see how a strategy for Education for Sustainable Development can lead families indirectly to the principles of sustainable consumption and finally to more sustainable lifestyles in general. Hence, in this section I found out that the three main pillars of sustainable consumption, consume less, differently and responsibly had been stressed by the parents unintentionally. Again, the financial factor was mentioned both as a deterrent factor because some environmentally friendly products and services are more expensive, as well as a positive or 'rational' way to save money through some pro-environmental behaviours.

The table below depicts a rough categorisation of the families' pro-environmental behaviours in the everyday life.

Families' pro-environmental behaviours[19]			
Category	Through (i)	Through (ii)	Reasons
Energy / Electricity Saving	Turning off lights and other appliances (19)		
	Washing and drying (6)		
	Installing energy meter (3)		
	Energy efficiency	Energy-saving bulbs (11)	
		Insulation (6)	
		'A' Energy class appliances (1)	
	Heating (7)		Use of thermostat
			Use of timer
			Keep doors closed
			Do not like it very warm
Water Saving	Shower instead of bath (13)		
	Turning the tap off (12)		
	Collecting rain water for plants (7)		
	Sharing bath water (4)		
	Saving water in the cistern (3)		
	Using bath water for plants (1)		
	Installing water meter (1)		
Waste	Recycling (19)		
	Reducing waste and consumption	Reusing items like empty jars, tubs or scrap paper (17)	
		Wasting less food (15)	
		Using their own shopping bag (11)	
		Reducing waste in general (4)	
		Packaging (3)	
		Using less carrying bags (2)	
		Using environmentally friendly bags (1)	
		Menu plans and shopping lists (2)	
	Composting	Garden waste (7)	
		Household waste (3)	
Walking and use of car	Walking more (10)		
	Economical car (1)		
	Car sharing (1)		
Growing their own food	Growing fruit and vegetables (4)		

Table 5.6.4.1 Families' pro-environmental behaviours (N=19)

According to the table above, we can see that the three pillars of sustainable consumption, consuming less, responsibly and differently are addressed throughout families' day-to-day life, for example the reduction in energy consumption for heating.

> *"We try to keep the heating off as long as we can. We don't like it very warm. We put jumpers on instead of turning heating on" (Mother)*

Some very good examples of responsible consumption are the following

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[19] The numbers in the brackets represent how many times each practice was mentioned. Every parent had the option to mention more than one.

> *"I do a menu plan for the whole week and I only buy what I need because we used to waste a lot of things"* (Mother)

> *"We also do try to make sure that everything in the fridge has been eaten"* (Father)

> *"…we are trying to buy what we are going to eat"* (Mother)

Other examples of consuming differently follow

> *"When I am buying things I always look at the packaging and I prefer buying something loose"* (Mother)

> *"…I use a website called 'freecycle' and you can take things that people offer instead of ending up in the landfill"* (Mother)

Moreover, people's preference for local products is a very good example of consuming differently. Where 11 parents said that they preferred buying things from local suppliers and retailers, but their motives were more quality rather than environmentally driven, since the quality and taste of local products resulting from the fact they are fresh were mentioned seven times and the support of local community and business was addressed four times. However, the factors of cost and price were said to have influenced and turned people to local products.

> *"I like to buy things in season because they are cheaper; they are nicer and supporting local people, local firms, they don't travel very far and I think it's also a motive that I feel good by eating local products which have been grown just down the road"* (Mother)

After all these mentions of the cost as a determinant and of the saving money efforts, I asked participants if they had thought that it was only worth doing environmentally friendly things if they saved them money, and 17 said no, but eight admitted that it was an extra and strong motive, without necessarily being the only reason. There was also a parent who said yes and another one who said that it was not the only reason but the main reason.

> *"I think most of the environmentally friendly things are more expensive and people are on tight budgets now. I think it's a factor. But no. Money is not the only reason"* (Mother)

> *"…90% of what we are doing is driven by running down our living cost and also by the environment. But mainly it's cost driven"* (Father)

In these two previous quotes, the current financial situation was taken into consideration, by saying that "people are on a tight budget now" and "…running down our living cost", implying in some way that things and people's choices may be different if the situation was different.

Finally, in the last two quotes we can have a rough idea of people's level of willingness to pay for environmentally friendly products, observing a stark contrast, where one mother talks about a difference in price of a few pennies and the other one said that only a price three times higher would prevent her from buying the environmentally friendly products.

> *"No, but I would not spend lots more on it. If it was for a few pence I would buy the more environmentally friendly version of it" (Mother)*

> *"No. It comes to money when it is 3 or 4 times more expensive. Yes, we only want to save money. But money is not the main issue to me. The first thing for me is the environment and not saving money" (Mother)*

But what is very interesting is that the first mother had an annual family income £75,000-99,999 while the second one had £35,000-39,999; make me ascertain for once more that the income is not a determinant for people's pro-environmental attitudes in the first place and then their pro-environmental behaviours.

After this section with various questions about peoples' feelings and current lifestyles in terms of the environment, the participants were asked about their tendency and willingness to change their habits and habitualise more environmentally friendly behaviours. When parents were asked whether they found it hard to change their habits to be more environmentally friendly, 36.8% (seven) answered yes because it takes time given the time constraint, busy lifestyles and because a learning process is needed. On the other hand, 63.2% (12) said no, showing that they were willing to change and be quite adjustable. I think it is worth quoting some interesting views of the parents, especially from those who found it hard to change their habits.

> *"Yes. It takes a while to adjust. Everybody has the capability to adjust but you need to go through the process of learning" (Father)*

> *"Yes, only in the beginning. It has to do with what we are used to. When you change something it seems to be different but when you do it and get used to it, it becomes second nature…" (Father)*

> *"It depends to what extent […] Probably I would find it a little difficult. Yes" (Mother)*

On the other hand, when parents were asked if they believed that any changes they made to help the environment needed to fit in with their lifestyle, 63.2% (12) said yes and 36.8% (seven) said no. The main reason why they agreed was that because it is easier if they fit in, automating these actions and reducing the amount of effort they need to put in.

> *"Yes. It's easier. You do it automatically. You don't need to think about it and put an effort all the time" (Mother)*

The lack of time because of busy lifestyles which results mainly from having children was mentioned, as well as a kind of cost-benefit analysis of these changes.

> *"It depends what we have been asked to do. For instance, recycling instructions over the last 10 years are not a problem. You just need to think about it. For example, changing the energy bulbs it's about awareness of the cost savings and the impacts" (Father)*

Finally, the participants were asked if they talked often to friends and family about things they could do to help the environment if they tried to persuade people they knew to be more environmentally friendly. The responses were almost equally distributed with ten parents having said 'no' and nine 'yes'. It is interesting that among the participants who said 'no', there was a parent who may have done it but in a different context, motivated by the financial benefit. He said exactly

> *"We don't instigate conversations about the environment with our friends, what I may say to some of my friends is how they can save money from the electrical appliances for example […] My thinking is round trying to make them save money and how I did it for myself" (Father)*

On the other hand, among the participants who said 'yes', most of them said that it happened occasionally and mostly in the form of suggestions and information provision.

> *"I may have made some suggestions but I can't think of any example. If I notice that somebody is doing something very wasteful, I will mention it" (Father)*

> *"It was not about persuading but giving the information about the choice that they can help the environment and save some money as well" (Father)*

Moreover, a mother who did the same trying to persuade her parents to start recycling and buy an environmentally friendly car said that the financial benefit of the car was that which play a determinant role for the final decision. She said exactly

> *"My mum, yes. We persuaded her to recycle. She did not use to do anything before. My dad wanted to buy a new car and now he's got a really good environmental car. I think mostly because of the money benefits and the car taxes which are hardly anything. I think the*

financial benefits persuaded him, but he also listened what we had to say" (Mother)

To sum up, the majority of families focused on energy and water saving and recycling as the main ways towards pro-environmental behaviour. Regarding the role of income on people's sustainable lifestyles, we cannot generalise since even families of higher economic background considered cost, prices and budget very important and of higher priority. Moreover, money saving through environmentally friendly behaviours was also the main motive for instigating a discussion with friends.

5.6.5 Sources of influence for pro-environmental behaviour

The next and most important part of the research was to find out the sources of influence for parents' pro-environmental behaviour and finally ascertain if children are one of these factors. The process followed to elicit this information has been explained thoroughly in the chapter of methodology.

Hence, regarding children's influence on their families' sustainable lifestyles, only four parents mentioned their children as a source of influence, either after a probe by me or on their own, and two mentioned education and schools, which indirectly involved children.

Other sources of influence stated in the first place were mainly media; at least 12 parents said so, two mentioned friends and family and the cost and pricing were mentioned twice as well. There was also one parent whose statement is worth mentioning, because she said that the way she wanted to live and her ethos were the main sources of influence for her to become greener.

"Books, media, how I want to live, my ethos" (Mother)

I think it would be interesting to see some of the words that parents said and how they stressed the role of school and their children.

"The children probably. They come from school and say do this and do that. The eco-warriors club has influenced her" (Father)

"I think the children make us more conscious as they come from school with different ideas and suggestions, but the biggest driver is cost" (Father)

"…I think there is more education in the schools, and then it's going back to the families […] I don't think there is any particular influential source, it's just what you know" (Mother)

However, the following table shows the most commonly mentioned sources of influence, which were TV, the desire for their children to live in a better world (17), the TV (16) (e.g. news, programmes etc.) the feeling of care for themselves and where they live (14) and further down but at the same level the ambition to help future generations to live in a safe environment (12), the magazines (12) and the feeling of respect towards the environment (12). We see that the quality of children's lives and environment in which they live in the long run concerned parents; influencing them indirectly, just through their children's existence.

According to parents' responses, we could say that they are driven more by less altruistic criteria, since the factors which involve themselves, their children or their life in the future, generally the fact that they are parents are high in the ranking. On the other hand, the factors which could be described as more altruistic where the participants themselves or their children are not involved but more importance is given to the quality of life of and care for our fellow people. The improvement of the world and the treatment of the environment as a public good are very low in the ranking. So, the participants stressed a rather family-centred way of thinking and criteria in terms of influence towards more sustainable lifestyle, where in essence they pursued their own and their children's good.

5.6.6 Children's influence on their parents' sustainable lifestyles

The main aim of this study is to examine if and how the children influence their parents' pro-environmental behaviours, hence they were asked exactly if they thought they had been influenced by their children to turn themselves 'greener'. Most of the parents said that they had been 'somewhat' influenced by their children, with a positive tendency towards higher levels of influence; but the reason of this influence did not result only from children's encouragement but also from the state of being a parent. In this section we can also see an interesting categorisation of the parents in terms of how they perceived their children's influence. Finally, regarding the consistency between parents' and children's perception of influence, we can say that children were a bit more optimistic than their parents.

Children's influence on parents (parents' perceptions, N=19)
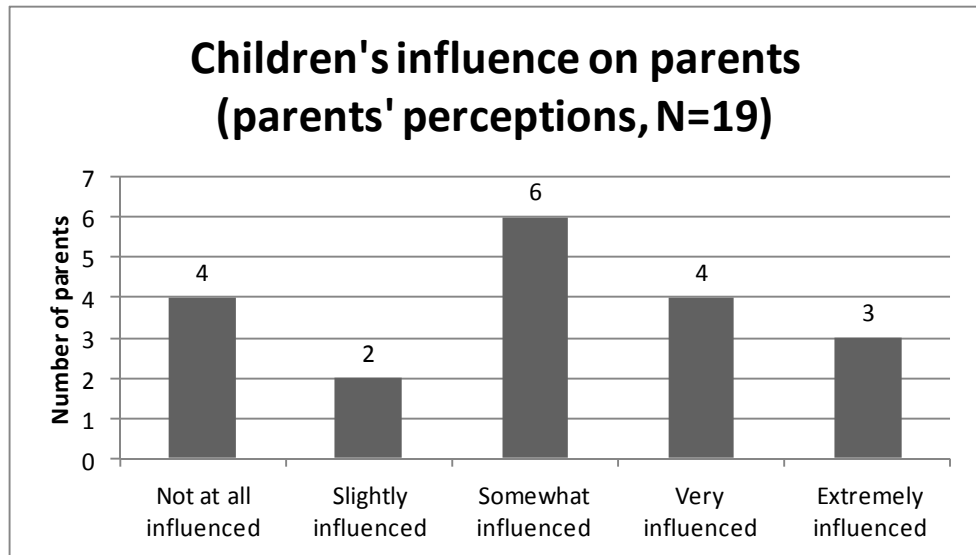
Chart 5.6.6.1 Children's influence on parents (Parents' perceptions, N=19)

From the chart above we can see that the differences in parents' responses are 'slightly', when six of them said they were 'somewhat' influenced, four said 'very influenced' and also four said 'not at all' influenced. However, in my opinion it is quite optimistic that three parents said they were 'extremely' influenced exceeding in total the number of parents who were not at all or 'slightly' influenced.

After parents' responses, I managed to identify five categories of parents in terms of how they perceived their children's influence on them towards more sustainable lifestyles, and I am quoting an example from each category.

The first category is of those parents who have been influenced by their children because they had brought information from school, friends, media and social environment.

> *"Yes, because they have been influenced by their own environment and friends and again because it's such a topic of conversation everywhere around them, for example the media, the school, the environment" (Mother)*

> *"Yes, they do a lot more in school. I am very influenced because they talk about it a lot, which is nice because somebody else is telling them what we try to tell them for years. They are happy to do it, because everybody else in their peer group is doing" (Mother)*

The second category consists of those parents who have been influenced by the fact they have had children and not by their children themselves.

> *"I think having children has influenced me more because you might be worried about the world they are growing up […] I am influenced by the fact I have them in my responsibility" (Mother)*

> *"I am very influenced by having them. I am influenced because I have children but not influenced by them"* (Mother)

The third category consists this time of those parents who teach and get taught by their children at the same time.

> *"She is always telling me, I am also telling her but she is always telling me. And I think we can learn a lot from our children. They learn a lot at school. We can grow along with our children and adapt and adjust"* (Father)

The fourth category includes those parents who have not been influenced by their children, probably because the latter do not understand or do not bring information at home.

> *"I am not influenced by my child at the moment. It's the other way round. My child does not mention anything about the environment, probably because he does not understand"* (Mother)

> *"She never mentioned anything. She does not tell me anything about school. But she tries to influence her younger sister by telling her to turn off the tap because she is wasting water. She heard that from me"* (Mother)

It is interesting also to notice in the last example that despite the fact that the child did not influence their parents; they did continue the path of influence towards the younger members of the family, stressing the presence of a potential hierarchy. This is also very optimistic because I think that the children still want to feel they can influence and have their voices heard in one way or another, no matter to what direction.

The fifth and last category consists of those parents who have not been influenced by their children because they had already adopted pro-environmental behaviours, before the children became aware of these issues.

> *"I am not at all influenced. And it's very rare when he brings information at home. To be fair, he probably knows more about it from me. He is not teaching me anything if that makes sense. All he is doing is informing me about what he has learnt. He is not teaching me to be environmentally friendly because what he is telling me I already know and I am aware of"* (Father)

> *"I have done things for years really. I can't say that I have done anything quite recently that I have not done before. I was pro-active. He influences me in the way that I want him to grow up in a better world that he enjoys. So, his presence and his future influence me more than my child himself"* (Mother)
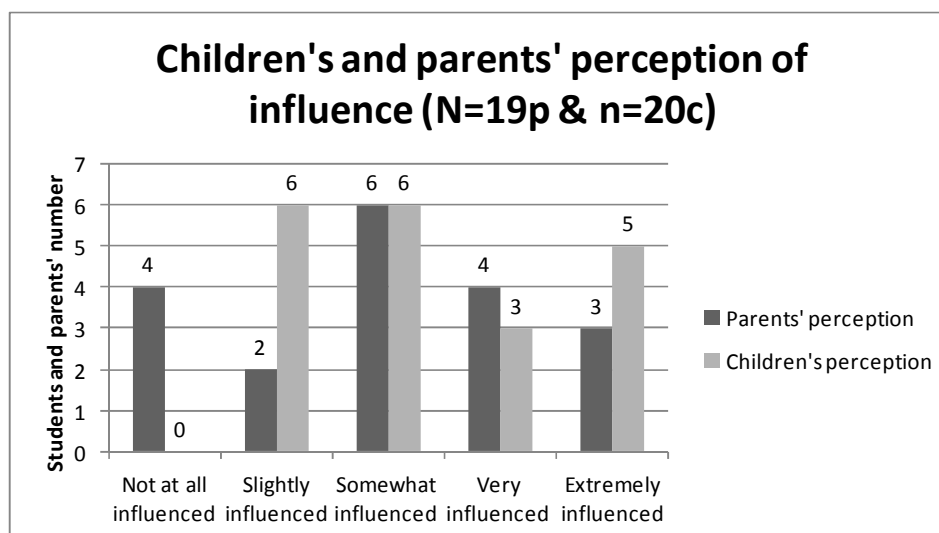
Chart 5.6.6.2 Children's parents' perceptions of influence (N=19p & n=20c)

From the chart above we can see that almost equal percentages of parents and children said they had been somewhat influenced and had influenced quite a bit, respectively. This consensus in children and parents' views shows that children perceived their role and 'power' almost the same as their parents did, for this level of influence. But generally speaking, the influence was not considered big either by children or by parents.

However, the differences for the low levels of influence are quite stark. Specifically, parents were more inclined to believe in more extreme levels of influence such as 'not at all' and 'very', indicating a rather strict perception of influence. On the other hand, none of the children said that they had not influenced their parents and six said they had done so 'a little'. In my opinion this is an indication that most of the children believed that they had exerted some influence on their parents and their opinions, advice or suggestions had not been ignored by their parents. But it is important to see that there is a consistency in children and parents' responses, since they agreed on a medium level of influence ('somewhat' or 'quite a bit').

It is very interesting to see that the cumulative number for the levels 'not at all' and 'slightly' or 'a little' influenced for parents is 6 and for children is also six, and respectively for 'very' or 'quite a lot' influenced and 'extremely' or 'a lot' influenced is seven for parents and eight for children. Consequently, despite the fact that these differences are not very big, we could say that the children had a slightly better perception of their own influence on their parents' sustainable lifestyle than what parents said about their children's influence on them. A possible explanation is that parents may have given wrong feedback or impression to their children, regarding the things they finally integrated in their behaviours. Finally, another explanation may be the fact that the children possibly had overestimated their efforts to

influence their parents, driven by strong pro-environmental behaviour at school, which is also justified by children's' claims about their satisfaction with their own effort to be environmentally friendly at home, where 40% (n=20) said they were happy or satisfied and 35% (n=20) said very happy or very satisfied.

Now, after matching exactly what the children said with what their parents said, I made the following table in order to find the trend of the final influence on the parents and if it is finally affected by the level of influence the children said they had on their parents.

	Child	Parent		Not at all	A little	Quite A bit	Quite a lot	A lot
				Specific children and parents' perception of influence				
1	5	**4**		Not at all influenced	Slightly influenced	Somewhat influenced	Very influenced	Extremely influenced
2	3	**1**		1	2	3	4	5
3	5	**5**			Absolute consistency		5	
4	2	**2**			Children better		9	
5	5	**3**			Parents better		5	
6	2	**5**			One level		7	
7	5	**3**			Two levels		5	
8	2	**1**			Three levels		2	
9	5	**3**						
10	3	**3**						
11	4	**5**						
12	2	**1**						
13	4	**3**						
14	2	**2**						
15	3	**4**						
16	3	**4**						
17	4	**1**						
18	2	**4**						
19 & 20	3	**3**						

Table 5.6.6.1 Match of children's' influence and parents' reported level of influence (N=19p, n=20)

Hence, from the table above we can see that children were more positive and optimistic about their influence on their parents but we can also notice that there was an absolute consistency in both sides' answers, mainly for level two (slightly influence and a little influence) and level three (somewhat influenced and quite a bit influence). However, we cannot say that the more confident the children felt about their influence on their parents' sustainable lifestyles the higher the influence finally was. Because from the four children who said they had influenced their parents 'a lot', finally only one parent said they had been very influenced by the child.

The other three parents said they had been 'somewhat' influenced. Likewise, there were two children who said they had influenced their parents 'quite a lot' but one parent said that they had been 'somewhat' influenced and the other one said 'not at all'. In general, the consistency was particularly strong because despite there being discrepancies; they were mostly of one-level.

As I did with the first case study, after having observed some influence from children on their parents' pro-environmental behaviour, an influence that both sides reported through their questionnaires and interviews; I asked children to rank the areas they felt they had the bigger effect on their parents' sustainable lifestyles. After some very simple calculations, bearing in mind the frequency and the level, the ranking of the changes was the following.

Rank	Action	Points
1st	Recycling	87
2nd	Turning off the lights	58
3rd	Turn off the TV or other appliances	27
4th	Save water	18
5th	Save electricity/energy	16
6th	Walk more	16
6th	Use the bus	13
6th	Turning off the tap	13
7th	Growing food (fruit and vegetables)	12
8th	Energy saving bulbs	9
8th	Don't litter / Cleaning	7
9th	Start a discussion about the environment	6
10th	Using the brown bin for garden waste	4
10th	Replace bath with shower	4
11th	Drive less	4
11th	Use the bike	4
11th	Reuse bags	3
12th	Composting	2
12th	Using the bus	1

Table 5.6.6.2 Point system

From this table we see again that the children said that they had the strongest influence on recycling, energy and water as was mentioned by experts, teachers, children through the questionnaires and parents.

After that, the parents were asked to describe, if they could remember, what they had started doing to change their lifestyles to protect the environment after their children's suggestions. Most parents said that they started walking more, especially to school, after children's encouragement, who in turn where motivated by the school competition *"Walk to school week"*. Then, recycling was also one of the key things they started doing, as well as energy (electricity) saving practices were taken on board. Moreover, saving water, reusing things and riding the bicycle were some of the children's suggestions but not very frequently mentioned. But this is exactly what I was expecting to find, since the school focuses on energy, water and

waste management, mainly through recycling. I should not forget to mention here, that these cases where the children not only suggested potential changes but also checked their parents if they kept following these suggestions. A mother said characteristically

> *"…She is good at keeping us in check. She wants to know if there are other things we can do. She wants to do the compost and we are under pressure to do this. This would be next thing" (Mother)*

On the other hand, there were some parents who said that their children did come back after school saying what they had done or learnt about the environment, but in effect they did not suggest anything, because their parents had already integrated these practices a lot in advance.

> *"My children have come a couple of times after school saying we should turn the lights off and stuff like that but they have not come with too much information. Occasionally, they have come home saying we have done this at school, but I think because we already do the things they talk about, it's not a big deal. We are pro-active" (Mother)*

Then the parents were asked to narrate their story, how everything started and what the motive was for them and their children to start altering their lifestyles. Most of the parents said that their children's school was the main source of motivation for their children, having mentioned more specifically, various activities such as composting and the 'walk to school' competition, groups at school such as energy monitors and eco-warriors and finally experts who visited the school like climate-cops. Moreover, there were parents who mentioned that leaflets, information material, news and documentaries gave a powerful push to their children to start thinking and discussing about the environment and acting accordingly. I think that at this point I should quote a mother's story which discloses children's critical skills and decisiveness, and what this mother said after that.

> *"He has adopted an orangutan through WWF, and there were some leaflets about the forest and things like that, and we read them and started talking about topics like these. That started him asking questions and then he said "Why don't we do anything?""(Mother)*

This mother told me that after this question she felt guilty and irresponsible. It was then that she started changing her behaviour to a more pro-environmental behaviour.

To sum up, we can say that both parents and children reported an influence derived from the latter on families' sustainable lifestyles, either this is a medium influence ('somewhat') or higher. Generally speaking, the children seemed to be more optimistic about their ability to

influence their parents' pro-environmental behaviour; and later on, this influence will be examined through the prism of knowledge.

5.6.6.1 The role of knowledge

In this section I am analysing and interpreting the role of children's and parents' reported environmental knowledge in families' sustainable lifestyle and children's ability to influence their parents; and finally if and how the children can develop a level of confidence which could enhance their influence. As we saw in the first case study, there is a kind of relationship between these variables, namely knowledge, confidence and influence. Hence, as we saw before most of the children said that they knew 'quite a lot' (four) and 'a lot' (ten) about the environment indicating some confidence on their knowledge about the environment. At the same time, in Table 5.4.4.1 we saw that nine children in total said that they knew 'somewhat more' and 'much more' than their parents but there were also six in total who admitted that they knew 'somewhat less' and 'much less' than their parents.

What we can infer here is that the children were aware of the level of their parents' environmental knowledge, and they admitted that they knew about the same and maybe less sometimes. But it would be very interesting to see who said what, meaning what the children who reported a high level of knowledge had said about their parents' knowledge, in order to understand the level of knowledge at home in general and see if children's knowledge leads finally to their confidence in their ability to influence. Finally, in the table 5.4.4.2 Table we can see that also their perception about their influence on their families' sustainable lifestyles are moderated as their knowledge in comparison to their parents' knowledge, since six students reported that they had influenced their parents 'a little' and six 'quite a bit'. On the other hand, there were also eight students who claimed a higher level of influence, but again a match of who said what would be very illuminating.

In the tables mentioned above we related two variables, children's reported knowledge about the environment and their reported influence on their parents' pro-environmental behaviour. Now, I am going to present a table with three variables together, children's reported knowledge and influence along with their opinion about their parents' environmental knowledge.

	Children's reported knowledge	Children's Vs Parents' knowledge	Influence
9	A little	Much less	A little
11	A little	Somewhat more	A lot
20	A little	Somewhat less	A little
2	Quite a bit	About the same	A little
14	Quite a bit	Much less	Quite a bit
19	Quite a bit	Somewhat less	A little
1	Quite a lot	Somewhat less	A little
3	Quite a lot	Somewhat more	Quite a bit
5	Quite a lot	Somewhat more	Quite a bit
15	Quite a lot	About the same	Quite a bit
4	A lot	Somewhat more	Quite a bit
6	A lot	Much more	A lot
7	A lot	Much less	A little
8	A lot	Much more	A lot
10	A lot	Somewhat more	Quite a bit
12	A lot	About the same	A lot
13	A lot	About the same	Quite a lot
16	A lot	Much more	Quite a lot
17	A lot	Much more	A lot
18	A lot	About the same	Quite a lot

Table 5.6.6.1.1 Combination of variables (n=20)

At this point, I think it would be very interesting to see what the children who said they knew 'a lot' about the environment and 'more' than their parents reported about their influence on them. This would be an indication of children's confidence in their knowledge, their ability to influence their parents and communicate the message of sustainability; as well as, how they see themselves within the families' decision making process in everyday life. For example, it would be very interesting to see what children with a higher level of confidence said about their influence on their parents.

Hence, we see that the diffusion of sustainability and pro-environmental behaviour was not that strong from children, who said they knew 'quite a lot' and less, to parents and children were not that confident to make their voice be heard and cause changes to their families' lifestyles towards sustainability. Only eight of the children (n=20) said they had influenced their parents 'quite a lot' and 'a lot' and this came from children who said they knew 'much more' and 'somewhat more' than their parents. We can also observe a sign of confidence for students who said they knew 'much more' than their parents, in terms of their influence on them. This is because three out of four said that they had influenced them 'a lot' and one said 'quite a lot'. But this tendency does not continue as we are moving towards the lower levels of

knowledge discrepancy between students and parents. For example, four out of five students who said they knew 'somewhat more' than their parents said that they had influenced their parents only 'quite a bit', and this reported influence is decreasing simultaneously, resulting mostly from low levels of knowledge compared to parents' knowledge.

To be more precise, three of the children who said they have influenced their parents 'a lot' were children who said they knew 'much more' than their parents. This is very promising, since it shows that the children with a high level of environmental knowledge and awareness were confident enough to say that they influenced their parents to a substantial extent. This also makes me believe that what we should do is to enhance children's faith in their own knowledge in order to make them feel comfortable and confident enough to express and support their views and cause some changes towards the environmental protection.

As we did for the first case study, another way to check children's confidence on their knowledge and confidence in affecting their families' sustainable lifestyles is by checking also parents' perception about their own knowledge, their children's knowledge and influence on their pro-environmental behaviour.

While 14 of the children (n=20) said they knew 'quite a lot' and 'a lot' about the environment, 14 of the parents said that they knew 'somewhat', expressing a moderate opinion about their knowledge. However, it would be very interesting to examine at the same time what the children and parents said about each other's environmental knowledge.
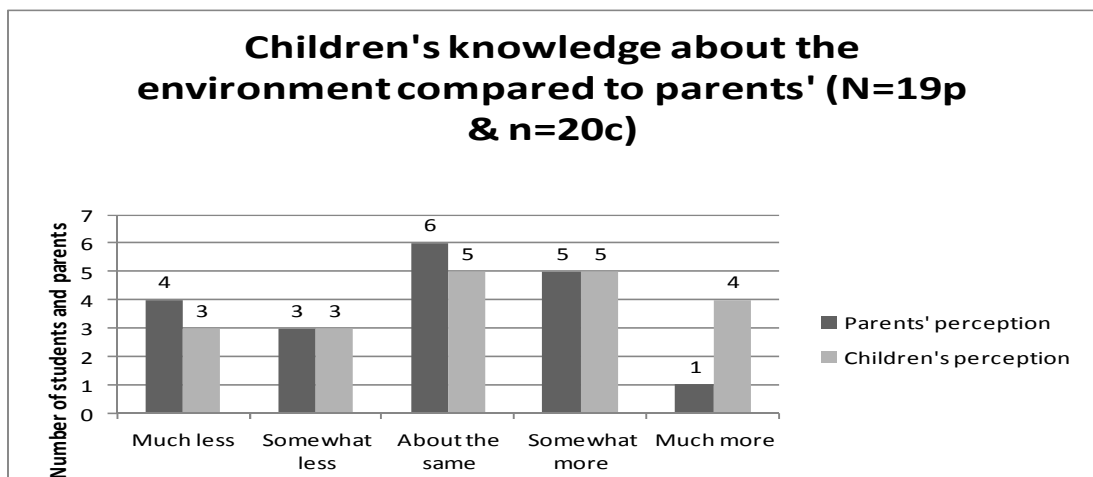
Chart 5.6.6.1.1 If children know more about the environment than their parents (N=19p & n=20c)

In the graph above we can see that there are not substantial differences between parents and children's perceptions about whether children knew more than their parents about the environment, but this is the case mainly for the low and medium levels of knowledge. However, we should notice that the number of children for the low levels of knowledge is smaller than that of parents. On the other hand, the difference was starker for the highest

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level of knowledge ('much more'), indicating the children's confidence in their knowledge compared to their parents' knowledge. Bearing in mind that 14 of the parents had said that they knew 'somewhat' about the environmental impact of their lifestyles; and they also said that they knew 'about the same' with their children, we could infer indirectly that the parents also believed that their children's knowledge about the environment was of a medium level. This view is not in the same line with what children (n=20) said, since ten of them said that they knew 'a lot'. Probably the parents underestimated their children's knowledge or the latter did not communicate their knowledge or they did not know how to use this knowledge or they had difficulties in digesting it. For example some parents said

> *"…I feel they know much less because they never talk about it" (Mother)*

There were also parents who attributed children's knowledge to school saying

> *"They tend to know more about recycling and growing because at school they have got an allotment where they can grow fruit and vegetables […] but I think they don't understand how it affects them here or at school. I don't necessarily think they understand it on a global scale" (Father)*
>
> *"I would think probably much more. They are educated a lot more in school about the environment" (Mother)*

The following table combines parents' views about their children's knowledge the influence of the latter on them and matches what the children thought about their parents' knowledge and respectively what the parents thought about their children's knowledge and influence.

	Children's Vs Parents' knowledge (Children's perception)	Children's Vs Parents' knowledge (Parents' perception)	Influenced by children (Parents' perception)
7	Much less	Much less	Not at all
9	Much less	About the same	Very
14	Much less	Somewhat more	Very
1	Somewhat less	Somewhat less	Slightly
19	Somewhat less	About the same	Slightly
20	Somewhat less	Somewhat more	Extremely
2	About the same	Somewhat less	Not at all
12	About the same	Somewhat more	Somewhat
13	About the same	Much less	Not at all
15	About the same	Much less	Somewhat
18	About the same	Somewhat less	Extremely
3	Somewhat more	Somewhat more	Somewhat
4	Somewhat more	Much less	Not at all
5	Somewhat more	Somewhat more	Somewhat
10	Somewhat more	About the same	Very
11	Somewhat more	Somewhat more	Somewhat
6	Much more	About the same	Somewhat
8	Much more	Much more	Very
16	Much more	About the same	Somewhat
17	Much more	About the same	Extremely

Table 5.6.6.1.2 Comparison of reported knowledge

From the table above we can see that two of the parents who admitted that they had been 'extremely' influenced by their children, did not share their children's opinion regarding whether the children knew more than them about the environment. Only in one case, the parents believed that their children knew more than what the children believed for themselves. But only one of these three cases represented a child who said they knew 'much more' than their parents when their parents said they knew 'about the same', as well as this child had also said that they had influenced their parents 'a lot'. This is a sign of confidence both in knowledge and ability to influence which is also confirmed by the parents. Moreover, the parents in case 18 again did not share their child's opinion on their knowledge. However, they are quite close in the perception of influence which they have. To be more specific, this

child had told that they had influenced their parents 'quite a lot' and the parents said they had been 'extremely' influenced. Hence, this is another sign of children's confidence both in knowledge and influence, also confirmed indirectly by the parents.

On the other hand, the third case comes from a child who said they knew 'a little' and also believed that they knew less than their parents, while their parents said the opposite. As well as this child had said that they had influenced their parents only 'a little' and again their parents said exactly the opposite, reported that they had been 'extremely' influenced by their child. This is a strong example of children's lack of confidence, this time both in knowledge and influence. Two more examples of the 'double' lack of confidence are the cases nine and 14 where the children had said they knew 'a little' and 'quite a bit' respectively, and at the same time they also said that they knew less than their parents, while the parents admitted that their children knew 'about the same' or 'more'. At the same time these children had said that they had influenced their parents 'a little' and 'quite a bit' while their parents on the other hand said that they had been 'very' influenced.

For the rest of the cases we can present children's confidence in knowledge and influence and whether it is confirmed by the parents in the following diagrams.
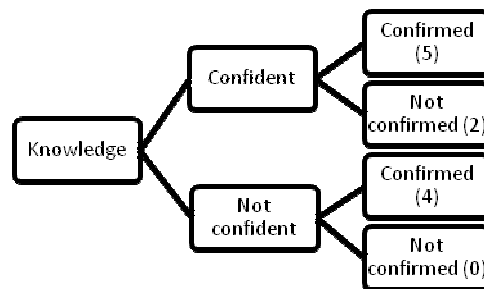
Figure 5.6.6.1.1 Children's confidence in knowledge (n=20)
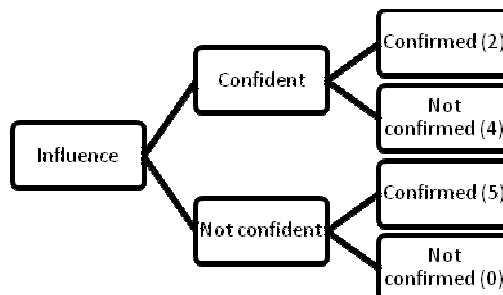
Figure 5.6.6.1.2 Children's confidence in influence (n=20)

From the diagrams above we can see that in terms of children's knowledge, we can see that children and parents mostly shared the same opinion about children's reported knowledge about the environment, either they were confident in their knowledge or not. On the other

hand, in terms of children's ability to influence their parents, we can say that the parents agreed when their children did not feel confident, and most of them did not confirm their children's feeling of confidence. In general we can say that the children were more confident in their knowledge but they did not feel that they could 'translate' this confidence into actual influence on their parents.

This section analysed how children's confidence in their reported knowledge and ability to influence their families' sustainable lifestyles can affect the actual influence from the children and the parents had mentioned. In a nutshell, from these two case studies we can conclude that the children were more confident in their knowledge about the environment rather than in their ability to use this knowledge and finally influence their families' sustainable lifestyles. In general, parents and children shared the same perceptions about their knowledge and influence.

Moreover, I think that it would be very useful to examine if there is any possibility to relate the level of influence the parents reported in the family income, since the financial element has been a very important factor in families' decision making. Hence, we examine if and how the family income plays a role in children's effort to influence their families' sustainable lifestyles and parents willingness to adopt their pro-environmental behaviours in general and also after children's encouragement. The UK household average income per year is £29,100[20] (in 2008-2009), while the respective average income for the second case study was about £45,250.

According to the experts who had been interviewed at the beginning of the research, they had said that we do not have any proof to make us believe that the high income families are more likely to be influenced by their children and improve their pro-environmental behaviour. As well, according to the teachers of the schools, they had reported that it is very difficult and unfair to generalise based on the family income, because they were parents of lower income who had said themselves that they had been influenced by their sustainable lifestyles because of the environment.

The following table relates to the household annual income with the level of children's influence on their parents. Most of the parents reported that they had been 'somewhat' influenced by their children and these were families with family income higher than the average family income of the families of this area. Moreover, we can observe that the lower the family income the more influenced by the children the parents said they had been, and vice versa. However, as in the first case study, we cannot be absolute and generalise since

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[20] After taking account of all taxes and benefits, this is the average final income of household (Source: Office for National Statistics, "The effects of taxes and benefits on household income, 2008/2009).

there were also families of high income which reported 'very' and 'somewhat' influenced. We would expect probably that the families of high income would be more open to their children's influence but this table tells us almost the opposite. But as it was explained at an earlier stage of this chapter, some parents, mainly those of higher income, were not influenced by their children that much because either they were already pro-active, or they learnt together with their children or they were influenced by the fact they were parents.

Household annual income * Children's influence on parents (parents' perception)						
		Children's influence on parents-parents' perception				
		I am not at all influenced	I am slightly influenced	I am somewhat influenced	I am very influenced	I am extremely influenced	Total
Household annual income	2,500-4,999	0	0	0	0	0	0
	10,000-14,999	0	0	0	1	0	1
	15,000-19,999	0	0	0	1	0	1
	20,000-24,999	0	0	0	0	0	0
	25,000-29,999	0	0	0	0	1	1
	35,000-39,999	0	0	1	1	1	3
	40,000-44,999	0	0	0	1	0	1
	45,000-49,999	0	0	0	0	0	0
	50,000-59,999	2	0	0	0	0	2
	60,000-74,999	0	1	1	1	0	3
	75,000-99,999	1	0	2	0	0	3
	100,000 or more	0	1	0	0	0	1
	Refused	0	0	1	0	0	1
	Don't know	0	0	1	0	0	1
Total		4	2	6	4	3	19

Table 5.6.6.1.3 Children's influence on parents and family income (parents' perception, N=19)

To sum up, we cannot say that the family income plays an important part in children's effort to influence their families' sustainable lifestyles, preventing us from coming to any generalisation about it. However, the role of income and other factors that can affect parents' pro-environmental will be analysed later on in this chapter.

Finally, this influence is the result of process of information and experience exchange through discussion between children and parents. Hence, the next step was to ask the parents about the topics they used to discuss with their children and see if the environment came up as a high priority in their 'agenda'. On the top of their list was the school, what they did and learnt in school, then other general topics about their day, interests and everyday activities, friendships and the environment (only four parents mentioned it). After that, the parents were asked how often they discussed with their children about the environment, choosing from a

scale from never to always. The chart below discloses the difference between parents and children's perceptions about the frequency of their discussions about the environment.
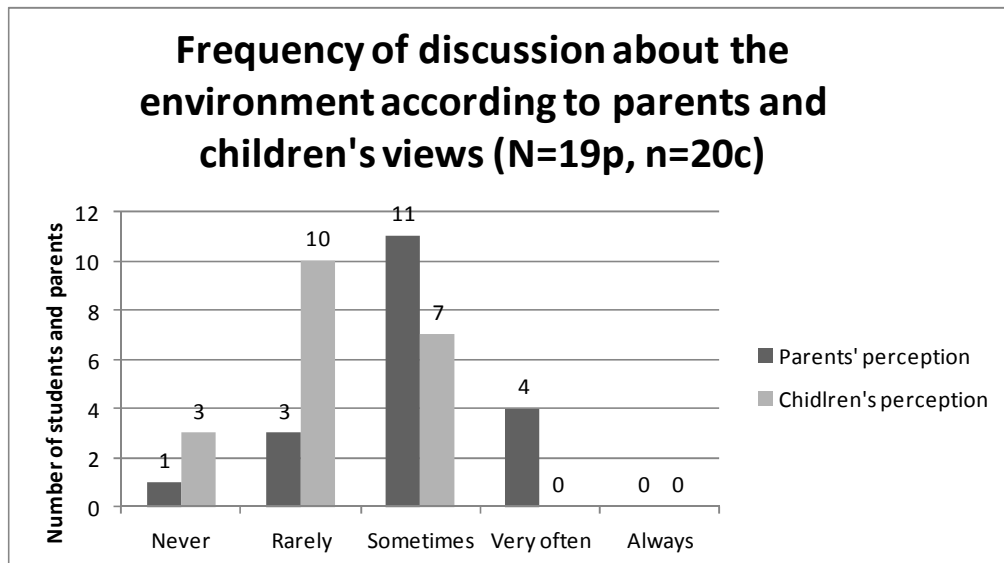
Chart 5.6.6.1.2 Frequency of discussion about the environment according to parents and children's views (N=19p, n=20c)

From the graph above we can see very clearly that there is not consistency in parents' and children's claims regarding the frequency of discussion about the environment. Most of the children said that they 'rarely' discussed with their parents about the environment and some of them also said 'sometimes'. On the other hand, most of the parents said that they discussed 'sometimes' with their children about the environment and there were also some of them who said 'very often'. And it is very interesting that none of the children (n=20) said so. An explanation may be that the discussions that may have taken place were not very specific or long in duration, in order to meet children's high standards, in comparison to what happened at school, and regarded as a proper discussion. On the other hand, the parents may have wrongly regarded an occasional and short mention to the environment as discussion. According to parents, it was mostly both the children and the parents who started the discussion about the environment (11 parents said so), which agrees what the children had said; and 5 of them said that their children instigated the discussion mainly because they wanted to show what they had learnt at school and secondly to show that they knew a lot and sometimes to learn more.

5.6.6.2 The role of school

This study also examines the impact of an environmental educational programme on families' sustainable lifestyles, through schools and how they have managed to diffuse the message of sustainability at students' homes. Hence, the parents were asked in what ways they thought the school influenced their children to live more 'greenly' and most of them said by teaching

and different lessons, how they did things at school, meaning energy saving practices, recycling and so on. Then through clubs such as eco-warriors and gardening club, experts at school as guests, school trips, homework and competition.

However there were two parents, who said there was not any influence; for example

> *"Not a lot to be honest. What they do in school stays in school. There is more influence from home. Maybe they do something as a routine at school but it does not make them do it at home" (Mother)*

I should not forget to quote the words of two parents who justify what we described in the previous section about the fact that children did not communicate their knowledge to their parents or they did not bring any information at home, resulting in for parents to underestimating their children's knowledge.

> *"I don't have any visibility of that, so I would say no comment. I am sure they do things at school, because they have their own garden and plant things, but they don't come back and talk about it. I don't have any information through my child" (Mother)*

> *"They grow their own food; you can clearly see the recycling facilities. I would guess there is practicing in class to encourage them. I am probably not aware of that because the children never mention it" (Mother)*

Finally the parents were asked if they said that their children's school affected their lifestyles indirectly to become more sustainable and if yes in what way; and 68.4% (13) of the parents said yes and 31.6% (six) said no. Hence, the main ways they identified were through homework, competitions, clubs and activities, discussions at school and newsletters.

5.6.7 Conclusions

To sum up, this section presented parents' perspective about their lifestyles in association with the environment and how sustainable they said they were, their environmental awareness and concern about the future as a result of their actions in the present and the main aim of this study which is children's influence on their parents' pro-environmental behaviours. This influence was approached from different angles, focusing not only on the influence per se but also on the factors and motives behind that.

What we can infer is that most of the parents claimed a medium level of knowledge about the environmental impact of their lifestyles but with a willingness to do a bit more to help the environment, while they had already done quite a few things to help the environment. The

majority of the things they did focused more on the themes of energy, water and waste, driven mainly by financial motives regardless of the economic status of the family. Finally, the parents said that they had been 'somewhat' influenced by their children, not only by their suggestions to change their lifestyles, but also by the fact that they had children. However, the children had a slightly better perception of their role and influence on their parents in terms of the pro-environmental behaviour of the latter.

5.7   Focus group with children-Phase 2

The last step of the research design was the second phase of the focus group with the children, where we partially analysed the data, tried to find out and understand the reasons why the message of sustainability were difficult to be diffused and absorbed by parents. Moreover, the children were asked to suggest ways to overcome this problem or at least to facilitate this process and make it more effective. The whole process and the methods of the second phase of the focus group have been described in detail in the methodology chapter, and here we will focus only on the findings and their interpretation.

In the first place the children were asked to classify the changes they *believed* they had caused to their families' lifestyles; starting with the most powerful, drastic, effective and important change. After some very simple calculations based on children's answers on the pyramid shape ranking chart[21] and bearing in mind the frequency and the level, the ranking of the changes is the following.

Rank	Action	Points
1st	Recycling	87
2nd	Turning off the lights	58
3rd	Turn off the TV or other appliances	27
4th	Save water	18
5th	Save electricity/energy	16
6th	Walk more	16
6th	Use the bus	13
6th	Turning off the tap	13
7th	Growing food (fruit and vegetables)	12
8th	Energy saving bulbs	9
8th	Don't litter / Cleaning	7
9th	Start a discussion about the environment	6
10th	Using the brown bin for garden waste	4
10th	Replace bath with shower	4
11th	Drive less	4
11th	Use the bike	4
11th	Reuse bags	3
12th	Composting	2
12th	Using the bus	1

Table 5.7.1 Point system

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[21] See the methodology chapter for explanation

From this table we see again that the children said that they had the strongest influence on recycling, energy and water as was mentioned by experts, teachers, children through the questionnaires and parents. After that the children were asked to answer a question if it was their mother or father who followed their ideas to change their lifestyles more easily or if they said it was the same for both parents. Seven children out of 18 (two children were absent) said that there was no difference between parents on the level of adopting their own ideas and suggestions; and again seven children said that mothers were more willing to adopt their suggestions. Finally, only four children said the fathers who seemed to have been the least adjustable.

For the second task, the children had to find out the three most important reasons why it was difficult for the parents to follow children's ideas for sustainable lifestyles. Their responses showed that the three main reasons which hindered the adoption of children's suggestions and ideas for more sustainable lifestyles were their parents' lack of time, the lack of infrastructure translated into lack of green, brown or compost bin; and the location of the house and parents' workplace, which made them use their cars more often.

Children's responses	Frequency
Extra cost	12
Lack of time	11
Busy with work	6
They are lazy	3
Location of parents' workplace	2
They don't always listen	2
Location of the house	1

Table 5.7.2 Problems identified by children

The children seemed to understand the real difficulties their parents faced in getting their ideas and suggestions for more sustainable lifestyles on board. The children attributed the non-adoption of their suggestions mostly to the extra cost, which was mentioned by 11 children, indicating that the price and cost were their parents' priorities, in the same line with their parents who seemed to consider price and budget very important. The second most important difficulty that the children mentioned was the lack of time and their parents' busy lifestyle, mainly because of work. Finally, it is very interesting to notice that there were children who said that their parents did not pay much attention to what they said in terms of the environment or they were too lazy to follow.

Finally, the third task the children were asked to work on, was to find ways, including follow-up activities, to facilitate the diffusion on the message of sustainability at home and to influence their parents more effectively. Through the discussion, the children decided which ideas were more doable and more possible in order to have a better result. I need to mention here that I guided children to make the final list, asking them appropriate questions in order to elicit the

information we needed and let children themselves to decide the final and most appropriate ideas. The short list is the following:

- Post-it notes (for recycling, energy and water)

- Ask parents to listen to our ideas

- Ask parents to buy more healthy food

- T-shirts with messages

- Rules (e.g. in the bathroom for reasonable use of water)

- Ask parents to play out more

- Ask parents to recycle more

- Nag them

- Ask parents to ride a bicycle

- Ask parents to share bath water

- Ask parents to grow food instead of buying it

- Ask parents to walk more

- By telling parents more about the environment

My suggestions were the following:

- Short research for a different topic every month or every two months. The findings will be published on the school newsletter for the parents to see that their children know a lot and their knowledge is scientifically based.

- Surveys at home. Keeping a kind of diary. For example, have a look at your electricity bills or meters every month and prove to your parents how much electricity you consume at home every month. You will end up with a diagram after a few months.

- Short presentations at school assemblies or parents meetings

- Ask parents to walk more to school when it is not raining.

- Change your behaviour at home and make your parents notice this change.

- Highlight how much money your parents can save if they are environmentally friendly. They care about the cost and money!

- Organise competitions at school, like 'walk to school week'. E.g. The most environmentally friendly lunch box.

- Art exhibition with recyclable material, reusing things that would end up in the landfill.

- Go shopping with your parents and check specific information about the characteristics of the products. Try to encourage them to buy something which is more environmentally friendly or try to prevent them from buying something environmentally harmful. Look for other alternatives (e.g. air miles, packaging).

- Ask them to grow your own fruit and vegetables and show them how willing you are to help them.

Moreover, in order to make children feel confident for their knowledge and also make their parents see that their children do know a lot and in depth about the environment, having as an ulterior purpose to communicate the message of sustainability more effectively; we decided to write a short essay presenting the findings of the research including the names of the children as co-authors of this essay. This follow-up activity in the form of an essay was published in the school newsletters sent to parents, in order for them to see their children's participation and name on the essays.

5.8   Conclusions

From this analysis it was made clear that the doorways of energy, water and waste are those that are preferred most by the school, the students and their families, mainly because they are easily measurable, comparable and sometimes interpretable to financial gains. Moreover, we cannot conclude with certainty if children finally influence their parents, but we have a strong and positive indication that there is some influence from children on their parents' pro-environmental behaviour. Additionally, according to the teachers, there was some influence from children on their family members toward more sustainable lifestyles, but this influence was small and in different ways. However, the school had not developed a process of getting feedback from the parents in terms of their environmental activities, attributing this lack of information to the insufficient communication with parents.

This analysis of the second case study offered rich information about children's and parents' pro-environmental behaviour and the potential of intergenerational influence from children to their family members, in terms of sustainable lifestyles and sustainable consumption patterns.

Some findings confirm what the literature says about a vague picture in terms of environmental information and knowledge transmission from children to adults and about children's influence on their families.

However, despite the inconsistencies between parents' and children's responses about their knowledge, the frequency of the discussions about the environment and finally children's influence on their families' pro-environmental behaviour discloses how children see themselves as promoters of sustainability and how parents see their children.

Chapter 6 – Discussion

6.1   Introduction

In this chapter I will discuss the two case studies presented in chapters four and five in relation to the main research question about the capacity of a long-term environmental education programme to encourage children to influence their families' sustainable lifestyles, as well as to investigate what the parents believed were the factors which could influence their pro-environmental behaviour. This chapter also presents five themes that resulted from children and parents' responses and how they answer the research questions. Schematically,

Research Questions	
5. "How effective is the National Framework for Sustainable Schools in fostering intergenerational influence within the family?	
6. How does environmental education at school encourage children to influence their parents in terms of sustainable lifestyles?	
7. "What are the factors that help or hinder students' influence on parents?"	
8. "What everyday parental activities are influenced by children's' education and why are those specific activities affected?"	
Report section	**Research question addressed**
Summary of the research process and findings (6.2)	3
Theme 1: Classification of children's influence on parents (6.3)	2
Theme 2: Children's confidence (6.4)	2, 3
Theme 3: Guilt feelings and Drop-in-the-ocean feelings (6.5)	2, 3
Theme 4: School's effort to promote sustainability (6.6)	1, 2, 3, 4
Theme 5: The role of the socio-economic background (6.7)	3
Methods evaluation (6.8)	1,2,3

Table 6.1.1 Connection between research questions and arisen themes

The table above explains how the themes that arose from the analysis of the case studies answer the research questions. In effect, five themes, one model and one evaluation have been addressed in this research study.

First of all, the summary of the research process and findings shows how the communication between government, school, pupils and family operated in order to promote sustainable development. It presents the path of the message of sustainability, the areas in which the message was communicated effectively, as well as the areas where its communication was obscured by specific factors. In effect, it also answers the third question about the factors that can help or hinder children's influence on parents' pro-environmental behaviour. Regarding

the five themes that have arisen in this study, all of them are addressed in the above summary. More specifically, the theme about children's confidence on parents' pro-environmental behaviour addresses the second and third research questions. Another theme that arose is the classification of children's influence on parents' pro-environmental behaviour and addresses the third research question. In essence, this categorisation indicates how parents perceived their children's role as transmitters of the message of environmental sustainability.

The third theme that arose in this study regards parents' guilt feelings and drop-in-the-ocean feelings which address the second and third research questions. The guilt feelings that the parents may have when they do not follow their environmental principles for some reason; and the 'drop-in-the-ocean feelings' they may have in an effort to be more environmentally friendly. These questions are also partially answered through the theme about school's effort to promote sustainability, which addresses all the four research questions. In essence, it explains from teachers, children and parents' perspectives, how they understood the ways that the school used (e.g. newsletters, assemblies) to communicate the concept of environmental sustainability.

 The fourth question is answered through the theme of families' socio-economic background which can influence their choices in terms of the everyday activities they decide to change in order to improve their pro-environmental behaviour. But according to the data from parents' interviews, the main motive for the choice of specific actions was to save money, for example through energy and water saving.

Regarding the evaluation of the methods that were used to collect and analyse the data that raised the aforementioned model and themes, these were adaptable, effective, engaging and participant-friendly. More specifically, they were adaptable and participant-friendly, especially when they were applied to the students, because of their short attention span, different cognition level, enthusiasm, willingness and level of engagement. These methods were also adaptable to tackle the ethical complications involved in doing research with children. Moreover, they were effective in terms of providing rich information from different participants, such as experts, teachers, students and parents. On the other hand, there were some limitations which should also be reported. Some are the importance that was given to people's perceptions which may limit the comparability of the responses across the case studies and the peer pressure which was applied in students' responses, where some students tended to copy their friends answers.

6.2 Summary of the research process and findings

The following diagram describes the whole process of communicating the message of pro-environmental behaviour starting with the setting of the policy by the government and ending with families' pro-environmental behaviour change.

Teachers & Management (in active case study schools):

Diffusion of sustainability across the curriculum.

1. Sustainability was integrated in the lessons.

2. One big homework project in maths based on water saving.

3. Visits to sites of environmental interest.

These apply to both schools.

Schools' Initiatives:

1. Energy & water (e.g. Eco-warriors)

2. Purchasing & waste

3. Building and grounds (e.g. Gardening club)

These apply to both schools.

National Framework for Sustainable Schools (Government policy)

Doorways to suastainability:

1. Food & drink

2. Energy & water

3. Travel & traffic

4. Purchasing & waste

5. Local well-being

6. Building & grounds

7. Inclusion & participation

8. Gobal dimension

Message of sustainability passed to students:

The message of sustainability was passed to students across the curriculum. It was included in specific lessons rather than systematically included in the curriculum.

This applies to both schools.

Communication of the message of sustainability (see 6.6)

From school through:

Newsletters, assemblies, themed days/ weeks/competitions, homework, guests at school.

Through children:

1. The message was communicated well in some cases by the children but not always very consistently. Some children did not discuss environmental issues with their parents.

2. The environment was not a highly-ranked topic on families' agendas for discussion.

These apply to both schools.

Children's confidence-influence model (see 6.4).

The more confident the children felt about their environmental knowledge and ability to influence their parents, the more influenced the parents said they felt.

Conclusions drawn from both schools.

Families' pro-environmental behaviour change:

-Classification of children's influence on parents' pro-environmental behaviour (see 6.3). Families' behaviour change was positive, but to varying extents.

-There are some barriers to behaviour change including guilt and drop-in-the-ocean feelings (see 6.5).

-There is high consistency between parents' and children's perception of children's influence.

-There is no significant difference between families of different socio-economic background (see 6.7).

Figure 6.2.1 Summary of the research process and findings

This summary shows how education for sustainable development can lead to parents thinking about and taking on sustainable lifestyles and pro-environmental behaviour and some of the challenges that exist along the way. Initially, the British government launched the National Framework for Sustainable Schools in 2006 giving it a voluntary and optional character, aiming at all schools to be sustainable schools by 2020. Hence, since the government launched this strategy, the schools have been the direct recipient of that message. Because the NFSS is voluntary, it is within schools' discretion to decide if, how, and at what pace they will diffuse the message of sustainability across the curriculum, through teachers. Consequently, teachers have to decide how they will communicate the message of sustainability to students and indirectly to their families. After that point, the children become the new and main 'vehicle' by which the message is taken home. But this vehicle is 'fuelled' at the same time by the school itself (e.g. school's newsletter sent to parents) and by students' confidence in their knowledge and ability to influence their parents, where families' pro-environmental behaviour change is the final goal.

The communication process that this diagram presents starts with the NFSS which is particularly interesting since it has a longer duration than the interventions that were observed in previous studies (e.g. Volk and Cheak, 2003), and which, as a result, may have greater potential to affect in a positive way the intra-family and intergenerational communication (Ballantyne et al., 1998a). This process continues with the findings from interviews with experts regarding the implementation of the strategy (section 6.6). The diagram continues with the schools' initiatives to promote the message of sustainability. This information resulted from participant observation and interviews with teachers. According to the teachers, one of the areas that the schools' initiatives focused on was waste management, which is also supported by Grodzinska-Jurcack et al.'s (2003) study.

As far as the main ways which both schools used to diffuse the message of sustainability are concerned, this was through means that are familiar from the existing literature: big homework projects (Ballantyne et al., 2001b; Vaughan et al., 2003), visits to sites of environmental interest (Uzzell et al., 1994; Ballantyne et al., 2001a, b) and participation in environmental activities like gardening clubs and 'eco-warriors' (Leeming et al., 1997; Ballantyne et al., 2001b).

The next stage includes the data collected from students and parents. Comparing the data from parents and students, I developed the 'Children's confidence – influence' model (see section 6.4) which relates children's confidence in their knowledge and ability to influence their parents to parents' feedback on their children's influence. Previous studies did not note the influence of children's confidence, although they did observe that some parents admitted

that they had been challenged by their children to change their attitudes and practices at home (Ballantyne et al., 2001b) and they trusted their children to teach them something about issues resolution (Volk & Cheak, 2003).

The next stage of the research process regards the communication of the message of sustainability between the school and home. The findings of this research show that the message and information were communicated well by the children, but, as in previous research, sometimes not in a consistent way (Ballantyne, 2001b; Vaughan et al., 2003) or in detail (Sutherland & Ham, 1992). Again, as in previous research, children's participation in environmental activities motivated discussions at home about the environment (Grodzinska-Jurcack et al., 2003), where most of the time the discussion was initiated by the children (Ballantyne, 1998a; Ballantyne, 2001b). However, the study also backs up findings that environment was not a highly-ranked topic on families' agendas for discussion (Volk & Cheak, 2003) and in general students' and parents' perceptions of the frequency of discussions about the environment were different (Grodzinska-Jurcack et al., 2003).

The last stage of the diagram concerns children's influence on parents' pro-environmental behaviour. One of the topics which arose was the classification of parents' perceptions of children's influence on their pro-environmental behaviour. One of the categories was those parents who were not influenced by their children but by the fact that they were parents (also recognised by Uzzell et al., 1994). In general, the families' behaviour change was positive and there was high consistency between parents' and children' perceptions of influence.

In general, throughout this path there were some factors which enabled and constrained the communication of the message.

The factors that enabled the message are:

1. Children's confidence (6.4).

2. Parent's willingness to change their lifestyle (6.5).

3. School's efforts to promote sustainability (6.6).

The factors that constrained the message:

1. Parents' locked-in behaviours because of children's preferences (6.5).

2. Parents' drop-in-the-ocean feelings because of structural issues in society (6.5).

3. Moderate level of discussion about the environment within the family (6.3).

The aforementioned factors constrained the effectiveness of children's efforts to influence their parents' pro-environmental behaviour, and at the same time they played a part in how the parents perceived their children's effort to influence their pro-environmental behaviour. They are discussed in more detail below in the sections indicated.

Now that I have presented the integrative summary of the research process and findings, I will deal with the various themes that arose in the analysis that relate to this model in more detail below.

6.3 Classification of children's influence on parents' pro-environmental behaviour

From both case studies I was able to categorise the parents in terms of how they perceived their children's influence or whether finally they were influenced by them. There were similarities in both case studies but in the second case study the examples provided more information, because the participants were more talkative and willing to discuss in more detail. Hence, I managed to identify five categories of parents in terms of how they perceived their children's influence on them towards more sustainable lifestyles.

The main research question of this study regards the capacity of an environmental education programme to encourage students to influence their parents' pro-environmental behaviour. But after analysing the data I discovered that there is not one specific or one 'yes or no' answer. Instead, I managed to categorise children's influence on their parents, based on parents' perceptions of their children's influence. Hence, the answer is not "there is influence or there is not any influence". The answer should be "there is some influence which varies".

	Categorisation of parents in terms of their children's influence on their sustainable lifestyles	Number of parents
1	Parents who have been influenced by their children because they had brought information from school.	21
2	Parents who have been influenced by the fact they have had children and not by their children themselves.	3
3	Parents who learn with their children at the same time.	1
4	Parents who have not been influenced by their children.	3
5	Parents who have not been influenced by their children because they were already pro-active.	8

Table 6.3.1 Categorisation of parents in terms of their children's influence

This categorisation is important because it explains in essence how the parents perceive their children's role as promoters of sustainable lifestyles. Moreover, it contributes to the literature, particularly to the eleven studies which have focused on children's influence on parents' pro-environmental behaviour, by providing a whole spectrum of parents' perceptions of children's

influence. The first category is exactly what we would hope would exist, but we cannot say that this was the case for every family, since the transmission of environmental knowledge did not take place in every family. This is also shown by the very low percentages of the frequency of discussions about the environment that took place at home. Hence, this first category has got three sides. First, it confirms children's influence on their parents (Evans et al., 1996; Leeming et al., 1997). Secondly it confirms a weak transfer of knowledge and information (Sutherland & Ham, 1992) and thirdly it proves a low level communication within the family environment about the environment (Uzzell et al., 1994; Volk & Cheak, 2004).

Frequency of discussion about the environment					
	Never	Rarely	Sometimes	Very often	Always
Children's perception	8	16	11	1	0
Parents' perception	1	5	20	9	1

Table 6.3.2 Frequency of discussion about the environment (Total number of children (37) and parents (36) from both case studies)

From the table above we can see that the parents have got a more positive perception than the children about the frequency of discussion with their children about the environment, but that children's views justify in a more convincing way what a category of parents said, that some of the children do not understand or do not bring information home. In both schools the children were those who initiated a discussion about the environment, which means they did not discuss much about the environment but when they did so, most of the times they took the initiative. Consequently, this could explain why the parents said that the children did not bring information home, something that has also been mentioned in the literature by Vaughan et al. (2003) and Sutherland & Ham (1992), who said that the process of transferring environmental knowledge from school to home through students is intense but not consistent and reliable.

However, it is not true that the only reason parents are in the first category is because children do not talk much about the environment at home. The table above about the frequency of discussion provides only a part of the explanation why some parents were not influenced by their children. The second and fifth categories reveal two more reasons. Some parents said they were not influenced because they were already pro-active and some others because they were influenced by the fact that they were parents and not by their children themselves. These three possible explanations were identified through parents' interviews.

Regarding the fifth category where the parents said that they were pro-active, they meant that they already acted to protect the environment before their children started learning about it at school. They said for example that when their children were told at school about environmental sustainability, it did not sound new to them since they were already familiar

with the idea and the behaviour around it. Therefore, the parents assumed that either their children did not bring any information home because they did not considered it noteworthy; or they brought the information home but all the ideas or suggestions they made had been already applied.

Finally, the parents who have been influenced have been separated into two categories. Those who have been influenced by their children, motivated by their homework, discussions at school and day trips; and those who have been influenced by the fact that they are parents and not by the children themselves. This was also obvious by what they had said when they asked about the future meaning of sustainable development and the effect their actions may have on the future generations, meaning their children and grandchildren.

> *"Since we had our sons, both myself and my husband try to be more environmentally friendly…" (Mother)*

> *"I think that having children has influenced me more because you might be worried about the world they are growing up…" (Mother)*

Moreover, when the parents were given the list of some possible sources of influence for pro-environmental behaviours, 30 parents in total (out of 36 from both case studies) mentioned 'the desire for their children to live in a better world' as a source of influence and 23 parents in total mentioned respectively 'the ambition to make future generations to live in a safe environment'. Therefore, we can see that the being a parent was a very important factor for the parents themselves to improve their pro-environmental behaviour, in order to ensure that their children will enjoy a better quality of life in terms of the environment and the world they live in, stressing their responsibility as parents. This is also supported by Uzzell et al. (1994) who said that parents were environmentally sensitive because they were worried about their children's future. Having a child is one of the life events that can encourage people to review and finally change their habits (Munasinghe et al., 2008). Being a parent or having a baby can affect other aspects of families' decision-making and behaviour in everyday life. For example, the life event of having a child is related to household smoking bans (Crozier Kegler, Escoffery, & Butler, 2007; Okah et al., 2002).

6.4 Children's confidence – influence model

In this section I present the model of 'children's confidence – influence' which results from the children's own self-reported knowledge about the environment, as well as a comparison to what they believed about their parents' environmental knowledge; but mainly from children's

and parents' perceptions about children's influence on their parents' pro-environmental behaviour.

This model was an interesting finding that came out of a comparison of parents' and children's interviews. Moreover, the importance of this model lies also in the fact that children's confidence has not been mentioned before in any study in this specific area of environmental education. Hence, this is the first time that confidence has been acknowledged as a factor that can influence children's efforts to influence their parents' pro-environmental behaviour.

Briefly, it seems that there is a relationship between children's confidence and parents' perception of the influence of children on their behaviour. It is interesting that previous studies in the literature relating to this specific area of environmental education do not address this kind of relationship. The literature to date does discuss how children have become more integrated into decision-making within the family. Clulow (1993) maintains that since family relationships have become more horizontal, children have been given more space and more decision-making responsibilities. This allows them to make more autonomous decisions (ibid). Cooper (1999) provided an example of this 'space' given to children, by stressing that parents now ask for their children's opinion about family purchases. Authors to date have not commented on how children's confidence affects family decision-making.

From the analysis of the case studies, I made the following diagram which depicts the relationships between knowledge, ability to influence, perceptions and finally children's confidence.
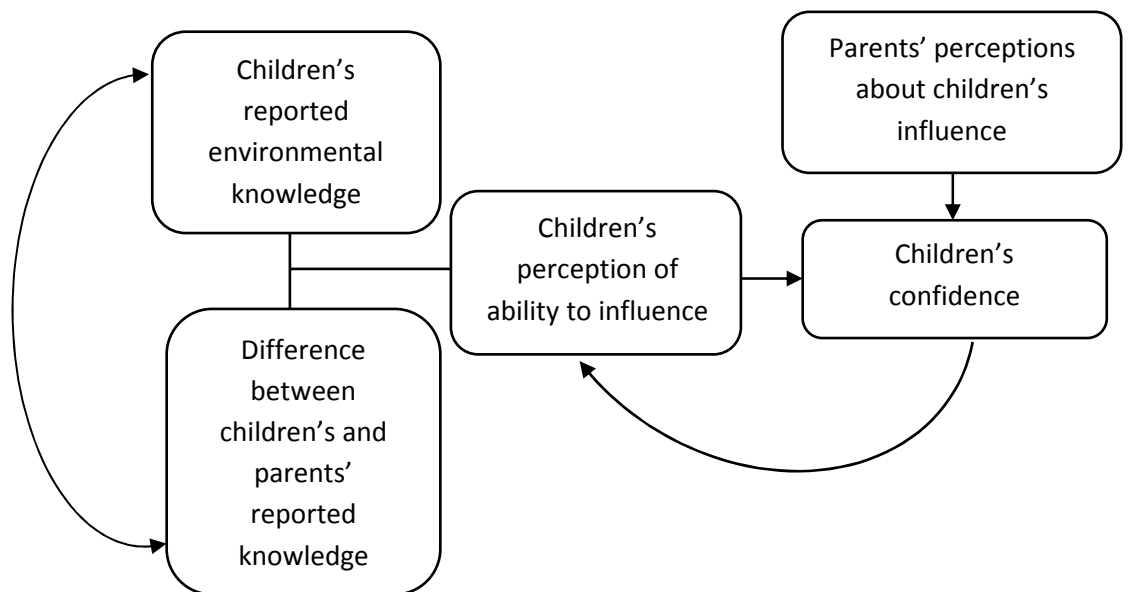
Figure 6.4.1 Children's confidence – influence model

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This diagram is a schematic presentation of the model which is based on children and parents' perceptions and leads to children's confidence both in their knowledge and their ability to influence their parents' pro-environmental behaviour. Explaining the model, I would say that children's perception of their own environmental knowledge, as well as of their knowledge compared to their parents' knowledge ('comparative' knowledge) can affect their perception of the capacity they have to influence their parents. Moreover, children's reported knowledge can be influenced by their perception of their parents' knowledge and vice versa. Hence, these two types of reported knowledge seem to interact with each other. In effect, the more the children feel they know, the more confident they feel compared to their parents and the level of confidence in their knowledge compared to their parents can re-boost their perception of their own knowledge.

This perception affects children's confidence in their knowledge and ability to influence, which could also be enhanced by parents' perception about children's influence; if the children were finally aware of those perceptions through their parents' feedback. This feedback can be expressed as trust that parents show to their children to teach them how to improve their pro-environmental behaviour (Volk & Cheak, 2003). However, through parents' interviews and children's questionnaires, I found out that there was not the level of communication between parents and children in the form of discussion about the environment, which would allow parents to provide their children with feedback. Finally, children's confidence could, in turn, enhance their perception of ability to influence their parents' pro-environmental behaviour; leading to a loop process which could enhance children's influence also in other areas (e.g. consumption habits). The feedback is one of the sociological and psychological factors that facilitate or hinder people's pro-environmental behaviour (Fietkau & Kessel, 1981). Fietkau and Kessel (1981) found out five variables that influence directly or indirectly pro-environmental behaviour: (i) attitude and values, (ii) possibilities to act ecologically, (iii) behavioural incentives, (iv) perceived feedback about ecological behaviour (e.g. positive reinforcement to continue by intrinsic feedback e.g. satisfaction of doing the right thing, extrinsic feedback e.g. socially desirable actions and economic feedback) and (v) knowledge.

Regarding the role of information and knowledge, information can increase knowledge about the environmental problems and behavioural alternatives; and heighten individuals' environmental awareness. Moreover, information may foster persuasion and commitment to pro-environmental behaviour, and can enhance the power of role model (Steg and Vlek, 2009). Axelrod and Lehman (1993) also agree that information provision can change people's attitudes and beliefs and these changes are sufficient enough to change their actual behaviour (Axelrod & Lehman, 1993). However, the impact of information on people's pro-environmental behaviour is not always positive. Kollumuss & Agyeman (2002) presents the example of the

effectiveness of environmental campaigns. They argue that a possible reason for the ineffectiveness of environmental campaigns, is the fact that they were based only on the simple provision of information, turning the interest towards the community-based social marketing and contributing to its development (ibid).

Kollumuss & Agyeman (2002) review the early models of pro-environmental behaviour which used to be based on a linear progression of environmental knowledge, leading to environmental attitudes which consist of environmental awareness and concern, and finally leading to pro-environmental behaviour. However, this linear progression was questioned because in many studies the findings showed that increase in knowledge and awareness does not lead necessarily to pro-environmental behaviour (ibid). However, this simplistic approach is still followed by NGOs and Governments (Owens, 2000) for their communication campaigns and strategies.

From the tables 4.6.2.1 and 5.6.6.2 from chapters four and five respectively, we could say that the more confident the children feel in their ability to influence their parents' pro-environmental behaviour, the higher the level of children's influence the parents reported. But this is the case up to a certain point, specifically for the levels 'a little' ('slightly influenced') and 'quite a bit' ('somewhat influenced'). Combining the two case studies, I came to the conclusion that parents' opinion is different at the extreme levels of influence. To be more specific, there was only one student who said that they had not influenced their parents at all, so they were not at all confident in terms of this ability of theirs, but their parents admitted that they had been 'somewhat' influenced. Hence, that parent believed in their child more than the child believed in themselves. However, for the two highest levels of 'quite a lot' ('very influenced') and 'a lot' ('extremely influenced') the students seem to have over-estimated their ability to influence their parents, according to the parents.

To sum up, after having integrated the two case studies, in terms of children's ability to influence their parents' pro-environmental behaviour, we can say that parents' perceptions are different at the extreme levels. For example, the parents felt more confident in their children's ability than the children did in their own ability at the lowest level of influence, but on the other hand, the children seemed to over-estimate their ability at the two highest levels of influence. However, for the medium levels of influence, the more confident the children felt, the more influenced the parents reported they were by the children.

However, children's confidence is the result of a combination of both the perceptions about knowledge and the ability to influence. Therefore, in this part I compare and discuss the level of children's reported environmental knowledge and what they said when they had to compare their knowledge to their parents' knowledge and vice versa. Integrating the tables

4.6.2.1 and 5.6.6.2 from chapters four and five, we can say that 20 students felt confident in their knowledge when they had to compare it to their parents' knowledge but only eight cases were confirmed by the parents. On the other hand, 16 students did not feel confident and that was confirmed by ten parents. In general, the students felt quite confident in their knowledge, especially when they had to compare it to their parents' knowledge but their parents did not agree to the same extent. Specifically, in total 22 parents did not confirm their children's confidence in knowledge or confirmed their lack of confidence. On the other hand, 14 parents in total confirmed their children's knowledge or they did not confirm their children's lack of confidence.

Moreover, we can observe that the more confident the children felt about their knowledge the more confirmations they received from their parents. However, this was not the case for the highest level of knowledge, where the children said that they knew 'much more' than their parents and only two parents admitted that. Starting from the lowest level of 'much less', two parents did not confirm their children's lack of confidence and the same was the case for the levels 'somewhat less' and 'about the same'. Then for the level 'somewhat more' six parents confirmed their children's confidence; in contrast to the highest level of 'much more'. Therefore, we see again that there was a tendency from the parents' point of view towards the moderate level of knowledge.

Now combining children's confidence in their knowledge and parent's perception about their children's influence on their pro-environmental behaviour, I present the following table:

Children's confidence in knowledge and parents' perception about children's influence				
Not at all influenced	Slightly influenced	Somewhat influenced	Very influenced	Extremely influenced
Confide nt 3	1	7	6	2
Not confide nt 5	2	4	3	3

Table 6.4.1 Children's confidence in knowledge and parents' perception about children's influence (from both case studies)

From the table above we can see again that the number of confident children for the medium levels of influence 'somewhat influenced' and 'very influenced' was higher than the number of not confident children; showing that the parents are influenced by their children's confidence in their knowledge and how much more than their parents they felt they knew. Examining tables 4.6.2.1 and 5.6.6.2 from chapters four and five more closely, we will see that the more confident the children they felt about their knowledge, the more influenced the parents said they were by them. Hence, this proves that there is a relationship between children's confidence in knowledge and their ability to influence their parents' pro-environmental

behaviour; which finally leads to a general confidence, also confirmed by the parents themselves.

Finally, when the children were asked in which areas of their influence on their parents' pro-environmental behaviour they felt more confident, most of them mentioned recycling, energy and water saving practices, the more frequent use of the bus and walking more and finally gardening and growing food. This was also obvious through the discussions I had with the children during the participant observation week, where they frequently mentioned how they tried to recycle at home, and what they did to make their parents turn off the lights, for example. They were also very keen on talking about their gardening skills at school and home as well. At the same time, these views were also confirmed by the parents through their interviews, expressing particularly their children's pestering efforts for energy saving and growing food in the garden.

However, we could say that they were able to distinguish some the difficulties their parents had in following their children's suggestions for pro-environmental behaviour; which in effect enhances their confidence in their ability to influence, their knowledge and critical skills of what they can do; and what it is that decreases the effectiveness of their efforts. Hence, the lack of time was mentioned 29 times, the extra cost which some environmentally friendly practices and products require was mentioned 15 times and finally the location of work and home was mentioned 11 times.

From child psychology and development point of view, children's cognitive and psychological development requires those skills that will enable children to judge the precision of what they are told, and benefit from how other people experience specific situations (Robinson, et al., 2008). In this case, children need to develop those skills that will help them to interpret their parents' feedback correctly, which in turn affects their confidence in their knowledge and ability to influence their parents' pro-environmental behaviour. Dweck (1996) stresses that parents' feedback is very important because it helps children to maintain their confidence in their abilities high, despite the fact that their confidence fluctuates and is hard to maintain.

According to Davidson (1996), time and information constraints can affect children's decision-making and inferring, and especially their post-decisional confidence. The information that Davidson (1996) talks about can be parents' feedback on children's knowledge and actual influence, affecting eventually their confidence.

However, parents' feedback must be very clear and easy for children to understand, because in case of uncertainty the development of understanding will be ambiguous (Robinson & Robinson, 1983). This is also confirmed by experimental and naturalistic studies which

highlight the importance of explicit information and feedback through which children develop the skills and acquire the knowledge to understand the message ambiguity (Robinson, 1981; Robinson & Robinson, 1982a).

Children's uncertainty about understanding and interpreting an ambiguous verbal message correctly is already known (Robinson & Robinson, 1982b). The verbal message can refer to parents' feedback and the uncertainty caused can affect children's' confidence first in their knowledge, then in their ability to interpret correctly and then finally in their ability to influence. Robinson and Robinson (1982b) maintain that the systematic verbal interaction with adults can contribute to their cognitive development and the development of the skills required in order to between the message itself and the meaning behind the message.

This is the first time children's confidence in their knowledge and ability to influence their parents has been linked with parents' perception of their children's influence on their pro-environmental behaviour. Hence, the previous studies had not developed a similar model that could predict a feedback process which enhances the role of children as promoters of sustainability at home. More specifically, if children's confidence could be increased somehow this would be a good investment on behalf of the school in ensuring messages were taken home. This model is part of the theoretical contribution of this research study.

6.5 Guilt feelings and Drop-in-the-ocean feelings

In this section I am going to talk about parents' 'guilt feelings' and 'drop-in-the ocean' feelings that they report in their efforts to adopt environmentally friendly behaviour and link these two feelings with people's altruistic and moral values and environmental concern.

The moral and normative concerns include the value-basis of environmental beliefs and behaviour, meaning values beyond individuals' own interest which make engagement in environmental behaviour more possible (Steg & Vlek, 2009). Environmental concern can lead to pro-environmental behaviour, but without it being guaranteed, because of the weak relationship between concern and pro-environmental behaviour (Poortinga, Steg, & Vlek, 2004; Schutz & Zelezny, 1998). Environmental concern stems from environmental awareness, which is "…knowing the impact of human behaviour on the environment' (Kollmuss & Agyeman, 2002, p. 253). It consists of a cognitive, knowledge-based part and an affective, perception-based part, but its effectiveness is constrained by cognitive and emotional limitations (ibid). However, the majority of attitudinal studies have showed the failure of environmental concern or attitudinal variables to produce behaviour (Hines, Hungerfold, & Tomera, 1986; Scott & Willis, 1994; Schultz, Oskamp, & Mainieri, 1995); acknowledging the indirect influence on behaviour considering the role of intention.

Another factor that affects pro-environmental behaviour is social-altruistic values (Tanner, 2009). Eisenberg & Miller (1987) explain that there are some approaches whose ulterior purpose is the pro-environmental behaviour, which are based on altruism, empathy and prosocial behaviour. There is direct influence of the altruistic moral norm on the pro-environmental behaviour, leaving behind the role of environmental concern whose influence is rather indirect (Tanner, 2009). This moral norm is a sense of moral obligation and consists of the awareness of consequences regarding the possible serious negative consequences for other people and the ascription of responsibility regarding the feeling of ameliorating these consequences (Tanner, 2009).

The altruism theory of Schwartz (1977) supports the positive relationship between the increase in altruistic behaviour and the awareness of other people's suffering and the feeling of responsibility of alleviating this suffering. Further studies also confirm the increased possibility for adopting an environmental behaviour when the people feel that they are indeed can help overcome the environmental problems through their behaviour (Tanner, 1999). Supporting these arguments, there is a positive relationship between commitment and pro-environmental behaviour (Heberlein & Black, 1976; Hopper & Nielson, 1991; Stern & Dietz, 1994).

As I explained in section 6.1, this theme can partially answer the research question about the everyday activities that the parents has chosen to change and the question about the factors that can help or hinder students' influence on their parents' pro-environmental behaviour. Before I start the analysis, I should explain that when I talk about guilt feelings I mean the feelings that somebody has when they are made to do something against their beliefs or normal behaviour, potentially causing any kind of harm. More specifically, "Guilt is a form of negative affect aroused by a violation of personal or internalised social values or norms. It is closely related personal norms and operates by reducing self-esteem when an individual violates those norms" (Bedford, et al., 2011, p. 4). By 'drop-in-the-ocean' feelings, I mean the feelings that people may develop when they believe that their efforts to change or improve a situation cannot make any difference because of the small number of likeminded people.

Apart from the positive aspect of children's influence on their parents' pro-environmental behaviour, children can also have a negative impact constraining their parents' behaviour. This negative impact of children stems from their preferences for specific products which are not very environmentally friendly (e.g. in terms of packaging). However, their parents buy these products, even if they know, for example, that there is too much packaging or the packaging is not recyclable. The reason they eventually buy these products is because they know that their children will consume them and they will not be wasted. This behaviour of parents can be

characterised as 'locked-in' behaviour which means locked in to their children's preferences, but it also causes them 'guilt' feelings.

Although guilt-feelings could be a motivator for pro-environmental behaviour change (Ajzen & Fishbein, 1980), it has been argued that guilt-feelings per se are unlikely to cause a substantial behaviour change unless they are accompanied by structural changes, provision systems and effective alternatives that could help individuals to act (Bedford, et al., 2011).

On the other hand, the 'drop-in-the-ocean' feeling was found that it is related to structural issues in society. More specifically, some parents felt discouraged by the fact that they are doing something for the common good when others do not do the same to support this effort. Similar feelings have been noted by other authors (Maiteny, 2002). Hence, the parents claimed that this feeling may work as a deterrent factor to keep trying, but this seems to depend on people's individual perceptions, beliefs, patience, will power etc. Another reason that this feeling arises is the parents' doubts as to the efficiency and credibility of the local recycling services, when they see that recyclable waste ends up with the general waste, they feel their effort is vain.

These structural factors can be found in the literature as contextual factors. The contextual factors either facilitate or constrain pro-environmental behaviour, influencing individual motivations at the same time (Oelander & Thogersen, 1995; Stern, 1999; Thogersen, 2005). Their results regarding the final behaviour may depend on personal factors (Geller, 1995). Some contextual factors are the availability of environmentally friendly products and services, their quality and pricing regime, the market supply of them, physical infrastructure, technical facilities and product characteristics (Steg and Vlek, 2009). Steg and Vlek (2009) mention that the contextual factors can take effect in four different ways. First of all, with direct influence on the behaviour, secondly their effectiveness may be mediated by the motivational factors, thirdly they can act suspensively regarding the interaction between motivational factors and behaviour (Geller, 1995) and fourthly, they may act drastically, determining the most influential motivational factors.

Regarding how this theme can answer the research question about everyday activities, the parents were asked if they had done anything, which may have harmed the environment to any extent, and made them feel guilty. In total, 24 parents out of 36 said that they had experienced this feeling at some point in their life, and the main reasons mentioned by parents were:

- The over-consumption of food and food waste

- The use of deodorants, aerosols, sprays, cleaning products etc.

- The use of car as well as the type of car

- The use of plastic carrying bags at the supermarket

- The packaging of the products they buy

- The discarding of recyclable things in the general waste bins

This analysis of parents' guilt feelings provides information about indirect and negative influence of children on their parents' pro-environmental behaviour. The locked-in behaviour, which derives from children's preferences for specific products or habits, can explain partially why some parents have difficulties in changing their behaviours, because of their children. And this is an interesting topic for further research and discussion about children's realisation of the impact of their consumption habits, which may lie in the fields of consumer socialisation and environmental citizenship. Hence, habitual factors have their role in the behaviour change process. They influence behaviour in a habitual and automated cognitive way, rather than based on elaborate reasoning. These habits are characterized by the need to achieve a goal, the repeat of a course of actions with satisfactory results and by the mediation of a mental process (Aarts, Verplanken, & Van Knippenberg, 1998). This mental process includes a cognitive structure that is learned, stored and retrieved from memory; a fact that could be extremely useful for the promotion of environmental behaviour practices (Steg and Vlek, 2009). However, the perception of habit is a matter of dispute, since people tend to rationalize the information and the actions that are in line with their habitual behaviour (ibid).

Another reason that could explain parents' decisions, apart from the impact of children's preferences, is children's pester power through constant requests (Solomon, 2002).

Regarding the 'drop-in-the-ocean' feeling, 27 parents out of 36 agreed that they were not affected negatively by others' behaviours, for example, if others do not try to protect the environment, and they believed that every little individual effort can help, underlining also that if somebody manages not to experience this feeling, then they may intensify their effort to protect the environment. On the other hand, four parents said that 'collective' effort is needed, because they were of the opinion that individual contribution cannot solve the problem having a substantial impact and make a difference. Three more parents admitted that they may have been influenced by others in a negative way, meaning that they may have relaxed their pro-environmental efforts.

Hence, in general the majority of the parents were positive regarding their commitment to their efforts towards more pro-environmental behaviour; even if they do not see others do the same, without letting this 'drop-in-the-ocean' feeling prevent them from trying. However,

there were some parents whose will power may have not been that strong, and they admitted that there was a possibility for them to get discouraged. This is part of the answer to the research question about the factors that facilitate or hinder children's influence on their parents' pro-environmental behaviour. This means that these kinds of feelings may counteract children's efforts to influence their parents positively. On the other hand, since most parents said that they have been influenced by media, this could be a very good opportunity to communicate local environmental initiatives, in order to make parents feel more confident and part of a collective initiative.

6.6 School's efforts to promote sustainability

As explained in section 6.1, this theme answers partially all of the research question, but mainly the question regarding the effectiveness of the NFSS to encourage students to influence their parents' pro-environmental behaviour. In effect, this is a kind of evaluation of the NFSS in terms of its by-product, which is the capacity of the programme to influence adults' pro-environmental behaviour through children.

The main research question regards the 'how' namely the ways in which the NFSS through schools encourages children to influence their parents' pro-environmental behaviour. Therefore the children were asked in what ways they believe their school had tried to pass the message of sustainability at home. In essence, their answers were based on the ways they understood and not necessarily on the ways that the school focused on. In this paragraph I present the school's effort to promote sustainability at home from different perspectives. Namely, what the teachers said and how the children and parents understood this effort and through what means, and finally how the students characterised this effort.

As we saw in the sections which analyse the interviews with the heads and the teachers of each school in chapters four and five respectively, we will see that sustainability was considered by the schools as a high profile message that they had to pass to students and the wider community; and which was also very well embedded in school's ethos. Both schools tried to do so by running various environmental groups where the children could participate, organising trips of environmental interest, bringing experts at school and communicating their efforts regarding sustainability to the parents through the school newsletter. Moreover, the schools tried to involve parents in their efforts and children's efforts regarding sustainability despite that they lacked feedback from the parents about how sustainability has been transferred at home by their children. It was stressed that by making sustainability fun and interesting the teachers managed to ensure children's engagement and enthusiasm. In essence, all these mentioned above apart from parents' direct engagement, were meant to

instigate a discussion between parents and students about the environment, enhancing at the same time a potential transfer of environmental knowledge between these two age groups.

Although some of the ways mentioned before were effective and influenced the parents they did not work as a motive to start a discussion between parents and children, like school newsletter and competitions. This may have been the case because these ways were more direct to the parents or parent-oriented (e.g. newsletter), or they were more discernible or understandable for them. Another explanation could be that according to parents, the most common topic of discussion with their children is the school, so maybe the children had mentioned what they did at school but as a part of their daily programme at school without having the environmental aspect in mind.

Therefore, we see that the school used the programme effectively and managed to make children understand what they tried to do and how, since most of those ways were also mentioned by the heads of the schools and the teachers. However, when the students were asked what the motives to start a discussion about the environment at home were, then the aforementioned ways were poorly mentioned. More specifically, nine students (out of 37) said that they started a discussion after having noticed that the lights and other appliances had been left on, three (out of 37) mentioned the guests at school, one (out of 37) mentioned the school trips and the school activities and talk. What we could conclude is that the school deployed some ways or methods to transfer the message of sustainability at home through the students, the students understood what these ways were but finally they did not use them as motives to start a discussion with their parents, leading to uncompleted circle, and probably an unaccomplished goal.

To sum up, we saw in this section that the NFSS was used effectively by the schools to promote the message of sustainability and influence parents' pro-environmental behaviour. Although the programme was used effectively by the schools, its actual effectiveness to influence parents indirectly was moderated by children's potential difficulty to understand and communicate to their parents the reason why they were taught about sustainability. Moreover, the factors in section 6.2 moderated the effectiveness of the NFSS regarding its by-product, namely its ability to encourage children to influence their parents' pro-environmental behaviour.

From the teachers' point of view, sustainability should be 'fun' for children to maximise its potential impact, not only in terms of children's participation but also in terms of the final influence on students and their parents. Hence, the school used some methods to achieve this goal, methods whose goal was understood by the children, however without such an enhanced effectiveness in terms of instigating a discussion between children and parents.

While, this would make us believe that finally, school's effort does not meet the goal, or at least a part of it. On the other hand, the parents mentioned most of the ways that the schools used and the children included in their answers. This may mean that the children do not realise that they learn something about sustainability or they may not grasp the reason behind schools' initiatives to promote sustainability.

After all, something interesting becomes apparent after the analysis of the efforts of the two schools to promote sustainability also outside the school boundaries and reach students' homes. This is the fact that the two schools followed different methods and ways to communicate the message of sustainability and influence children and parents, but children's and parents' responses were quite similar in both schools. One possible explanation is that the perception and understating of children of the same age is quite similar which result in similar messages and information transferred home.

Compared to the environmental education programmes that were reported in the previous studies and the NFSS, there are two main differences: (i) The NFSS has the longest duration, launched in 2006. The shortest duration of the programmes in previous studies is one month (e.g. Vaughan et al., 2003) and the longest one is 5 years (Volk & Cheak, 2003). Another difference between the NFSS and the programmes in the previous studies is that (ii) the NFSS does not dictate specific activities that the schools should follow as the other studies did (see for example Sutherland & Ham (1992); Uzzell et al. (1994); Vaughan et al. (2003)). The NFSS suggests only the themes that schools could focus and work on, for example the themes of food and drink, energy and water, buildings and grounds etc.), by integrating these themes into the curriculum and the school life. On the other hand, the programmes in the previous studies introduced specific activities as teaching methods such as dramatics performances, dance, stories and interactive games (Ballantyne et al., 1998a), storytelling (Ballantyne et al., 2001a), oral presentations, small group research, interschool meetings (Ballantyne et al., 2001b). On the contrary, the success of the NFSS lies in its voluntary character and the flexibility that it provides teachers and students with. In effect, they can choose the doorways of sustainability they want to focus on, the timescale, since the NFSS is a long-term programme, and the ways in which they can promote the message of sustainability. The schools are also given the opportunity to try different practices and approaches, address to different audience and listen to students' voices and preferences.

6.7 The role of socio-economic background

One of the criteria for choosing these two specific schools as case studies was the socio-economic background of the residents in the two different areas. The motive was to investigate the impact of families' socio-economic background on parents' pro-environmental

behaviour and willingness to learn from and be influenced by their children, regarding their pro-environmental behaviour. Apart from the study of Uzzell et al. (1994), no other study to date has investigated the role of families' socio-economic background in their pro-environmental behaviour.

The initial assumption was that the families with higher socio-economic background would be more environmentally conscious and willing to improve their pro-environmental behaviour than those families with lower socio-economic background (Uzzell et al., 1994). One of the reasons that could justify this assumption is the fact that for example the high income family can afford environmentally friendly products which tend to be more expensive than normal products. They can afford locally-produced things where for examples economies of scale for imported products do not apply. Another example is that they can afford environmentally efficient cars or electrical appliances. On the other hand, their economic status could counteract their efforts to be environmentally friendly, by consuming or travelling more than the low income families, increasing in that way their carbon footprint. This point of view is supported by Jackson et al. (2007) and Druckman & Jackson (2009) who associate expenditure with use of resources and carbon footprint, and inevitably with individuals' income, indicating a positive correlation.

The findings of this study regarding the fact that there is no significance difference between the consumption patterns, mainly energy and water consumption, of the families of different socio-economic background. Hence, the parents, regardless of their socio-economic background, were mainly motivated by the economic benefits of pro-environmental behaviour, such as saving money by saving energy, and then by the environmental benefits, given the current worldwide financial situation (SDC, 2010). Other than the economic benefit, the economic cost of pro-environmental behaviour is a deterrent factor in both cases (Burningham & Thrush, 2001; Eames, 2006). There is also a considerable body of research arguing that the level of concern about environmental issues does not differ significantly between middle class and deprived areas (Hastings et al., 2005; Eames, 2006).

This finding contrasts the findings of the study of Druckman and Jackson (2008) who found that the consumption patterns of different economic segments of society differ widely. More specifically, they have found a positive correlation between income and energy use at national level (ibid), supported also by the previous study of Drenser and Ekins (2004).

However, after children's and parents' responses I cannot infer any significant differences that could be justified by the different socio-economic background. More specifically, the participants in both case studies focused their behaviour in energy and water saving and waste management, mainly through recycling. Intriguingly, the motive parents gave in both case

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studies was money saving through utility bills. Regardless of families' economic background, the parents in both case studies highlighted the current recession as a drive for adopting practices to save money.

From participants' responses regarding their current lifestyles, almost the same percentages of people in both groups said that they have been doing "quite a few things that are environmentally friendly' and they have been "environmentally friendly in most things they do". But apart from the same percentages between the two groups that described before, it is also very interesting to stress the same distribution of people among different types of lifestyles (e.g. one type is "I am environmentally friendly in most things I do") between the two groups. For example, almost the same percentage of families with income less than £40,000 and more than £40,000 said that they have been doing "quite a few things that are environmentally friendly' and they have been "environmentally friendly in most things they do". As a result, it can be inferred that the economic background of the families did not play an important role in their adoption of sustainable lifestyles. Likewise, as far as the role of socio-economic background in how parents perceived their children's efforts to influence their pro-environmental is concerned, there is no significant difference between the two case studies.

Gatersleben et al. (2009) conducted a study investigating any possible correlation between materialism and environmental concern. However, they did not find a negative correlation between environmental concern and materialistic values, but they found a negative correlation between material value orientation and intentions to change (ibid). Moreover, Gatersleben et al. (2009) found a positive correlation between environmental concern and willingness to change.

Regarding the level of frequency of discussion about the environment at home, there is no difference between the two case studies. 65% of the students in each case study said that they "rarely' or "never" discussed about the environment with their parents. This shows that the socio-economic background does not affect the priority of the environment as a topic for discussion in family agenda. None of the previous studies have stressed any correlation between families' socio-economic background and level of discussion about the environment. However, they mentioned other factors that could affect the level and frequency of discussion about the environment within the family. For example, Grodzinska-Jurcack et al. (2003) reported that children's participation in environmental activities at school can affect the frequency of discussion, Ballantyne et al. (1998a) reported the enjoyment of the activities per se and (Ballantyne et al. (2001a) reported the relevance of the environmental issues the children deal with in their lives.

6.8 Evaluation of methods

The methodological contribution of this research study lies in its originality which stems from the innovative methods and methodology that were followed and explained in chapter three. The research methods were innovative in the following ways:

1. A democratic process of constructing the parents' interview protocol, where the children had the opportunity to have an input to research design by deciding and voting for the best questions that should be asked in the interviews.

2. Students' participation in data analysis in focus group-phase 2.

3. Comparison of children's and parents' perceptions in children's influence on parents' pro-environmental behaviour.

4. Triangulation of information from four different sources (experts, teachers, students and parents).

5. Investigation of a long-term environmental education intervention.

This methodology and the methods included worked very well as for collecting and analysing the data. The participant observation helped me to: (i) built a good rapport with the teaching staff and the students (ii) evaluate the level of diffusion of sustainability across the curriculum and (iii) examine how well-embedded sustainability is in school's ethos and how it is communicated to students in general. Children's focus groups and questionnaires provided me with a lot of information that I was able to triangulate with the information I got from the teachers and the parents. The consistency in participants' responses which was inferred after the triangulation of the information proves the effectiveness of the methods and the methodology.

In effect, the triangulation of the data and information strengthen the validity and effectiveness of the methods that were used in this research study. For example, teachers, parents and students were asked about children's influence on parents' pro-environmental behaviour. Hence, regarding this question, information was elicited from three different perspectives. However, the triangulation does not refer only to information about a specific question or topic from different perspectives. It refers also to the perception of the participating groups about each other. For example, the children were asked about their parents' current lifestyle and how environmentally friendly they think it is and what they do in order them to be more environmentally friendly. On the other hand, the parents were asked about the everyday home activities that their children try to improve and make more environmentally friendly. Likewise, the parents and students were asked about how the school

try to be more environmentally friendly while the teachers were asked about in what ways the families try to be more environmentally friendly. Therefore, this approach strengthens the validity of the information and the conclusions that were inferred.

As it was mentioned above, this study is heavily based on participants' self reported perceptions, a practice that have been used in other studies in the past. Examples of self-reported learning and knowledge can also be found in Brooks-Wilson and Snell (2012), where participants were asked to rank their environmental learning. Another examples of self-reported values and understanding of the environment in children's everyday life, as well as examples of self-reported environmental awareness and knowledge can be found in Kahn and Friedman (1995). In this research study, children were asked for their self-reported level/frequency of discussion with their parents about the environment and the environmental practices adopted at home (Kahn & Friedman, 1995). Another example is the comparison of self-reported environmental views, concerns and knowledge of socially disadvantaged adults and children; filling a gap in the literature in terms of the comparison of adults' and children's environmental views, concerns and knowledge (Wilson & Snell, 2010). However, Huckle (2009) believes that research participants' level of knowledge, attitudes and behaviour should not be self-reported through questionnaires but through items, designed to help participants apply their knowledge, values and skills in order to express their opinion on sustainability issues.

On the other hand, there were some limitations in those methods and the methodology that was followed. First of all, children's responses to the questionnaires may have been influenced by 'peer pressure' and some of the less confident children seemed to have copied some answers or ideas from their friends, based on their responses to the questionnaires. Secondly, although the first phase of the focus group with children's participation was very useful and provided rich information, there was some repetition on the questions that the children proposed, which limited the variety of questions. Thirdly, counting on people's perceptions may have restricted the comparability of the responses but facilitated their measurability.

One suggestion for further improvement would be the study of a school that has not implemented any environmental education programme. This would help me isolate the sources of students' and parents' environmental knowledge and influence. In doing so, the current environmental programmes can make those changes that could integrate the most common sources that the participants reported. At the same time new programmes can be designed considering these recommendations regarding the sources. Another suggestion for further improvement would be the study of schools in rural and urban areas to compare students' and parents' inclination to pro-environmental behaviour given the area and the proximity to the natural environment. This could contribute to the development of a set of

different versions of a programme which could be adapted to specific types of areas. None of the previous studies have done anything similar in the past to adapt a current environmental education programme to schools' specific needs, preferences and characteristics.

In general, this set of methods and methodology can apply where there are relationships of dual nature, for example child-parent, employee-employer, consumer-producer, teacher-student etc.

To sum up, the gaps in the literature that have been filled in with this study are:

1. The lack of exclusive focus on children's influence on their parents' pro-environmental behaviour.

2. The lack of an evaluation of an environmental education programme in terms of its by-product, which is children's influence on their parents' pro-environmental behaviour.

3. The lack of comparison between children's and parents' knowledge and perception about the environment and influence.

6.9 Conclusions

The aim of this chapter was to shed light on some themes that resulted from the analysis of the two case studies. These are the theoretical, empirical and methodological originality. The aforementioned themes are particularly relevant to the research questions, as an extension of the answers that were given for each case study separately. Hence, the main ideas that came up are children's confidence, the classification of the parents, the existence of guilt feelings and drop-in-the-ocean feelings; and finally the school's effort to promote sustainability.

These four themes resulted from the patterns on participants' responses that came up through the data analysis. Their answers disclosed information that was common and could be classified into groups. Moreover, these ideas were not addressed and analysed in any other study before in this area of the literature. Hence, they contribute to the theory by forming a framework with some factors that can facilitate or hinder children's influence on their parents, based on a learning process.

More specifically, these ideas answer the research questions about children's influence on their parents' pro-environmental behaviour, the everyday parental activities that are affected by children's behaviour, the factors that can help or hinder students' influence and the effectiveness of the NFSS. Regarding children's influence, there is not a specific and concrete answer if children manage to influence their parents, but instead there is a classification of how parents perceive children's efforts to influence their behaviour and if finally they adopt their suggestions. Additionally, the level of influence depends on children's confidence in their

knowledge and ability to influence their parents, as it is described by an ongoing feedback process. Regarding the parental activities that change after children's suggestions and the factors that facilitate or hinder children's influence, the idea of parents' guilt feelings and drop-in-the-ocean feelings answers partially these questions. This idea reports parents' locked-in behaviours because of their children's preferences and incentives-factors that could motivate parents to change their behaviours. As far as the effectiveness of the NFSS to encourage children's influence on their parents, the last idea describes how children and parents perceive and take on board school's efforts to promote sustainability, driven by the NFSS.

Regarding children's confidence in their ability to influence their parents' pro-environmental behaviour and in their environmental knowledge, we could say that there is a relationship between children's confidence in knowledge and their ability to influence which finally leads to a general level of confidence, also confirmed by the parents themselves. This children's influence on their parents led to a categorisation of the parents in terms of whether and how they have been influenced by their children. So, there was a range of influence and actions from parents who said that they have not been influenced by their children for different reasons to those who have been influenced.

As far as the two types of feelings that the some of the parents experienced are concerned, we saw that they resulted from their environmental awareness and they were not discouraged by the fact that other people did not share the same ideas or their willingness to protect the environment. Finally, it is very important that the students managed to understand the manners that the school used to influence their pro-environmental behaviour directly and their parents' afterwards. Although these methods were not able to work as motives and instigate a discussion about the environment between the students and their parents, some of them were finally understood and stressed by the parents themselves; proving that schools' efforts to pass the message of sustainability at students' homes had worked to a certain extent.

Where the children believed they had the biggest influence, the students from both schools 'agreed' that it was in recycling and water and energy saving, something that was confirmed not only by the teachers of both schools, through the emphasis they have given to these 'themes' but also by the parents themselves. Additionally, when the children were asked about the ways they understood their families tried to protect the environment, the students from both schools again emphasised on these three 'doorways'. Finally, as far as difficulties the parents had in adopting children's suggestions are concerned, always according to the students' views, it was the extra cost, the lack of time and the location of house and work

(Druckman & Jackson, 2009). Additionally, the views of the students from both schools were in the same line.

This chapter also highlighted the role of families' socio-economic background in their decisions to change and improve their pro-environmental behaviour. In effect, the data from both case studies show that there is no significant difference between families of different socio-economic background in terms of their sustainable lifestyles. This is because, regardless the income of the families, most of the parents were interested in saving money as a result of some environmentally friendly actions (e.g. saving energy and water).

To sum up, as we can see from the further comparison and analysis in this chapter, both schools mostly agreed in students', parents' and teachers' views regarding the influence of students on the families' sustainable lifestyles, and in effect the differences in families' socio-economic background did not seem to play an important part in it. Regarding the role of the schools, and whether they had managed to influence indirectly families' sustainable lifestyles, the majority of the parents in both case studies admitted that they had been influenced by the school, with the parents of the second school being more positive. Finally, this chapter comes to end with the evaluation of the methods that were used presenting both their disadvantages and the limitations.

Chapter 7 – Conclusions

This last chapter synthesises the ideas, findings and conclusions from all the previous chapters in order to answer the research questions stated in the introduction.

The main research question was:

"How does Environmental Education at school encourage children's influence on parents in terms of sustainable lifestyles?"

This research study focused on two primary schools which have made efforts to promote environmental sustainability and integrate the principles of the National Framework for Sustainable Schools. The schools used this strategy as a signposting framework in order to operate in an environmentally friendly way, embed sustainability in their ethos and instil pro-environmental behaviour in their students. In this research, this question is answered from three different perspectives, that of teachers, students and parents. In both case studies, the teachers agreed that there was some influence from children on their parents towards more sustainable lifestyles, but this influence is small and occurs in different ways. For example, some children took home information about the environment and initiated a discussion with their parents, others did not discuss the environment with their parents but they started to adopt more pro-environmental behaviour at home, and some were able to correct their parents suggesting what they should do and how they should do it from an environmental point of view. Teachers maintained that the effect of this influence is gradual and steady despite the lack of feedback from parents.

From the students' point of view, most of them claimed that they have influenced their parents 'quite a bit', 'quite a lot' and 'a lot'. This is a positive sign indicating students' confidence both in their ability to encourage pro-environmental behaviour at home and in their actual influence on their parents' pro-environmental behaviour. Most of the parents said that their pro-environmental behaviour has been 'somewhat', 'very' and 'extremely' influenced by their children. The variation within these categories is quite similar to that of children's opinion about the level of their influence. However, the main differences are in the highest levels of influence where children felt more confident in and capable of influencing their parents than parents themselves believed. In effect, there is a consistency between parents and children and how both groups see children's role in families' pro-environmental behaviour.

However, when the parents were asked whether they have felt that their children have influenced their pro-environmental behaviour, the answer is not one-dimensional. There is a

consistency between children's and parents' responses but I managed to categorise parents into groups in terms of if and how they have felt their children's influence. These categories are the following:

1. Parents who have been influenced by their children because they had brought information from school.

2. Parents who have been influenced by the fact they have had children and not by their children themselves.

3. Parents who learn with their children at the same time.

4. Parents who have not been influenced by their children.

5. Parents who have not been influenced by their children because they were pro-active.

The second question is

"What everyday parental activities are influenced by children's' pro-environmental behaviour and why are those specific activities affected?"

Most of the children and parents agreed that the everyday activities that were chosen to change were related to waste management, water and energy saving. More specifically, they started recycling more systematically and checking the information labels on packaging. They also started turning off the lights and other electrical appliances at home. For example they stopped leaving the TV on standby. Regarding the water saving practices, they started turning off the tap while brushing their teeth, they started having a shower more often than a bath, and they also started collecting rain water for the plants. However, as seen in the classification of parents above, some of them were pro-active and had started doing these kinds of things before their children's suggestions.

Regarding the reasons why they chose to integrate those practices, the parents indicated that it was because they are more easily measurable and applicable, more practical, their results are more sensory-based and finally their results can be interpreted in financial terms (e.g. money saving) more easily. This is something that the teachers had already confirmed regarding the school's efforts to become more sustainable. The money saving aspect of those environmental actions was considered an important motive by most of the families, regardless of their socio-economic background. This was also the case when the parents were asked about the willingness to buy environmentally friendly products, where their higher cost was a deterrent factor.

Hence, the participants gave me the impression that their understanding about the environment or their interpretation of sustainable lifestyle was confined to the adoption of those environmental attitudes. Another explanation can be given by parents' responses indicating that the willingness to change their lifestyles was positively correlated to the effort they had to put in order to change their lifestyles.

The third question:

"What are the factors that help or hinder students' influence on parents?"

This question regards the factors that helped or hindered students' influence on their parents' pro-environmental behaviour. Most of the students mentioned their parents' lack of time, busy lifestyles (mainly because of work), the lack of infrastructure in the neighbourhood (e.g. not enough recycling bins), the location of the house and parents' workplace and the extra cost for environmentally friendly products. Students' views were thoughtful and were confirmed by their parents too. The parents admitted that their busy lifestyle was a very important deterrent factor. Moreover, the parents mentioned the price and the extra cost of environmentally friendly products, especially in a very challenging financial period. However, most of the parents mentioned their children's school as one of the factors which positively influenced their lives, through assemblies, teaching children specific things about the environment, school trips, newsletters, competition and environmental clubs which their children are members of.

Finally, the fourth question that this thesis tried to answer regards the effectiveness of the National Framework for Sustainable Schools to foster intergenerational influence within the family. In effect, this question introduces the idea of evaluation of this environmental education intervention regarding its by-product which is children's influence on their parents' pro-environmental behaviour. The evaluation of environmental education programs is a gap in the literature highlighted by Henderson and Tilbury (2004) who maintained that only few programs have been followed by evaluation of their achievements.

Initially we should say that these two schools were 'best cases', given their extensive engagement with NFSS and environmental issues more generally. Because of the fact that sustainability is such a high-profile message at those schools, most of the children's were very positive and satisfied about their school's effort to be a sustainable school and they found this effort interesting, exciting and useful. Moreover, most of them were 'happy' and 'very happy' with their pro-environmental behaviour at home and school and claimed that they know 'quite a lot' and 'a lot' about the environment. This is a very first sign of the effectiveness of this strategy in terms of intergenerational influence within the families, which relates to children's

knowledge and confidence in their knowledge and their ability to influence to influence their parents.

More specifically, children's perception of their own environmental knowledge, as well as their knowledge compared to their parents' knowledge can affect their perception of the capacity they have to influence their parents. Then this perception affects children's confidence in their knowledge and ability to influence, which could also be enhanced by parents' perception about children's influence; if the children were finally aware of those perceptions through their parents' feedback. However, through parents' interviews and children's questionnaires, I found out that the communication between parents and children in the form of discussion about the environment could allow parents to provide their children with feedback. Children's confidence could in turn enhance their perception of ability to influence their parents' pro-environmental behaviour; leading to a loop process which could enhance children's influence also in other areas (e.g. consumption habits).

Finally, I should mention the contribution of this thesis lies in its theoretical, methodological and empirical originality. In particular, this study applies the intergenerational learning theory as the theoretical framework which explains the learning processes that take place at school and home, between different age groups. Regarding the empirical originality, this research study investigates a subject area that has not been studied in depth to date, focusing exclusively on children's influence on parents' pro-environmental behaviour. Hence, this subject area is the children's influence on parents' pro-environmental behaviour, encouraged by a long-term environmental education programme that has been taking place at school. Moreover, this study evaluates also the effectiveness of the programme to encourage children to influence their parents, even if this is not its initial and main goal. Hence, the study sees this influence as the by-product of the environmental education programme.

 As far as the methodological contribution, which derives from its methodological originality, is concerned, it lies in the use of innovative methodology and methods that were used. Hence, this study includes some novel elements regarding the data collection process in the area of ESD and particularly in the context of children's influence on their parents' sustainable lifestyles. The novelty introduced in this section lies in two things, the methods used and the methodology followed for data collection. Regarding the methodology, two specific approaches should be mentioned. First, children's participation in research design, through for example democratic decision making processes; and second triangulation (Robson, 1997; Gray, 2009) by collecting data from different sources, such as experts (policy maker, academics, consultants), head teachers and teachers and parents.

Moreover, are also identified the methodological gaps in the literature and how they can be filled through the application of a methodology that has innovative elements and methods to explore children's influence on their parents' sustainable lifestyles. The main gap that this is that there is not any previous study in this specific area of ESD that focuses on developing and applying innovative methods for data collection. What has been done so far is that some less conventional methods within the framework of an environmental education programme have been used, but mostly as teaching methods so as to educate the children and their parents. According to the literature in this specific subsection of ESD, the data collection methods that have been used were mostly interviews and questionnaires with parents and children, and only some with teachers, administrators and community members.

The theoretical originality and contribution of this study lies in the development of the 'Children's confidence – influence model'. More specifically, this model presents the ongoing feedback process that links children's confidence in their knowledge and ability to influence their parents, with parents' perceptions of and feedback on children's knowledge and influence. Specifically, the more positive feedback children receive from their parents regarding their environmental knowledge and ability to influence them, the more confident the children feel. And the more confident the children the bigger the influence the parents claimed. Hence, this feedback can be given to the students through intra-family communication and discussion about the school life and the environment.

With this thesis, I managed to answer my initial research questions using innovative methods that have never been used in this specific area of environmental education, and at the same time I elicited information and data that helped new ideas and concepts to come to the surface. These new ideas are described in the discussion chapter and regard children's confidence, parents' classification, guild feelings and drop-in-the-ocean feelings and school's effort to promote sustainability.

7.1 Recommendations

This research study can work as a recommendation tool for policy makers in order them to improve the operation of the NFSS by highlighting the limitations of the strategy in terms of the way sustainability is communicated to students and their parents. Moreover, policy makers can elicit information about children's and parents' understanding of the manners that the schools used to promote sustainability and how effective a variation of those ways can be. This is because in this research study it has been found that although the two schools followed different ways to communicate and promote sustainability, children's and parents' responses were quite similar. Hence, an idea of developing a specific portfolio of different ways to

promote sustainable lifestyles may be useful. And this is an area for further study, to find, develop and evaluate the different manners, and list the most effective.

The 'Children's confidence – influence model' and how it affects parents' sense of influence can be a strong indication for schools, in order them to adapt their ethos and become more children-oriented in certain ways and areas. In doing so, they could enhance children's confidence and eventually achieve a multiplied effect on parents' pro-environmental behaviour. In addition, this model can be the onset for further research on children's judgements about and interpretation of ambiguous information and feedback. Moreover it can motivate further research on children's confidence and how it is linked with familial relationships and dynamics. For instance, the ongoing feedback process described through the aforementioned model can be linked with children's psychology within the family environment and how the skills and confidence that children develop through that process can be transferred to different context and external environments.

The 'Children's confidence – influence model' is one of the main findings of this research study and its contribution is multifaceted. Apart from the areas that mentioned above where this model could motivate further research, it can be applied to research in children's political socialisation before children's voting age. Before that age children start develop and support their political views, which they are willing to express and communicate. Their confidence in their knowledge of the political situation can have positive impact on their confidence in their influence on parents' political views. This process though requires extensive discussion between parents and children, where parents' feedback can enhance more their children's confidence. The feedback can be in favour or against children's political views; however it will motivate further discussion, which will help children develop political and communicative skills, trying to explain and reason their political views. Either way, children's confidence will be enhanced through this process of justification, reasoning and reflection.

The categorisation of parents' in terms of how they perceived and interpreted their children's influence on their pro-environmental behaviour recommends further research about children's role as sustainability promoters when the level of environmental knowledge and awareness in the families varies. From schools' point of view, this classification could be proven useful by helping them to adapt their communication tools and strategies based on the aforementioned different categories. An example could be the adoption of different writing styles of the schools' newsletter targeting at different type of families. More specifically, a detailed newsletter with more advanced information about the environment could work better for those parents who are better informed, suggesting ways, maybe more complicated, for further improvement of their pro-environmental behaviour. On the other hand, a more simplistic way

of writing could work well for those parents who have basic environmental knowledge by recommending specific improvements; in order them not to be put off by the complexity new pro-environmental behaviours or the effort they need to put.

Finally, I would like to highlight that my interest in education led me to complete a Postgraduate Certificate in Education in the University of Oxford, during the last year of my doctorate studies. This was a real challenge for me not only in terms of time management but also in terms of applying the principles of education for sustainable development in the schools where I did my internship. And this is my goal from September when I start work as a teacher in a secondary school in London. I will try to diffuse sustainability across the curriculum by encouraging the cooperation among teachers of different subject areas, and run environmental groups at schools.

Appendix 1

Interview protocol for the Head teacher

Name:

School:

Position:

Date:

1. Are there any local organisations or charities you associate with and help you become more 'sustainable'?

2. How has your school adopted the Sustainable School Strategy?

   - Environmental groups

   - Environmental practices / initiatives

   - Outdoor activities or trips to local farms etc.

3. Does your school show any preference to specific themes of sustainability?

4. What does the reward (e.g. Ofsted's assessment or Leading partners) mean to you and what to children separately; in terms of the environmental achievements (e.g. it may work as a motive)?

5. How do you help other schools to be more sustainable? How do students participate in that? Is there any parental involvement?

6. What ages are more willing to participate in environmental activities?

7. Is this interest/willingness/enthusiasm same/different for other subjects?

8. Could you categorise the families in terms of their interest for the school activities and their awareness? E.g. those who care and know how to help, those who care but don't know and those who don't care.

9. What kind of feedback do you receive from teachers, parents and children?

10. Have you noticed any influence on children who do not participate very actively in this effort?

11. Have you noticed any influence on parents' participation, first of all in their children's homework and then in their environmental activities?

12. Do you think that the work done in this school has impact on the community out of the school?

13. Have you got any activities which aim at children's influence on their parents and families?

14. What makes you want to continue this effort and what makes children to do so?

15. What is your next goal in terms of the Sustainable Schools Strategy? How are you planning to achieve it?

16. How well embedded is this environmentally friendly stance in the school ethos and children's behaviour?

17. Do you think that this effort has got lasting results, not only within the school boundaries but also out of them?

   Have you seen any difference in parents' interest in environmental things in terms of their background (education or income, e.g. middle-class and working-class families)?

   What do you think the motives for the families to engage in environmental activities are? (e.g. saving money, saving energy, or they see it more altruistically)?

   From your impression, do you think that there is an influence from children on their parents in order to turn them green?

   In the literature I have read the same and this is interesting. We have the impression that children can do a lot of things but finally the evidence shows the influence is very small.

   Do you think that finally children change their behaviours when they go home, because I have also been told that sometimes children just repeat what they have been said at school or what they have learned, but they do not actually change their own behaviour?

Interview protocol for the teachers

Name:

School:

Position:

Date:

1. Why have you been active in this area and how do you feel about it? (motives)

2. How did you integrate the Sustainable School Strategy or Eco-Schools programme guidelines in the curriculum?

3. How willing were your students to participate? Have you seen any preference to specific themes of sustainability?

   For example, is their enthusiasm obvious?

4. Have you seen any difference in the level of participation of children of different family background? (Income and education)

5. Could you categorise the families in terms of their interest for the school activities and their awareness?

6. What are the benefits of children's engagement in sustainability practices for the school, their families and themselves?

   Any benefits for the families?

7. Have you got any activities which aim at children's influence on their parents and families?

8. Do you think that the children try to influence their friends and families towards a more sustainable lifestyle?

9. Have you observed any influence of children on their families for the adoption sustainable practices at home? Has their interest in what their children do at school (academically and environmentally) been enhanced?

10. What kind of feedback do you receive from children and parents regarding the environmental activities (and their influence on children)?

    Have there been any parents who came and said "My children mad me change?"

11. Have you seen any difference in parents' participation and interest of different background (income and education)?

    Have you noticed any specific motive for parents to change their behaviours?

    Have you seen different motives for different family backgrounds (e.g. poor families for saving money, and high income families for a more altruistic and ethical perspective)?

12. How well embedded are these principles in children's behaviour? Do you think they will have lasting results?

Interview protocol for the parents

Family name:

Child's name:

Date:

Place:

Estimated time: 20-25 minutes

Environmental Understanding

I am going to ask you about your beliefs and opinion about the environment and some changes that people might make to their lifestyles. Remember there are no right or wrong answers. I am just interested in what you personally do at the moment, not what you think you should or shouldn't be doing.

1. How much do you feel you know about the environmental impacts of your lifestyle?

   A great extent (1)   Somewhat (2)   Very little (3)   Not at all (4)

1st member	2nd member	3rd member	4th member	5th member	6th member

   Why does this happen?

   Are there **any difficulties** in getting informed?

   How do you think you could overcome this problem?

   Who do you think could help you?

2. The term 'sustainable' entails a future meaning.

   Explanation: Brundtland (1987): Sustainable development is development that meets the needs of the present without compromising the needs of future generations to meet their own needs.

   Probes:

   How does this future perspective influence you to think about the environment?

   Have you thought that the quality of the environment now can affect the quality of life of your children and your children's children?

   How do you think their future could be affected?

Environmental Attitudes & Beliefs

3. What do you mostly think when you decide to buy something, your needs or your wants?

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1st member	2nd member	3rd member	4th member	5th member	6th member

4. Is the environment a priority when you decide to buy something?

(Please circle your answer)

1st member	2nd member	3rd member	4th member	5th member	6th member

Not a priority	1
Low priority	2
Medium priority	3
High priority	4
Essential	5

Why is that?

Is **price** a higher priority?

What sort of things you could think about in terms of the environment when you buy something?

e.g. packaging, if it is imported or not etc.

Do you check the labels on the products? E.g. if it recyclable.

Environmental Behaviour & Lifestyle

5. Which of these best describes how you **feel** about your current lifestyle and the environment?

1st member	2nd member	3rd member	4th member	5th member	6th member

I'm happy with what I do at the moment	1
I'd like to do a bit more to help the environment	2
I'd like to do a lot more to help the environment	3
Don't know	4

Could you give me an **example** of what you are doing for the environment and make you feel that way?

Have there been times you felt guilty about doing things that harm the environment?
Do you believe that your everyday behaviour and lifestyle do not contribute to climate change?
Did you compare yourself to others in order to answer the question?
Do you think that it's not worth doing things to help the environment if others don't do the same?

6. And which of these would you say best describes your **current** lifestyle?

1st member	2nd member	3rd member	4th member	5th member	6th member

I don't really do anything that is environmentally-friendly	1
I do one or two things that are environmentally-friendly	2
I do quite a few things that are environmentally-friendly	3
I'm environmentally-friendly in most things I do	4
I'm environmentally-friendly in everything I do	5
Don't know	6

If their answer is **negative**:

Is the environment a low priority compared to other things in your life?

What is on the top of your list?

Could you please tell me what are you doing on a daily basis regarding the environment?

Do you prefer walking or riding your bike to using your car? If yes, in what occasions? (e.g. going to work, for leisure, going to school)

Probes for current lifestyle:

- If they mention or not **recycling:**

Do people have a duty to recycle?

Do you prefer recycling items rather than throwing them away?

Do you check whether the packaging of an item can be recycled, before you buy it?

Have there been times you decided not to buy something because it had too much packaging?

Do you reuse items like empty bottles, tubs, jars, envelopes or paper?

Do you take your own shopping bag when you go shopping?

Do you compost your household's food and/or garden waste?

Do you try to waste less food?

- If they mention or not that they control the amount of **water and energy** they use:

Do you pay much attention to the amount of water and energy you use at home?

- If they mention or not preference for local products:

Do you make an effort to buy things from local retailers and suppliers?

Ask them about their **motives:**

Do you think it is only worth doing environmentally-friendly things if they save you money?

Do you find it hard to change your habits to be more environmentally-friendly?

Do you believe that any changes you make to help the environment need to fit in with my lifestyle?

7. Are you a member of, or do you make regular donations to, any of the organisations on this list?

1st member	2nd member	3rd member	4th member	5th member	6th member

National Trust/The National Trust for Scotland	1
Royal Society for the Protection of Birds (RSPB)	2
WI (Women's Institute)	3
Civic Trust	4
Wildlife Trusts	5
WWF	6

The Woodland Trust	7
Christian Aid	8
Stop Climate Chaos	9
Oxfam	10
British Trust for Conservation Volunteers (BTCV)	11
Greenpeace	12
Ramblers Association	13
Friends of the Earth	14
Council to Protect Rural England	15
None of these	16
Another organisation concerned with the environment (specify)	17

Probes about "altruistic" behaviours:

Do you often talk to friends and family about the things they can do to help the environment?

Do you try to persuade people you know to be more environmentally friendly?

Children's Influence

8. What are the sources of influence for ………. you become 'green'?

    (Wait for their answers and then give them a separate sheet to fill in. See if they mention their children).

    Researcher: Is your child a source of influence in terms of the environment to change your lifestyle?

Please try to remember some examples from your own experience, reading or hearing.

In case they do not mention their children, ask them why this happened.

I saw that you did not mention your children when you were asked about the sources of influence to turn your lifestyles 'green'. Why do you think this happened?

9. What have you started doing to change your lifestyle to protect the environment, after your children's encouragement?

    How did everything start?

    Do you remember? It would be great to listen to your story.

Prompts:

Recycling.

Use energy saving bulbs.

Do something to save water (Interesting…what sort of things?)

Drive less.

Ride the bicycle more often.

Walk more.

Buy organic food.

Prefer local products (like what?)

Use very few plastic bags.

Composting.

Prefer products with little packaging.

Buy sometimes second-handed products.

Grow our own food plants.

Try to consume less (Do you mean only the necessary?)

Don't travel very often.

But when we travel they prefer train to plane.

Use the public means of transport more often than before.

Other *(please write here)*

10. Do you think you have been influenced by your children to turn yourselves 'greener'?

    (Please tick your answer from the list below)

    In what way?

    I am not at all influenced (1)

    Why?

    What factors did prevent your children from following your suggestions? (e.g. price, lack of equipment, limited free time)

    I am slightly influenced (2)

    I am somewhat influenced (3)

    I am very influenced (4)

    I am extremely influenced (5)

Family Relationships

Now, if you don't mind I will ask you some questions about your relationships with your children and how you spend your common time.

11. Do you spend time with your children?

    On weekdays… **Yes**   **No**

    On weekends… **Yes**   **No**

12. What do you usually do with your children?

Prompts:

do homework

play outdoors

play video games

play in the house

read books and comics

paint and draw

watch films at home

do 'DIY' activities

watch TV

garden

cook and bake

chat

walk

ride our bicycles

go to museums

go to the cinema

go on short day-trips

Other *(please write here)*

13. About what topics do you usually discuss with your children?
What he has been doing at school, we talk a lot about football.

Probes:

How often do you discuss with your children about the *ENVIRONMENT*?

Always (1)   Very often (2)   Sometimes (3)   Rarely (4)   Never (5)

What topics do you choose to discuss?

What are your motives?

Are you or your children that usually start the discussion about the environment?

What do you think make them start a discussion with you about the environment?

To show what they have learnt?

To show that they know a lot?

To learn more?

14. Do you feel **your children** know more than you about the environment?

    (Please circle your answer)

    Much less (1)   Somewhat less (2)   About the same (3)   Somewhat more (4)   Much more (5)

School's influence

15. In what ways do you think the school influences your children to live more 'greenly'?

16. Do you feel that your children's school affect your lifestyles indirectly to become more sustainable?   **Yes**   **No**

17. If **yes**, in what ways?

    Do you remember?

    Can you give me an example?

18. Are these ways effective?

    How did you feel?

    Did you find it funny or interesting?

This table is referring to question **8**

	1st member	2nd member	3rd member	4th member	5th member	6th member
TV (news, TV series, etc.)						
Magazines						
Newspapers						
Films						
Friends						
Books						
Community						
Public advertisements						
Church						
The ambition to make the world better						
The ambition to help future generations to live in a safe environment						
The feeling of respect towards the environment						
The feeling of care for my fellow-people						
The feeling of care for myself and where I live						
The obligation not to harm the environment because it is not only mine						
The desire for their children to live in a better world						

Project title: "Educating children to educate their families. Information, knowledge and experience diffusion within the family for pro-environmental behaviour and sustainable lifestyles".

Doctoral researcher: Georgios Zampas

Participants' names (First and surname):

Child's name:

Date:

Place:

Estimated time: 5-10 minutes

Demographic section

1. CODE RESPONDENTS' GENDER

   Male

   Female

1st member	2nd member	3rd member	4th member	5th member	6th member
Family relationships (e.g. father, mother)					

Role in the family in relation to child

Father	Mother	Brother	Sister	Grandfather	Grandmother
1	2	3	4	5	6
Uncle	Aunt	Cousin	Friend	Other	(specify)
7	8	9	10	11	

2. Please could you tell me your age last birthday?

   Numeric range (16-99)

   Refuse

1st member	2nd member	3rd member	4th member	5th member	6th member

3. Including yourself, how many people usually live with you? Please include all adults (aged 16 and over) and children (aged under 16).

4. And how many adults (aged 16 years and over) are there in the household in total including yourself?

5. And what age last birthday are the children in the household?

   Enter number (0-15)

1st child	2nd child	3rd child	4th child	5th child	6th child

6. Please could you describe the working status of the adult members (aged over 16) of this household by writing the appropriate number from the list 'working status' in the boxes below?

1st member	2nd member	3rd member	4th member	5th member	6th member

WORKING STATUS

Full-time paid work (30+ hours per week)	1
Part-time paid work (8-29 hours per week)	2
Part-time paid work (under 8 hours per week)	3
Retired	4
Still at school	5
In full time higher education	6
Unemployed	7
Not in paid employment (not seeking work)	8
Voluntary work	9
House wife/husband	10
Refused	11

7. Please could you tell me which of these best describes your home? (Please circle your answer)

Detached house	Semi-detached house	Terraced house	Bungalow	Flat (in a block of flats)	Flat (in a house)
1	2	3	4	5	6
Maisonette	Other	(specify)	Don't know	Refuse	
7	8		9	10	

8. Do you have a garden?

Yes-own garden

Yes-garden shared with others

No

Don't know

9. How many cars or vans are there in your household?

1	
2	
3 or more	
None	Ignore all questions about travelling by car

10. Approximately how many miles per year do you personally drive? (Please write the number of the list below in the boxes provided)

1st member	2nd member	3rd member	4th member	5th member	6th member

Less than 5000 miles	1
5,000-7,999 miles	2
8,000-10,999 miles	3
11,000-15,999 miles	4
16,000-20,000 miles	5
More than 20,000 miles	6
Don't know	7

11. What sort of fuel does your car run on? (Please circle)

Petrol	1
Diesel	2
LPG	3
Hybrid petrol/electric	4
Electric	5
Other	6
Don't know	7

12. Please can you tell me your overall HOUSEHOLD income from all sources in the last year? This includes earnings from employment or self-employment, income from benefits and pensions, and income from other sources such as interest and savings. (Please circle)

	Annual	Weekly	Monthly
1	Under£2,500	Under£50	Under£200
2	£2,500 -£4,999	£50 -£99	£200 -£399
3	£5,000 -£9,999	£100 -£199	£400 -£829
4	£10,000 -£14,999	£200 -£289	£830 -£1,249
5	£15,000 -£19,999	£290 -£389	£1,250 -£1,649
6	£20,000 -£24,999	£390 -£489	£1,650 -£2,099
7	£25,000 -£29,999	£490 -£579	£2,100 -£2,499
8	£30,000 -£34,999	£580 -£679	£2,500 -£2,899
9	£35,000 -£39,999	£680 -£769	£2,900 -£3,349
10	£40,000 -£44,999	£770 -£869	£3,350 -£3,749
11	£45,000 -£49,999	£870 -£969	£3,750 -£4,149
12	£50,000 £59,999	£970 -£1,149	£4,150 -£4,999
13	£60,000 -£74,999	£1,150 -£1,449	£5,000 -£6249
14	£75,000 -£99,999	£1,450 -£1,919	£6,250 -£8,299
15	£100,000 or more	£1,920 or more	£8,300 or more
16	Don't know (HIDDEN CODE)		
17	Refused (HIDDEN CODE)		

13. Do you have any qualification…?

1st member	2nd member	3rd member	4th member	5th member	6th member

From school college or university	1
Connected with work (e.g. on the job training, apprenticeship)	2
Form Government schemes	3
Don't know	4

No qualifications	5

14. From the list, please could you tell me the highest academic qualification that you have obtained?

1st member	2nd member	3rd member	4th member	5th member	6th member

Higher degree, e.g. MSc, MA, MBA, PGCE, PhD	1
First degree, e.g. BSc, BA, BEd, MA at first degree level	2
GCE 'A'-level / SCE Higher Grades (A-C)	3
GCSE grade A-C / GCE 'O'-level passes / CSE grade 1 / SCE O Grades (A-C) / SCE Standard Grades (1-3) / School Certificate / Matriculation	4
GCSE grade D-G / CSE grade 2-5 / SCE O Grades (D-E) / SCE Standard Grades (4-7) / SCOTVEC National Certificate Modules	5
Other academic qualifications (PLEASE DESCRIBE)	6
None of these	7
Refused	8

15. Please could you specify the area of your studies?

1st member	2nd member	3rd member	4th member	5th member	6th member

I would like to thank you for your time and help which are really vital for this research study.

I would also like to highlight that all the data and information provided by you will be kept safe and confidential. By no means will you and your child be identified as a result of any piece of work published by me.

Thank you.

Kind regards

Georgios Zampas

Doctoral researcher

University of Leeds

Questionnaire for children

Doctoral Researcher: Georgios Zampas

Institute: Sustainability Research Institute

Research Project Title: "Educating children to educate their families. Information, knowledge and experience diffusion within the family for pro-environmental behaviour and sustainable lifestyles"

Supervisors: Dr Lucie Middlemiss and Dr William Young

Case study: Westerton Primary School, Wakefield

Your First name:

Your Family name:

Age:

Date:

What do the smiley faces mean?

 Very happy or very satisfied

 Happy or satisfied

 Neutral (Neither happy nor unhappy)

 Unhappy or dissatisfied

 Very unhappy or very dissatisfied

Instructions how to fill in the questionnaire

In this questionnaire you will be asked about what you and your family usually do to protect the environment.

Topic 1: You and the area you ..

Please circle your answer to the questions.

1. How good or bad do you think of the environment near your home and school is?

Please circle your answer to the questions.

3. How much do you think you learn at school about protecting the environment?

4. In what ways does your school help you to make your family 'environmentally friendly'?

Please tell me the story or draw something that shows how your school helps you turn your family 'environmentally friendly'.

Topic 2: You and your family

Please circle your answer to the questions.

5. Does your family try to protect the environment?

If yes, **how?**

6. Do you think **you** have made your family become 'more environmentally friendly'?

(Please tick your answer from the list below)

Not at all   **A little**   **Quite a bit**   **Quite a lot**   **A lot**

7. How happy are you with your own effort to be 'environmentally friendly'?

(Please circle your answer in each case)

At school	At home

8. What do you think about your teachers wanting to turn your school to an 'environmentally friendly' school?

(Please tick some of the following adjectives and add more if you wish)

Cool   **Interesting**   **Exciting**   **Useful**   **Boring**

Fun   **Tiring**   **Relaxing**   Other *(please write here)*

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Please circle your answer to the questions.

9. What do you enjoy most doing with your parents and what did you do more often last week?

Below there are some things that I used to do with my parents when I was at your age. Use **green** *colour to circle what you enjoy most doing with your parents and* **blue** *colour to circle what you did more often with your parents last week. In case you enjoy or do other things not included below…please feel free to write them.*

We…

Please turn over →

do the homework watch TV play at home

cook chat go shopping

read books go to the cinema do D.I.Y. jobs

play outdoors play video games garden

go for walks do cycling go on day trips

13. What do your family members do to protect our planet? (not you)

    (*Anything you can remember*).

14. Overall, how environmentally friendly is the way your family lives?

    (*Circle one of the numbers below when 0 means 'not at all' and 5 means 'very environmentally friendly'*)

    0   **1**   **2**   **3**   **4**   **5**

END OF THE QUESTIONNAIRE

Thank you very much for answering this questionnaire.

You have already helped me understand how you can change the world and save the environment!!!

You have got power kids, let's discover it together!

Georgios

Appendix 2

Sample of the data analysis

Do you find it hard to change your habits used to be more environmentally friendly?

Yes: | | | | | | | (7)   36,8%

No: | | | | | | | | | | | | (12)   63,2%

Do you believe that any changes you make to help the environment need to fit in with your lifestyle?

Yes: | | | | | | | | | | | | (12)

No: | | | | | | | (7)

Do you often to –try to persuade people you know to be more environmentally friendly?

Yes: | | | | | | | | | | (9)   47,4%

No: | | | | | | | | | | | (10)   52,63%

Recycling ~~38~~ 87 ✓
Turning off the lights 58 ✓
Turn TV/electr. appliances off the 27 ✓
Save water 18 ✓
Save electricity/energy 16 ✓
Walk more 16 ✓
Turn off the tap 13 ✓
Gardening / Planting 12 ✓
Energy-saving bulbs 9 ✓
Don't litter / Cleaning 7 ✓
Start a discussion about the envir. 6 ✓
Brown bin 4 ✓
Replace bath with shower 4 ✓
Drive less 4 ✓
Use the bike 4 ✓
Reuse bags 3 ✓
Composting 2
Use the bus 1

Mum : ↑ ↑↑ ↑ ↑↑↑ ⑦
Dad : ↑ ↑↑↑ ④
The same : ↑↑↑ ↑↑ ↑ ↑ ⑦ ✓

What have you been doing to change your lifestyle after your children's suggestions?

Walk more : 1 2 3 4 5 6.

Recycle more : 1 2 3 4 5 6.

Use the brown bin : 1.
   more

Turn everything off : 1 2 3 4.

Use the bike : 1 2.

Buy only the food I need : 1.

Smaller portions : 1.

More energy-saving bulbs : 1.

Reuse more carrying bags : 1.
Reusing :

Save water : 1 2.

Walk ⑥
Recycle ⑥
Save electricity ⑤
Save water ② ⑦
Reuse things.   ⑥
Use the bicycle ②

usually
Who starts the discussion?
Both : 1 2 3 4 5 6 7 8 9 10 ⑪
Mother : 1 2
Children : 1 2 3 4 ⑤   4 & 4

How everything started.
Climate Cops : 1.
Eco-warriors : 1.

Things they learnt in the classroom (e.g. composting.) : 1

Leaflets and information material.
School : 1 2 3 4.
News & Documentaries : 1
Energy monitors : 1.
Walk to school competition.

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Is
~~Does~~ it worth doing things to help the environment even if others do not do the same?

Yes: ~~1 2~~ 3 ~~4~~ 5 ~~6 7 8~~ 9 ~~10 11 12~~ (13)

No: ~~1 2 3~~ 4

0
31:6
42.1
26.3
0

Describe your ~~a~~ current lifestyle:

42.1 % quite a few things

31.6% one or two things.

To do a bit more. 47%

To do a lot more.   31.6 %

One or two things. 6	I'd like to do a lot more 6.
Quite a few things. 8.	I'd like to do a bit more. 9.
In most things 5	I'm happy with what I do. 4

Family annual income and current lifestyle.

In most things I do: 5

All above the mean income ~~average.~~

- 2 35,000 - 39,999
- 1 50,000 - 59,999
- 1 75,000 - 99,999
- 1 Don't know.

Quite a few things: 8 : — 2 : 10,000 - 14,999

1 : 25,000 - 29,999

1 : 40,000 - 44,999.

1 : 50,000 - 59,999

1 : 60,000 - 74,999

1 : 75,000 - 99,999

1 : 100,000 or more

One or two things: 6 — ① 15,000 - 19,999

② . 35,000 - 39,999

③ : 60,000 - 74,999

④ : 75,000 - 99,999

⑤ : Refused

Δ/θ₁ for example : || 75,000 - 99,999 | in all categories.

60,000 - 74,999 . | 2 : one or two things
| 1 : quite a few.

| 1. one or two
50,000 - 59,999. | in most things.
| 1 : one or two
35,000 - 39,999 | 2 : in most things.

καì μετà parents' pro-environmental behaviours.

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In what ways does the school influence children's lifestyle.

Clubs :1. 2. 3
(Eco-warriors, gardening clubs).
Different lessons : 1. 2. 3
School trips : 1. 2. 3. 4.
Teaching : 1. 2. 3. 4. 5. 6. 7. 8
Competitions :1. 2.
How they do things at school. 1. 2. 3. 4. 5. 6.
(Recycling, energy saving.)
Homework :1. 2.
Visitors : 1. 2. 3.
With No influence. 2.
Assemblies :1

Yes	No
13.	6.
(68,4)%	(31,6%)

Activities
Clubs :1. 2. 3
Competitions: 1. 2. 3.
Homework :1. 2. 3. 4
Newsletters : 1. 2.
Discussions : 2.

Turning off: 5.

Turning lights off : 5, 5, 5, 5, 5, 1, 5, 4, 5,
5, 1, 5, 5

40. 50 56 57, 52

Do you make an effort to buy things from local retailers and suppliers?

Yes: | | | | | | | | | | (10)

No: | | | (3)

Potentially yes. 1.   (1)

Reasons: Support local community: 2-3-4 (businesses)   (4)

        Fresher: 2-3-4-5.   (5)

        Better quality: 2 /taste.   (2)

      ⌐ ⇒ The kids enjoy it.   (1)

        Air miles: 1

        Feel good.   (2)

Do you think it is only worth doing environmentally friendly things if they save you money?

Yes: 1

Mainly: 1

No: | | | | | | | | | | | | | | | | |

It's a motive: | | | | | | | |

$1^{st} = 75.000 - 99999$

$2^{nd} = 35.000 - 39999$

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