DEVELOPING ACTION STRATEGIES

FOR SUSTAINABLE LIVING AMONGST EMPLOYEES

AT A UK UNIVERSITY

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Abstract

The UN Decade of Education for Sustainable Development (2005 – 2014) has undoubtedly raised the discourse on the principles of Education for Sustainable Development (ESD) and provided a platform for healthy debates on infusing ESD in curricula and ways to overcome the barriers that exist to implementation programmes. Furthermore, the decade has also strengthened community based ESD activities and initiatives.

This research study addresses a gap in research within the field of ESD by exploring the routes to the design process of ESD programmes for employees at their workplace. The research also attempts to investigate the potential of infusing thinking skills in ESD training programmes for employees. Primary data was collected from a higher education institution in the UK through in-depth interviews and casual conversations with a set of employees. The findings suggest that a design process for employee programmes on ESD should be needs based and context specific. Whilst it is acknowledged that employees have an important role to play in driving the organisation's sustainability strategy forward, the study has found that not only are ESD training programmes for employees non-existent, but neither are employees effectively invited to participate and engage in shaping the sustainability strategy of the organisation.

The inclusion of thinking skills in ESD training programmes may assist employees feel adequately empowered to engage in needs based ESD training programmes relevant to their role at work and to their life beyond the workplace. The study highlights the role thinking skills have in cultivating a thinking culture within an organisation as part of its response to the challenges of sustainable development today. Yet the research findings suggest employees' awareness on the benefits of thinking skills training is low. The research has found that employees lack the confidence, competency, motivation and time to engage in an exercise whereby they are able to identify their own training needs for ESD programmes. On the other hand, however, there is clear evidence that employees feel consistent and genuine senior management commitment would be a key requirement if ESD training is

adopted as a route for the organisation to attain its sustainability targets. Finally, results from the study indicate that employees are of the opinion that bespoke ESD training for employees would most likely lead to behavioural change.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

Dedication

I dedicate this work to my two wonderful sons,

Andreas and Lucas

xx

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Introduction

1.1 Preamble

"a few thousand words from Rachel Carson and the world took a new direction"

Linda Lear cites an American editorial writer in her afterword to Carson's book, *Silent Spring* (1999: 258). Indeed the book played an influential role on the beginnings of the environmental movement in the 1960s. The significance of Carson's book to my research enquiry is that she put into question the status quo which, despite prompting great resistance and even attempts to silence her work, opened the gateway to a new era for behavioural change and social transformation. Half a century on and there is increasing evidence (McKeown & Hopkins, Cloud, Bourn in Chalkley, Haigh and Higgit, eds., 2009, and more recently in UNESCO's Roadmap for Implementing the Global Action Programme on ESD, 2014) of the need for more work to assist individuals in making changes in their decisions and actions for the benefit of the future of our planet and of future generations around the world. Just as the threats to our very existence due to the array of environmental issues we still face, such as climate change, poverty, inequalities in fair access to the earth's resources, so does Carson's stance of questioning the status quo remain valid today. Individuals therefore need to be equipped with the necessary skills (cognitive, practical, thinking, decision-making and problem-solving) to feel adequately confident and sufficiently motivated to engage in a more sustainable lifestyle.

1.2 The Starting Point of My Research Journey

In this section I will describe the beginnings of my research experience which culminated in the study being presented in this write up. My research study is personal to me – it is my story, my views, my beliefs and my values about the research enquiry. I chose to write in the first person singular because I am aware that I have brought my experiences into my study and wanted the write up to be a reflection and narration of the journey right from where I set off, which is being

described in the remaining sections of this chapter, to where it has led me (vide Chapter Six).

1.2.1 Setting The Context

I embarked on my research journey at the time when the UN Decade of Education for Sustainable Development 2005-2014 (UN DESD) commenced. On the global arena there were high expectations and great enthusiasm. Higgit (2009:3) in his introduction to the book *Education for Sustainable Development, Papers in Honour of the United Nations Decade of Education for Sustainable Development (2005-2014)* captures this enthusiasm when he says "the Decade for Education for Sustainable Development is widely held to offer the best opportunity to date to implement lasting and radical changes to educational programmes." Indeed, Education for Sustainable Development (ESD) practitioners and researchers around the globe greeted this decade with a mix of cautious excitement such as Cloud, in Chalkley, Haigh and Higgitt, (2009) and scepticism expressed by Jickling and Wals, (2008) and Sauve and Berryman in Chalkley, Haigh and Higgitt, (2009). It is against this background that I set out to carry out my research study in a field that encapsulated an eclectic mix of visions, beliefs and debates on the positionality of ESD within the educational sector. This is particularly so in relation to discussions on whether it was an extension of EE or a replacement of it. These debates put into question the very nature and definition of ESD resulting in a somewhat confusing picture especially to those who were new or outsiders to the discipline. Nonetheless, it was hoped that a lively debate on ESD would tease out the issues around it and bring fresh ideas into the field.

My thinking about the nature of ESD was influenced by the successful completion of a Master programme in Environmental Education (EE). I put into practice the skills and knowledge acquired from my Masters in the environmental education work largely within the waste and resource management sector on the Maltese Islands. I was also applying my skills in the environmental NGO field as a board member and volunteer for Friends of the Earth (Malta). I worked alongside the late Julian Manduca, chairperson of Friends of the Earth (Malta) who played a significant role in the development of my views on sustainability at grass roots level as an environmental activist which brought a shift in my focus from EE to ESD. A

discussion of my understanding and experiences of the differences and similarities between EE and ESD will be explained in Section 2.2.2 in the subsequent chapter. My EE role was extended to the University of Malta where I contributed to EE related study units at the Faculty of Education in its initial teacher training programmes. In the Spring of 2006, I took up a full time position at the Centre for Environmental Education and Research (CEER) at the University of Malta where I was able to bring together my practitioner experiences and apply them within the academic arena: "CEER's role is to promote environmental education and research in the Euro-Med region by seeking to catalyse change towards a sustainable society." http://www.um.edu.mt/ceer (accessed on 12/08/2015). In my role at CEER I was offered valuable guidance on ESD as an academic discipline by Prof. Paul Pace, Director of CEER.

With quite a broad base of experiences as an ESD practitioner, the time was ripe for me to reflect upon my role as a change agent and how I could bring about behavioural change to those I conducted education and training programmes with.

1.2.2 My Role as a Change Agent

It was my intention to explore how I would be able to use both my teaching experiences and my environmental activism in a manner that would actively bring about change in people's behaviour for their own well-being, in its broadest sense, and for the well-being of our planet. I was keen to find ways how best to assist sectors of society to become sufficiently engaged in making behavioural changes so that they can lead a more sustainable lifestyle that would be of benefit to our planet and to future generations. In my role as an ESD practitioner, I often carried out experimental work on infusing de Bono's thinking programmes into ESD training. My own de Bono thinking skills training had helped me to discover that if people are taught thinking skills, then, with practice, they would be able to apply them to all areas of their life both personal and professional. De Bono (1991:18) claims that "on a personal level, people have to do more thinking and take more decisions than ever before." whilst on a socio-political level "some people will undoubtedly do more thinking than others…but it is desirable that the rest should at least do enough thinking to decide for themselves whether the special thinkers make sense or not." De Bono (ibid) I frequently questioned whether certain environmental policies, decisions and actions, (no matter how big or small) would have been adopted and

taken differently if those involved had been given thinking skills training. This is because some of them were lacking in foresight, poor in finding viable alternatives and showed little regard to the needs of those affected and the context they were in. Worse still, very few questioned the status quo. I agree with de Bono (ibid) when he continues to argue that "In a complex society political decisions and pressures depend very much on individual thinking. If that thinking can see only narrow self-interest, or only an immediate future, then society becomes a power struggle for self-interest." When such statements are applied to the pressing issues of sustainable development the world is facing today, it immediately becomes abundantly clear to me as to why there is the need to infuse thinking skills in ESD. By doing so, individuals are not only equipped with the skills to lead a sustainable lifestyle but also with skills that provide them with the self-confidence needed to question the status quo in order to become actively engaged in decisions, actions and initiatives on sustainable development at their place of work, at home and within their community.

It was against this background that I embarked on my research study as a means to explore routes to needs based and context specific training for employees on sustainable development. I was desirous to find a design process for employee training that had the potential to be flexible enough to provide bespoke training to employees in a given organisation without causing undue disruption to the operations of the entity, yet be sufficiently adaptable that would make it possible for it to be implemented by different organisations and in different settings. Ultimately, I wanted to find ways how I could instigate change. The feedback I often receive from those attending my training sessions is that my personality and vibrancy transmit to my audience, motivation and energy to adopt a more sustainable lifestyle. Engaging with my audience in a manner that assists them in making behavioural changes is positive. However, I wanted to be able to involve people in forming part of the design process of the training they are given on ESD. This is because I was keen to make the training more relevant, interesting and inspirational to those attending the training.

By addressing ways of developing action strategies for sustainable living amongst employees, this research breaks new ground in ESD and fills a niche that few, if any, researchers have tackled before.

1.3 Reflections on My Research Path

In this section I will outline my own research role and how it relates to the research context chosen and employed. I will conclude the section with what I consider to be the implications of my research findings.

I have a keen interest in tapping into employees as a specific target group to address their ability and potential to make behavioural changes towards a sustainable lifestyle. Subsequently, in the proposal stages of my research I was able to identify the research aims. The broad purpose of my study is to explore ways to assist employees acquire cognitive and practical skills that would enable them to lead a sustainable lifestyle. Other research aims are:

➢ To explore routes to assist employees to lead a more sustainable lifestyle;
➢ To participate in dialogue with the research participants on their needs and expectations in relation to sustainability;
➢ To assist employees move from dialogue to action; and
➢ To improve my skills as a change agent and ESD practitioner.

1.3.1 My Research Role

I embarked on my research path by carrying out reflections on my research skills and how they could be applied to the research enquiry of my study. I also took into consideration the research experience I had gained during my Master course in Environmental Education at Nottingham Trent University, UK. As part of the Master course I had carried out research for my dissertation. This research project was of a qualitative nature with in-depth interviews and focus groups as the main data collection tools.

I recognised that I had very little experience and exposure to quantitative research. Neither was I inclined to feel comfortable working with large numbers and statistics. I wanted my research role to be one where I was immersed in the research context in order to get to grips with what was happening on the ground. Hence, the obvious choice was to work with a small number of research participants through qualitative research. This is because it best matched my own research preferences,

experiences and skills as well as the nature of the research enquiry I had selected. Furthermore, in order to keep myself abreast with software that is being used in research, particularly in qualitative research, I was keen to become familiar with some of these programmes as part of my own research development. In fact, I tried out Reworks software to catalogue my research bibliography and used NVivo for the coding and analysis elements of my study.

1.3.2 The Research Enquiry: ESD Programmes for Employees

My research enquiry is an exploratory exercise to design needs based training programmes for employees on ESD. I wanted to examine how ESD could be designed and introduced when it is situated within the professional lives of people – employees. Employees are hired for a specific job or to provide labour and who work in the service of someone else (the employer). It is interesting to note the emphasis on the use and application of the term 'control' in the definition of employees by the United States Internal Revenue Service, "under common-law rules, anyone who performs services for you is your employee *if you can control what will be done and how it will be done.* This is so even when you give the employee freedom of action. What matters is that you have the right to control the details of how the services are performed" (https://www.irs.gov/businesses/small-businesses-self-employed/employee-common-law-employee accessed on 12/05/2016). Attempting to reconcile concepts of ESD with this definition may be a challenge. For the purposes of this research study I have therefore preferred to adopt the more generic definition of employees as given by the online business dictionary, "an individual who works part-time or full-time under a contract of employment, whether oral or written, express or implied, and has recognized rights and duties. Also called worker" (http://www.businessdictionary.com/definition/employee.html accessed on 12/05/2016).

Within the realms of human resources and development, there exists a great deal of literature on employee training. For example, Noe (2013:11) depicts the employee training design process as comprising seven parts. These are: (a) Conducting needs assessment; (b) Ensuring employee readiness for training; (c) Creating a learning environment; (d) Ensuring transfer of learning; (e) Developing an evaluation plan; (e) Selecting training method; and (f) Monitoring and evaluating the programme. Furthermore, he states that "to fully benefit from employee knowledge requires a

management style that focuses on engaging employees…employees who are engaged in their work and committed to their companies give those companies a competitive advantage, including higher productivity, better customer service, and lower turnover." (ibid: 19). Thus, Noe outlines the essential elements that would assist organisations attain their business goals. Employee training that is the result of needs assessment and employee engagement, are two of these essential elements by Noe and ones that my research enquiry focuses on.

It is important to clarify that my research enquiry addresses ESD for a specific target group: employees in any given organisation. My selected research context where I collected the data for my study is a higher education institution in the UK, a sector which has recently witnessed an increase in ESD activity through infusing ESD into university curricula and greening campuses initiatives. Yet, I would like to point out that my study does not address these curricular initiatives at universities as I believe that there has been significant research in that field. Instead, the research enquiry of my study focuses exclusively on how employees can be trained in a manner that would help them become sensitised to sustainable development concepts and take action to lead a more sustainable lifestyle.

The research aims presented in section 1.3 above, and how they relate to my research enquiry and the research questions are discussed in detail in Chapter Three.

1.3.3 Significance of My Research Findings

The reasons for undertaking this research study were:

- To gain a better understanding of my practice as an ESD practitioner and my role as a change agent.
- To ensure that the work carried out with the selected set of employees would serve as a platform to contribute to organisational change.
- To make a contribution to the development of educational theory in ESD.

(McNiff and Whitehead, 2010: 242).

Throughout the entire course of my research study I found no documented evidence of work being undertaken to apply ESD principles in employee training within

organisations with the infusion of thinking skills. Research in this area is equally absent with no related literature available. On the other hand, particularly with the UN DESD 2005-2014, significant work is taking place across the higher education sector to infuse ESD in academic curricula and/or to run ESD related projects across the organisation. It is noted that research on the effectiveness of these initiatives suggests some encouraging results. Yet the emphasis here is on infusing ESD in higher education curricula and on how to encourage and support academics to include ESD concepts in their study units or modules across the courses and programmes offered at the higher education institution. In the UK, recent reports namely *Education for Sustainable Development: Guidance for UK Higher Education Providers* by the HEA/QAA (2014) and *Sustainability In Education 2015* by the EAUC/NUS/UCU/AoC/CDN (2015) are evidence of this growing movement towards a cross-curricular and interdisciplinary approach to ESD in higher education institutions.

As I have described in this chapter and will continue to emphasize throughout the rest of the chapters, it is intended that my research enquiry and the exploratory work I carry out with a set of employees will shed light onto a relatively untouched area within ESD. Employees are adults that come together daily to work towards the goals of the entity they work in. As adults and members of the community at large, they take decisions, make choices and adopt practices that have an impact on the environment. These decisions and actions could be on two levels: on a personal level (such as adopting energy efficient practices in their homes) or on a professional level (such as creating policies for waste reduction at work, or taking part in green initiatives at work). Thus, the findings and conclusions of my study will shed light on how organisations can set about institutional change through a process in the design of employee training that best fits the needs of the employees and the overall sustainability goals of the organisation.

1.3.4 The Research Write Up

"Remember that you are never 'ready' to write; writing is something you must make a conscious decision to do and then discipline yourself to follow through."

Bogdan and Biklen (1982) in Bell (2010:238).

The write up for my research is divided into six chapters. This, being the first one, sets the scene and context of my research enquiry. Chapter Two is made up of four main sections. Each of these forms an integral part of the topics under study throughout my investigation and presents a critique of the literature reviewed on each of the topics. These are: (i) Organisational Obligations and Responsibilities on Sustainability; (ii) Education for Sustainable Development (trends and applicability to organisations); (iii) Employee Education, Training and Development (including behavioural and institutional change); and (iv) The Teaching of Thinking Skills. The research paradigm, methodology and methods together with validity considerations are discussed in detail in Chapter Three where I have also provided reasons and justification for the selection of the methodologies employed in my research study Chapter Four sees the presentation of the findings, the planning, management and coding of my data through the use of software, the research design employed together with a hint of my preliminary findings. The process for the coding and analysis of data, and how this is linked to my research questions, is discussed in detail in Chapter Five. A discussion on the analysis and interpretation of my findings is also to be found in the fifth chapter which comes to an end with my recommendations and justification following my interpretation of my findings. Chapter Six sees the overall conclusions of my research study where I present a brief analysis of the appropriateness of my selected research paradigm and research questions to my research enquiry. The reflections on my own personal journey as a researcher, ESD practitioner and change agent throughout my research study are included in Chapter Six. The suggestions for further research together with some final thoughts about the most significant elements of my research findings, bring the final chapter to a close.

1.4 Conclusion

This piece of work has taken me and my family on a journey totally unbeknown to me at the proposal stage. For various reasons, including family, professional and research ones, I found myself taking the decision to relocate to the UK in mid-2009 with two school-age children in tow. As expected, settling my family in our new country of residence took precedence over my research study for a while. It also

meant that I was unable to tap into the many contacts I had in my home country where I would have been able to carry out my data collection at an organisation of my choice. I therefore made a slight amendment to my original research proposal in order to reflect this new scenario by broadening the organisation sector from the tourism industry (which would have been relevant if I had conducted my research in Malta due to Malta's heavy economic reliance on tourism) to a set of employees working in an organisation within any sector.

Nonetheless, despite the host of challenging events that life presented me with throughout my research journey, I am confident that I did not lose sight of the reasons that led me to embark on this journey. A journey which would help me bring about a contribution to ESD, and where I would enrich my own experience as an ESD practitioner and change agent in order to develop action strategies for sustainable living amongst employees.

Literature Review

2.1   Conceptual Background

"We are building on our teaching, learning and research strengths while making… [University X]… a more sustainable enterprise. Through this, we hope to minimise our environmental impact and create a healthy and inspiring place to work and learn."

http://www.UX.ac.uk/about-UX/sustainability/sustainability-strategy.aspx (2015)

University X (UX) has an active sustainability team within the estates department that promotes sustainability through various programmes for students and staff. The team makes effective use of social media Facebook and Twitter to communicate messages and is a good medium to attract student uptake and interest. Furthermore, these initiatives are supported by operational measures to reduce the organisation's environmental impact whilst improving its sustainability performance. In 2015, UX attained the highest ever ranking in the People and Planet University League Table when it placed 11th in the First Class category. http://peopleandplanet.org/university-league/2015/tables (accessed on 12/05/2016)

Herman B. "Dutch" Leonard writing in the foreword to Epstein's book, *Making Sustainability Work* (2008) refers to two forms of corporate social responsibility programmes: those that talk a lot but "don't actually do very much or generate much impact" and those that are engaged in "socially responsible activities being carried out on a material scale and significant results are actually being achieved". Like Leonard, it appears to me that there is "still far too much of the former and not nearly enough of the latter." (ibid) Indeed, Melhmann and Pometun (2013:84-85) express concern that 'greenwash' organisations "whose wish for behaviour change is driven not by a longing for the immensity of sustainability, but rather by a desire to call their organization or product 'green' or 'socially responsible'" can pose an educational problem in that they succeed in "convincing their stakeholders that they are following a sustainable path". I concur with Jackson (2012:18) when she argues that the "interdependency between the health of the planet and the health and prosperity of our human population has slowly become evident, so now the calls for attending to this fragile relationship are growing louder." It follows then to explore how education

can help organisations in becoming accountable for and achieving a return on their investment, not only financially but also in the social and environmental dimensions of their operations. The inception of assisting the private sector towards sustainable development through education and training dates back to the 1992 publication of Changing Course: A Global Business Perspective on Development and the Environment, by the Business Council for Sustainable Development (Schmidheiny, 1992).

Against this background, I embarked on research work as a way of exploring the level of contribution education for sustainable development training programmes for employees within an organisation could possibly offer to create a shift towards more corporations becoming socially and environmentally responsible, thus giving them a strong foothold in attaining their sustainable goals. Furthermore, I wanted to improve my role as a change agent by conducting research with a set of employees in order to learn about their views, needs and expectations in relation to making changes in their behaviour that would lead them to lead a more sustainable lifestyle.

A brief outline of the sustainable development factors that organisations are expected to take into account when drafting their corporate plans is given in the subsequent section. Whether these factors are regarded as constraints or challenges depends on the adaptability, flexibility and commitment of the organisation and its work force.

For the purposes of my research study I have chosen to use 'employee training' and 'employee education' interchangeably due to the fact that both terms were to be found in the literature reviewed and appeared to carry very similar, if not the same, meaning. I have interpreted 'employee training' and 'employee education' to suggest any form of learning that is provided to employees by their organisation. My research focus is on ESD for employees, so it follows that the concept of 'education' or 'training' provision carries the principal goal of offering a 'learning' environment for employees that would assist them to become sensitized towards sustainable development concepts. Key elements in the sensitization process of employees are employee engagement and behavioural change.

2.1.1 Accountability for Environmental Impact of Organisations

In recent decades there has been an expectation for organisations to consider the consequences of their actions for future generations. A practical approach to achieving this is by using one of the seven thinking tools in de Bono's CoRT thinking programmes: the 'Consequence and Sequel (C&S)'. De Bono (1991: 134) on talking about the C&S thinking tool in his book Teaching Thinking argues that most people do not consider consequences "unless their *attention is specifically drawn* to considering consequences". Therefore, it could be said that training and education in sustainable development could assist organisations to consider the impacts of their present lifestyle on future generations. On the other hand, the philosophical framework underpinning this expectation was clarified with the publication of the United Nations report 'Our Common Future' (1987). It defined sustainable development as "development that meets the needs of the present without compromising the ability for future generations to meet their own needs." (Ch. 2 available online at http://www.un-documents.net/our-common-future.pdf). The Brundtland Report, as it is more commonly known, set out principles for attaining sustainable development with one new approach being to bridge the gap between environment and economics. The principle exploring this concept 'Merging Environment and Economics in Decision Making' is particularly relevant to organisations and to this research study. Until the publication of the Brundtland Report, it was broadly perceived that environmental protection and economic growth were contradictory, if not opposing, forces. Yet, the report stressed the need for these two forces to be addressed in an integrated manner with beneficial outcomes to both factions. In 1987 it may have been difficult to see the financial savings of efficient energy use as part of a resource preservation programme. However, since then, decision makers in organisations and within the political arena have made progress at embracing the philosophy of the Brundtland Report and there are now several standardised methods for reporting data on the environmental management processes and environmental performances by companies and other organisations. These include:

- The ISO 14000 series of environmental certifications for environmental management.

- The Eco-Management and Audit Scheme (EMAS) for companies that are voluntarily managing their environmental performance.

- The Global Reporting Initiative (GRI) Index aimed at putting environmental, social and governance performance data of companies in the mainstream domain.

- The SAM Corporate Sustainability Index covering similar content as the GRI Index but is managed by the Sustainable Asset Management Group (SAM).

- The FTSE4GOOD Index for investors wanting to selectively invest in companies on the London Stock Exchange that have been screened for acceptable environmental performance.

(adapted from Jackson in Jackson et al., 2012:12-14)

Ensuring that such reporting tools are being used assists an organisation in gaining a better understanding of its sustainability performance whilst highlighting specific areas requiring further work. Moreover, they provide organisations with a means of gauging their compliance to environmental legislation. University X in the UK, where I carried out the interviews, casual conversations and some observations for the purposes of my research study, is a typical organisation that strives to excel in environmental management systems and is indeed performing well in this respect (http://UX.ac.uk/UX-staff/hot-topics/2015/august-2015/UX-recognised-for-green-credentials.aspx, 2015)

Performance based tools in industry such as the ISO 14000 series and the EU Ecolabel are based on environmental management principles. Still, improving the environmental performance of an organisation does not necessarily bring about an increase in the level of environmental literacy of its employees. Neither does it empower the employees to become proactive in working towards sustainable living. Environmental management schemes adopt a top-down approach where an organisation is given a list of criteria and goals which the workforce is expected to meet. There is, therefore, little or no room for employee empowerment or for social transformation. Melhmann and Pometun (2013:84) capture this underlying concept in my research study so eloquently that it merits a full citation of their view:

"Many businesses as well as public agencies and NGOs have ambitions and programs that go beyond 'business as usual'. They may start with some kind

of certification, for example ISO 14001….the initial focus is often technical or administrate investments and innovations. But sooner or later – assuming that the sustainability ambitions are genuine – it becomes apparent that the full potential of such investments can only be reached when the hearts, minds and hands of employees are engaged in adopting new behaviours and, finally, also in innovation: in the design of more sustainable ways to work."

I wanted, therefore, to address the concept of employee engagement and empowerment which is in fact reflected in my research questions, presented in section 3.1.3., through which I set out to seek the views of a set of employees. This was supported by the covert use of some of de Bono's thinking tools in the interview questions which enabled me to direct the employees' thinking to examine their needs as well as the needs of their organisation in relation to the design process for ESD training programmes for employees.

2.1.2 Regulations and Legal Obligations for Organisations

Organisations have had to respond to the sustainable development philosophical frameworks partially because "Government regulations and industry codes of conduct require that companies must increasingly address sustainability. Noncompliance with regulations was (and still is) costly..." (Epstein, 2008:21). With competitiveness and profit high on the agenda for organisations, it has become increasingly essential for them to include a sustainable development plan as part of their corporate plan. In many established economies, noncompliance measures may include one or a combination of: (i) penalties and fines; (ii) legal costs; (iii) productivity loss due to additional inspections; (iv) potential closure of operations; and (v) the impact on the corporate's reputation with its client base and civil society.

British organisations are bound by national environmental legislation. The latter reflects the transposition of environmental regulations and directives from the European Commission. Furthermore, British industry needs to respect the agreements attached to the various international legal protocols and conventions that Britain is a signatory to, or has ratified, such as the Kyoto Protocol on the reduction of greenhouse gases contributing to global warming. The European environmental policy (Article 174 of the Treaty on European Union and of the Treaty establishing the European Community, 2006 C321 E/9) provides the basis for a legal framework that is aimed at

"-   preserving, protecting and improving the quality of the environment,
-    protecting human health,
-    prudent and rational utilisation of natural resources,
-    promoting measures at international level to deal with regional or worldwide environmental problems."

One of the instruments within this general framework is a piece of specific legislation on sustainable development with a first draft document in May 2001 'A Sustainable Europe for a Better World: A European Union Strategy for Sustainable Development' (Commission proposal to the Gothenburg European Council) [COM(2001) 264 final – not published in the Official Journal]. In December 2005 the European Commission presented the review of the Sustainable Development Strategy – A platform for action [COM(2005) 658 final – not published in the Official Journal].

(http://europa.eu/legislation_summaries/environment/sustainable_development/l28117_en.htm, accessed on 05/03/2013)

Other topic specific regulations and schemes affecting business, industry and the public sector are in place such as those covering climate change and resource management. These include the European Union Emissions Trading Scheme which was introduced in 2005; and Climate Change Agreements incorporating a Climate Change Levy (tax) on energy use in industry, commerce and the public sector. The latter was introduced in England in April 2010 together with the Carbon Reduction Commitment that aims to cover carbon emissions not already covered by the Emissions Trading Scheme and the Climate Change Levy.

Environmental legislation may be regarded as a minefield for organisations and many of them have addressed the matter by outsourcing the task of meeting legal compliance requirements to specialist service providers or by engaging staff in house. Whilst legislation is an essential tool that assists countries on their journey towards meeting sustainable development goals, it is often implemented using a top-down approach in organisational structures with staff merely being instructed to change their workflows or work practices with very little environmental knowledge being passed on in the process. Through the EE and ESD work I carry out with employees, I am told that they view it as something they have to do because they have been instructed to do so by their respective managers. If that is the case, then whilst legislation is helping organisations improve their sustainable development

performance, little is being achieved in raising the environmental literacy of the employees or creating a true organisational change.

Conversely, compliance to environmental legislation poses potential financial challenges to organisations as many fear significant capital outlay or productivity losses. Therefore, it is vital to address the financial challenges (and opportunities) arising from working towards sustainable development within an organisation.

2.1.3 Maintaining Financial Sustainability

The 21st century is proving to be a challenging time indeed for businesses and organisations. As Robinson (in Stibbe, 2009: 133) rightly argues "They [businesses] will need to contend with changing markets and….experience changes in the costs and supply of energy and water and have to contend with potentially unstable supply chains caused by environmental, social and economic degradation in different parts of the world." Whilst it could easily be argued that "sustainability can also create financial value for the corporation through enhanced revenues and lower costs" (Epstein, 2008:22), those in industry may appear less confident and enthusiastic since they are fully aware of the fragile and volatile landscape that determines the profits and successes of a business.

Such an ever-changing landscape poses difficulties for businesses when conducting an analysis of risks, costs and benefits related to social and environmental investment decisions. Yet there are several costing systems available such as Activity-Based Costing, Life-Cycle Costing and Full Cost Accounting that enable organisations to identify the full range of corporate sustainability impact on their activities, processes, products and services.

One difficulty organisations encounter when running a costing exercise is valuing social and environmental impacts. However, an estimate of these impacts can help organisations internalise external costs. It is only when businesses improve their costing of social and environmental impacts that they can gain more insight into the complete (or real) costs of their services and/or products leading to better management of both their environmental and financial performance.

The conventional argument that environmental protection comes as an extra financial and productivity burden for companies has been challenged in recent years. Indeed,

some analysts argue that "improving a company's environmental performance can be associated with better economic performance for a variety of reasons" (Ambec and Lanoie in Jackson et al., 2012:31). These reasons include:

1. Environmental products may allow a firm to reach new customers;
2. Environmental innovation may reduce operational costs;
3. Adopting a sustainable development plan may stimulate a change towards increased performance in the firm;
4. Improved sustainability performance increases the likelihood of accessing financial capital and grants;
5. Better sustainability performance may improve a firm's access to human capital.

(adapted from Ambec and Lanoie in Jackson et al., 2012)

It is case studies of successful implementation of sustainability initiatives as documented in Jackson in Jackson et al., (2012: 263 – 403) where lessons can be learnt and offer confidence to other industries to shift their organisation towards sustainability.

2.1.4 Social Responsibility of Organisations

"I believe that we have come to a point now where this agenda of sustainability and corporate social responsibility is not only central to business strategy but will increasingly become a critical driver of business growth…how well and how quickly businesses respond to this agenda will determine which companies succeed and which will fail in the next few decades."

Patrick Cescau, group chief executive of Unilever (2007, Beyond Corporate Responsibility)

Businesses are becoming increasingly aware of their impact on the environment and on society leading them to take responsibility for managing sustainability. This is "sometimes referred to as the "triple bottom line" or "people, planet, and profits."" Jackson in Jackson et al., 2012:15.

Trends that provide a good impetus for businesses to shift their mindset towards the 'triple bottom line' include green consumerism, socially responsible investing and employees wishing to work for green companies. Whilst these trends do exist, they are still not strong enough to encourage some sectors within industry to make the

change. However, they are trends that are likely to become increasingly important in the future as the level of society's awareness and knowledge increases. By the time my research study unfolded, UNESCO (2014:31) reported the gains from an increase in awareness and activity made through education and training within organisations to strengthen their ability and capacity to respond to sustainable development. Indeed, UNESCO (ibid) states that "As of 2014, large businesses and multinational corporations have an increased awareness of sustainability, acquired through peer learning in non-formal settings (conferences, workshops, business association events etc.) and through more formal, executive education programmes. In many cases, education, training and awareness raising efforts are leading to the adoption of sustainability as a business strategy." This shift is encouraging and further strengthens the need to address how education and training are taking place in organisations and, if they are not yet taking place, what the barriers are.

My research study explores the design process for such ESD learning amongst employees in an attempt at revealing a model for a process of how ESD programmes are designed for employees. The study, therefore, contributes to the field of corporate social responsibility (CSR) because employees need to be given the skills required for the adoption of CSR principles. CSR has been defined as a company's delivery of long-term value in financial, social, environmental and ethical terms (UNGC, 2013:4). The European Commission states that CSR refers to "companies taking responsibility for their impact on society." Furthermore the EU Commission "believes that CSR is important for the sustainability, competitiveness, and innovation of EU enterprises and the EU economy. It brings benefits for risk management, cost savings, access to capital, customer relationships, and human resource management." http://ec.europa.eu/growth/industry/corporate-social-responsibility/ (accessed on 12/10/15). Therefore, one may argue that the key to creating a shift towards sustainability amongst organisations is to embark on education campaigns aimed at raising the awareness and knowledge of citizens and employees. Simply put, if citizens' and employees' environmental literacy increases, this will strengthen the green trends, thus providing industries with the confidence to change their own sustainability performance. Education and training play a central role in assisting organisations to work towards this understanding of sustainable development. Melhmann and Pometun (2013) refer to several cases from around the globe and cite

the founder and chairman of Interface, Ray Anderson, when he talks about the journey toward sustainability adopted by Interface:

> *"Costs are down, not up, dispelling a myth and exposing the false choice between the economy and the environment; products are the best they have ever been, because sustainability has provided an unexpected wellspring of innovation; people are galvanized around a shared higher purpose; the goodwill in the marketplace generated by our focus on sustainability far exceeds that which any amount of advertising or marketing expenditure could have generated."*
>
> (in Mehlmann and Pometun, 2013: 86)

The organisation, Interface, has a highly inspiring and informative section on its homepage on its sustainability journey called Mission Zero (http://www.interfaceglobal.com/Sustainability.aspx).

These examples bring to the fore the important role organisations play in sustainable development in its broadest sense, one that also encapsulates elements of CSR. It is evident that there is no 'one size fits all' model for organisations to follow on their journey towards sustainability. Similarly, ESD programmes for employees should reflect this diverse reality by modelling elements into the programme that are truly needs-based and relevant to the context within which they are being implemented.

After having explored the legal requirements, monitoring and reporting requirements and the ethical and financial considerations that industry and organisations are having to grapple with, it would be justified to enquire whether it would be beneficial for them to invest in the training and development of their own employees on matters relating to sustainable development and, if it is, what the best approach would be. This is in line with the agreement reached by countries in Chapter 30 of Agenda 21 to promote the education and training necessary to strengthen the role of business and industry (UN, 1992). I have also included a section where I attempt to present my views and position on the differences and similarities between EE and ESD and how they relate to this research study.

The following section will highlight key points in education for sustainable development with particular focus on research in the field.

2.2 Research in Education for Sustainable Development

The tradition of ESD stems from the World Summit in Rio in 1992, and developed further through the Agenda 21 document. UNESCO defines ESD as having a number of characteristics:

> "*ESD has essential characteristics that can be implemented in many culturally appropriate forms.*
> *Education for sustainable development:*
> - *is based on the principles and values that underlie sustainable development;*
> - *deals with the well-being of all four dimensions of sustainability – environment, society, culture and economy;*
> - *uses a variety of pedagogical techniques that promote participatory learning and higher-order thinking skills;*
> - *promotes lifelong learning;*
> - *is locally relevant and culturally appropriate;*
> - *is based on local needs, perceptions and conditions, but acknowledges that fulfilling local needs often has international effects and consequences;*
> - *engages formal, non-formal and informal education;*
> - *accommodates the evolving nature of the concept of sustainability;*
> - *addresses content, taking into account context, global issues and local priorities;*
> - *builds civil capacity for community-based decision-making, social tolerance, environmental stewardship, an adaptable workforce, and a good quality of life;*
> - *is interdisciplinary. No single discipline can claim ESD for itself; all disciplines can contribute to ESD.*
> *These essential characteristics of ESD can be implemented in myriad ways, so that ESD programmes reflect the unique environmental, social, cultural and economic conditions of each locality. Furthermore, ESD increases civil capacity by enhancing and improving society, through a combination of formal, non-formal and informal education.*"
>
> (http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development/education-for-sustainable-development/, accessed on 12/05/2016)

Sustainable development requires a change in the way people across the globe change the way they think and act. Education and by default, teacher education have an obligation to respond to this need by taking a lead role in bringing about empowerment and behavioural change. Sandell et al., (2005) provide concise arguments about the environmental approach and educational philosophy generally associated with ESD, and argue that "the conflict-based perspective of ESD, with ties to the whole spectrum of social development, places the democratic process in focus.

The opinions and values of all people are regarded as being equally relevant when determining the courses of action in environmental- and development issues" (ibid: 2005:164). Of particular relevance to this research study is their claim that the educational philosophy for ESD suggests that lessons have a "*reconstructivist* character" whereby "under the supervision of the teacher, students are themselves responsible for lesson plans and realisation" (ibid: 2005:165). If this same pedagogy is applied to ESD in employee training it would not be too dissimilar from the exploratory work carried out in this research study. This is because it attempts to infuse thinking skills in ESD employee training programmes as a means to employee empowerment and engagement within the process of an organisation's path towards sustainable development.

It is also pertinent to discuss the United Nations Decade of Education for Sustainable Development (UNDESD) in this research study primarily because my research has been carried out in the latter years of the decade. As expected, the UNDESD provoked much debate and discourse on the development of education for sustainable development, highlighting its successes, failings and controversy even about the fundamentals such as the term 'sustainable development'.

2.2.1 The United Nations Decade of Education for Sustainable Development

With The United Nations (UN) launching its Decade of Education for Sustainable Development (UNDESD) in 2005, it signalled a recognition that education at all levels is key for changes in social attitudes required to protect future generations. Fien (2006) states that the UNDESD "has been established to help build commitment and skills across the world's education system so that human society can develop an enhanced understanding of what it means to work for a sustainable future, a sense of responsibility for future generations, and a spirit of optimism and hope for a sustainable future." The three main pillars upon which education for sustainable development and the UN decade rest are environmental, social and economic development. However, as Higgitt (2009:1) rightly points out, "much of the dialogue about the initiative, including this book, has been largely from the environmental education sector." The apparent lack of presence in the education for sustainable development debate of the social and, more so, the economic sector gives rise to concern. No debate of such importance to the future welfare of the earth and its

people carries the value deemed necessary if two of the three major elements are not engaging sufficiently in the research and discourse. It carries the risk of not being comprehensive or, worse still, it would be imbalanced and skewed because valuable expertise from the social and economic sectors is missing.

The UNDESD could have served as an ideal platform for environmental educators, economic educators and social studies educators to come together and merge their expertise, thus enabling them to map out ideas for a truly more sustainable future. At the beginning of the UNDESD, Tilbury (2006:80) was optimistic and viewed the decade as "a platform for improving the profile and effectiveness of efforts in this area." She warned however that "it will depend on how meaningfully stakeholders engage with national efforts and on whether they reflect upon the experiences of ESD to date." Contrastingly, Jickling (2006:103) argues that if policy makers expect that work be "bent to the sustainable development agenda, then this Decade will be little more than an annoying distraction for many environmental educators." Fien (2006:67) resists this notion by referring to the International Implementation Scheme for the Decade and argues that "education for sustainable development is not a global imposition on countries and education systems but an invitation for them to explore the themes and issues, the objectives and the pedagogies that can make education locally relevant and culturally appropriate in the search for a better world for all." Indeed, as will be discussed in section 2.2.2 below, at the end of the UNDESD and following on from the publication of the report, *Shaping the Future We Want* (UNESCO, 2014), UNESCO drafted a roadmap for implementing the global action programme on ESD (2014) which largely deals with the points raised by Fien (2006:67). It is in such a spirit that this research study has been carried out: exploring ways of infusing education for sustainable development within organisations in a manner that is locally and culturally relevant and appropriate. The intention is to ensure that such educational programmes for employees have the facility to be adaptable and flexible. They need to be adaptable to various contexts and organisational cultures whilst simultaneously encapsulating a flexible element to be able to fit around the day to day operations of the organisation.

2.2.2 UNESCO Roadmap for Implementing the Global Action Programme on Education for Sustainable Development

Following from the UNDESD, UNESCO prepared a document commonly known as GAP (Global Action Programme, 2014) with a view to "achieve the vision put forward by the Decade of ESD." GAP has two overall objectives:

➢ To reorient education and learning enabling everyone to have the opportunity to acquire the knowledge, skills, values and attitudes that empower them to contribute to sustainable development.

➢ To strengthen education and learning in all agendas, programmes and activities that promote sustainable development.

My selected target group is employees because I had long identified the need to provide adults with the opportunity to attend learning programmes that would assist them to make informed choices on living a more sustainable lifestyle. Human resource management and development departments within organisations are usually responsible for staff training and development. They, therefore, provide a learning environment in the organisation. My intention is to explore how such a learning environment in an organisation can be strengthened (or created if it is not present) in such a manner for it to infuse ESD in all agendas, programmes and activities that promote sustainable development.

Furthermore, my research aims to meet GAP's (ibid: 15) Priority Action Areas listed below, namely:

➢ Area 1: Advancing policy – by mainstreaming ESD into education/training and sustainability policies within organisations.

➢ Area 2: Transforming learning and training environments – by infusing ESD into staff training and development.

➢ Area 3: Building capacities of educators and trainers – by improving my ESD practice and by becoming a more effective change agent.

➢ Area 5: Accelerating sustainable solutions at local level – by developing action strategies for sustainable living amongst employees to attain organisational change and social transformation.

2.2.3 My Position Within the Environmental Education and Education for Sustainable Development Sphere

The field of education for sustainable development has erroneously become known as being an extension of environmental education. Many key elements are common to both disciplines and the experiences gained in the environmental education field can be valuable to practitioners of education for sustainable development (McKeown and Hopkins in Higgitt, 2009:222-224). Yet, education for sustainable development goes beyond a change in people's behaviour towards the environment which characterises environmental education. It builds a case for the need of cultural changes in the interactions among people. In a way similar to that in which environmental educators grappled with defining environmental literacy, practitioners of education for sustainable development need to clarify what it is they mean when they refer to people being knowledgeable about sustainability and leading a sustainable lifestyle. Jickling (2006:101) picks on this point and states that "sustainable development (and sustainability) are notoriously bereft of coherent meaning". This has probably been regarded as one of the major weaknesses in education for sustainable development as it has created confusion in public perception and opinion of the discipline. As McKeown and Hopkins (ibid) rightly suggest, "existing elements of environmental literacy and economic literacy along with key aspects and attributes of social development could contribute to the definition and construction of sustainability-related literacy". Indeed, UNESCO's (2009: 28) updated version of the EE-ESD relationships relies on current practical experiences of countries which depend on "the historic role EE has played in a country (prominent or marginal) and the way EE itself is interpreted (broad or narrow)." Pavlova (2012:664) presents a comparison of the policy discourses underpinning EE and ESD. I agree with her interpretation that EE has a pedagogical focus on curriculum and learning whilst ESD's pedagogical focus is on the *provision* of education, curriculum and learning.

Whilst acknowledging that some may be confused by the fact that ESD concepts are by their very nature still unfolding and somewhat fluid, I do not share Jickling's stance that this is a weakness. On the contrary, their fluid nature is a strength that allows room for education and learning to present "richness in diversity in all sectors of the

natural, cultural and social environment [as] a basic component for a stable ecosystem and for safety and resilience of every community" (UNESCO, 2006:15). The UNESCO report, *Shaping the Future We Want* (UNESCO, 2014:28), reports that "there has been a clear increase in the understanding that ESD is a lifelong learning process that begins in early childhood and advances throughout primary and secondary education, technical and vocational skills development, higher education, ongoing workplace training and professional development, and public awareness…Many now agree, quality education for sustainable development reinforces peoples' sense of responsibility as global citizens and better prepares them for the world they will inherit." Such a declaration from UNESCO at the end of the UNDESD falls in line with the stance I have taken in my research study because my research context and focus (a) addresses employee training, which is a sector in ESD that is often missed; and (b) explores ways to assist employees become sufficiently empowered and engaged in a process whereby they are better equipped to lead a sustainable lifestyle. Pavlova (2012:667) believes that following the publication of UNESCO's Framework for the DESD International Implementation Scheme in 2006, the emphasis in EE and ESD differs "conceptually and philosophically" in that "EE focused on understanding local-global links and relating learning to the learner's community at an early age", whilst "ESD prioritizes embedding learning into locally and culturally appropriate contexts, emphasizing quality of life and capacity-building for communities, and addressing SD concepts that address socio-ecological structures." Nonetheless, despite these conceptual differences highlighted in UNESCO'S international policy documents (Tbilisi declaration, 1977) and (DESD, 2006), I concur with Pavlova when she states that these differences are not always visible and present in the realm of practice across the globe.

Initially my interest in the environment led me to become an EE practitioner within the formal education sector through my professional role. This was broadly due to the fact that I came from an education/teaching background and hence had an intrinsic interest in curriculum based education and learning. I therefore, supported this role by obtaining an MA in Environmental Education. Yet, through my heavy involvement as an environmental campaigner with Friends of the Earth (Malta), I was introduced to sustainable development projects across Europe. A natural personal progression

occurred where I began leaning towards elements of ESD which sat more comfortably with my value set.

Upon careful consideration of the EE principles listed in the Tbilisi Declaration (UNESCO-UNEP, 1997:2-3) and UNESCO's International Implementation Scheme for ESD (UNESCO, 2005:30-31), I acknowledge that both EE and ESD share the following pedagogical features:

- An emphasis on life-long learning and inclusion of formal and non-formal education.
- Interdisciplinarity.
- Inclusion of social, environmental and economic realms.
- The use of a variety of pedagogical techniques that promote participatory learning, first-hand learning and development of higher order thinking skills (referred to as problem solving and critical thinking in the Tbilisi declaration).

Figure 1 below captures the interconnectedness and overlap of EE and ESD concepts that I have adopted in my work on the design of ESD training programmes for employees with the input of thinking skills.
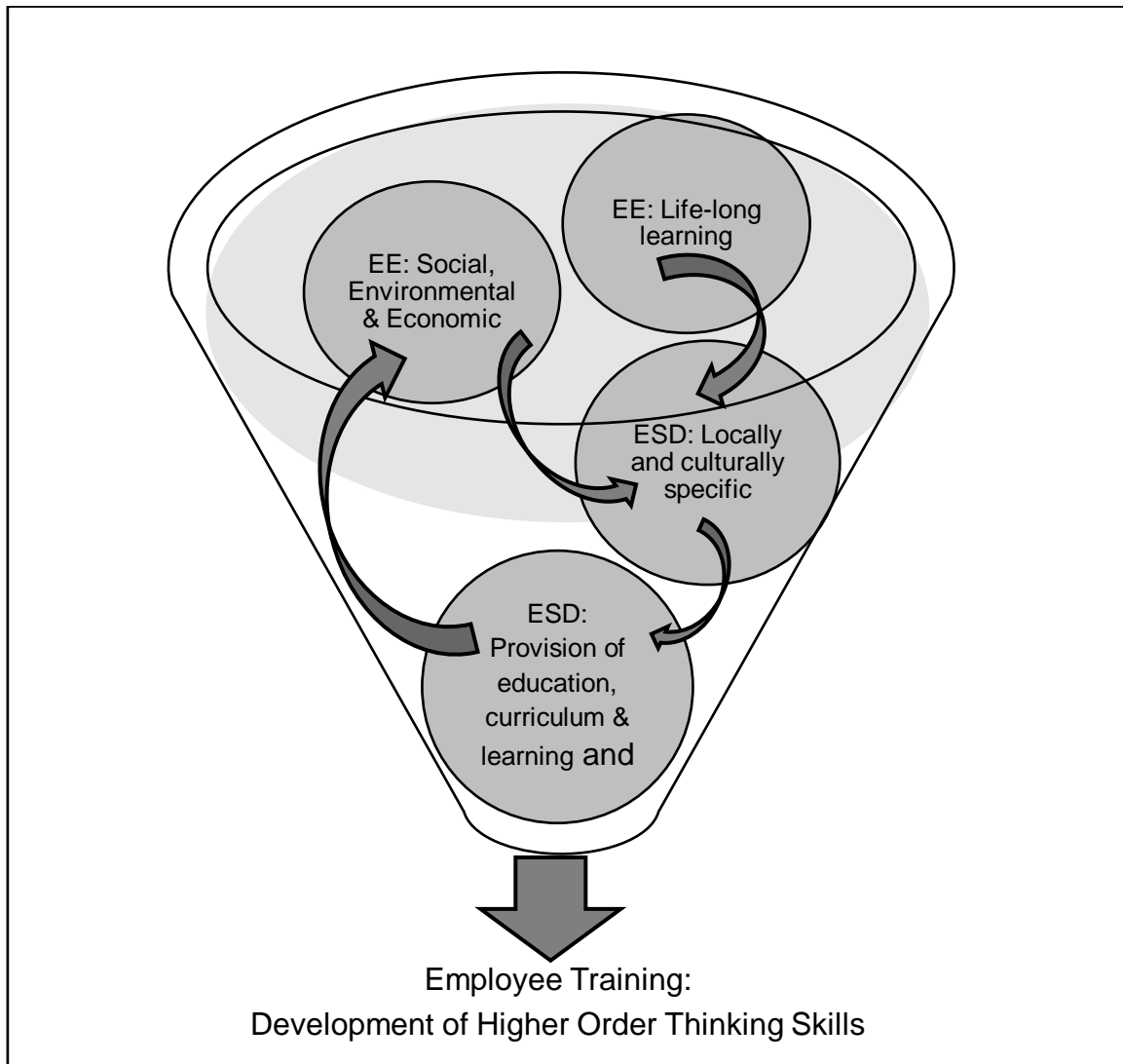
Figure 1: Pedagogical and Conceptual Elements of EE and ESD That Feed Into Employee Training

For the purposes of this research study, I relied on UNESCO's philosophical and conceptual definition of ESD. This is because the exploratory work this research sets out to do: finding ways to design needs based and context specific employee training programmes fits well within UNESCO's definition (2006) that ESD prioritises embedding learning into locally and culturally appropriate contexts whilst emphasising quality of life and capacity-building for communities. Furthermore, the experimental work on the application of de Bono's thinking skills both in the research design and in ESD programmes for employees brings my research study in line with the common pedagogical element found in EE and ESD, to promote participatory learning and the acquisition of higher order thinking skills.

2.2.4 Current Trends in Research on Education for Sustainable Development

Research in the field of education for sustainable development can be found within the spectrum of environmental education research and education for sustainability. Key words and phrases that emerge in such research include 'sustainability literacy', 'sustainability curriculum', 'environmental sustainability' and 'sustainable education'. The International Journal of Environment and Sustainable Development serves as a good showcase of research carried out in the field of sustainable development in its broadest scope. Indeed, in his editorial of the first issue of the journal, Leal Filho (2002:1) expresses this research need when he says that the journal aims at "fostering the cause of sustainable development by means of the publication of scholarly research, studies and projects taking place." Whilst there is general acceptance of the pillars for sustainable development, a review of current research does highlight the lack of coherence in the implementation of the concepts of sustainable development within the educational paradigm. Significant work has been carried out in the formal education sector at all levels of education. For example, London South Bank University (LSBU) have been running post-graduate courses from CPD to Masters level aimed at providing personal and professional development for anyone involved in communicating sustainability, whatever the context. The programme at LSBU has over 21 years' experience and is a shining example of ESD presence in the formal education sector. In the book, *Journeys around Education for Sustainability*, the editors, Parker and Wade, (2008:2) claim that the programme at LSBU together with its associated research activities and its alumni can offer an important contribution to the United Nations Decade of Education for Sustainable Development. However, Davis (2009:229) has found less than 5% of published articles on environmental education and early childhood education over a 12-year period intersected, leading her to conclude that "early childhood education researchers have not engaged with environmental/sustainability issues and environmental education researchers have not focused their attention on very young children and their educational settings." Literature reviewed as part of my research study indicates that, similarly, very little attention, if any, has been given to ESD for employees by researchers of education for sustainable development, employee training and human resources. Indeed as a student at LSBU, I would argue that my

research study addresses a gap in ESD because it focuses on design processes for infusing thinking skills into needs based and context specific training programmes for employees. This will be discussed in the subsequent section.

In the formal education setting, it is not difficult to share Sterling's (2003) sense of frustration and urgency for fundamental shifts to take place across the curriculum where in his words "we have lost our sense of authentic education, of caring, of community, of engagement, of real purpose". Sterling has often argued in support of the term 'Sustainable Education' because "the concept of 'sustainable education' is not just a simple 'add-on' of sustainability concepts to the curriculum, but a cultural shift in the way we see education and learning, based on a more ecological or relational view of the world" (ibid). Similarly, Sandell, Ohman and Ostman (2005:13-15) argue that "a teacher with the necessary competence to teach the subject of sustainable development has:

- knowledge of environmental problems and sustainable development,
- theoretical knowledge of teaching and learning,
- practical knowledge of teaching skills (experience)."

They make a strong case for the importance of the educator's competency as they believe that "the way we relate to the natural world and social development, as both individuals and members of society, can be directly linked to the way we are educated" (ibid). Whilst acknowledging that people's experiences of the environment and their education help to shape their behaviour and lifestyle in adult years, it is of concern that adults such as employees are not being addressed sufficiently, if at all, by being offered education and training in ESD. The teaching competencies Sandell, Ohman and Ostman (2005) identify could also be adapted and applied within an employee setting in industry or other work organisations. Therefore, lessons can be drawn from the way the formal education sector has responded to ESD. For example, there is significant research that has been conducted in higher education settings that ranges from higher education pedagogy to campus wide initiatives for organisational change. Yet, even within the formal higher education curricula there is a lack of consistency in the implementation of ESD across all courses for students. For example, Thomas and Nicita (2002) and Sherren (2006) claim that in Australian universities, ESD is often limited to disciplines that have an environmental component rather than across the entire range of disciplines. Indeed, "education for

sustainability continues to be accessible only by those most directly involved in environmentally focused education courses, such as environmental sciences.." (Thomas and Nicita, 2002:477). Such evidence suggests that, aside from academics and members of staff directly involved in an environmentally-related discipline, those responsible for designing course programmes and study modules in higher education lack the vision, belief and competency to see the need to integrate ESD within their study modules. A case study by Qian (2013) focused on the development of educational change for sustainability at the University of South Australia and the impact of such development "on an area that has long been resistant to the sustainability initiative – accounting". Qian (2013:90) concludes that "a well-designed change strategy needs to be built within an institutional environment where capability and cultural support can be developed to formalize and stabilize sustainability values during the change".

Hence current research on ESD in the formal education sector demonstrates that whilst there is broad agreement on ESD and its place within formal educational curricula, uptake of ESD implementation plans and initiatives is slow and sporadic at all levels of the formal education sector. Data for my research study was gathered from employees at University X, UK where a similar scenario is present with an inadequate presence of undergraduate courses that are infusing ESD principles (http://www.UX.ac.uk/about-UX/sustainability/teaching.aspx, 2015). Moore et al., 2005 and Thomas, 2004, in Qian (2013:90) attribute such a disparity to "the lack of effective mechanisms to engage with staff in non-environmental disciplines and to institutionalize change". Action research to explore the factors influencing academic staff engagement in ESD and their views and visions on ESD was carried out at the University of Southampton (Cebrian, Grace, and Humphris, 2015). The research study concludes by appealing for "the creation of professional development programmes for staff" and to "engage and empower academics in their journey to embed ESD in the curriculum" (ibid: 85).

The literature reviewed on research about ESD initiatives in formal education settings highlights the inconsistencies in implementation. From the studies referred to above, it can be concluded that the level of engagement and implementation of ESD in formal education needs institutional support together with professional development training. Ultimately, employees are being expected to infuse ESD in formal education.

Yet, if employees have not been given access to ESD training, it appears unlikely that they would feel empowered and committed to integrate ESD into their teaching. This reinforces the gap in research about finding ways to design ESD training programmes for employees. These could be employees working in a formal education institution, in business or in industry. The need is coherent across all organisations. Employees, regardless of what sector they work in, are increasingly being expected to integrate sustainable development practices in their day to day work as part of their organisation's way of meeting its sustainability targets, requirements and legal obligations. Yet, it is evident that there is a missing link here and I will be addressing it in the next section. I will provide a summary of research and discourse about how organisations have addressed the implementation of sustainable development and whether this was done through educational and pedagogical paradigms.

2.2.5 Education for Sustainable Development within Organisations

In the previous section I highlighted the fact that the literature reviewed suggests that, very little attention has been given by researchers and practitioners alike to ESD for employees, ESD in employee training and the role human resources can play in assisting employees make sustainable development related changes to their behaviour. A study by Eboli and Mancini (2012:339) on corporate education systems (CESs) in fostering the competencies necessary for companies to face the challenges of sustainability in their management processes concluded that "the importance of corporate education systems in the management process of sustainability becoming protagonists in developing competences for sustainability is high, due to its nature of creation of knowledge, skills and values". The European Centre for the Development of Vocational Training (Cedefop) is the European Union's reference centre for vocational education and training. In its publication, *Future Skill Needs for the Green Economy: Skill Needs for Green Jobs and Sustainable Development*, Szovics et al. (2011:92) identify the need for the development of not only technological expertise but also communication skills. They also suggest a revision of curriculum development for existing students and the re-training of professionals and blue collar workers. Furthermore, they suggest that education systems should promote multidisciplinary learning environments in close

collaboration with social partners in order to "take a broader view of how competences are defined and acquired" (ibid: 2011:93).

Relying exclusively on a top-down approach may not be the most effective approach. Whilst it may lead to a partial improvement in the environmental and sustainable performance of the organisation, any change in behaviour by employees for them to acquire the capacity to embrace and adopt meaningful sustainability values is dubious. Qian (2013:90) argues that "a strategic approach needs to embrace a top-down initiation for change and bottom-up capability building to develop institutional commitments that can sustain the change". This suggests a two-pronged approach that promotes senior management supported ESD for employees interwoven at its core.

Businesses and organisations operate on models that, at best, acknowledge the need to improve their environmental performance as part of their compliance to measures obliged by law. However, the spirit of sustainable development in the Brundtland report suggests that they ought to be more "flexible and responsive, more diverse and devolved organisational forms than those dominant at the present stage in industrial society" Roome & Oates, in Huckle & Sterling, (1996:169). Hence there is requirement for a learning framework that is (a) able to be sensitive to the ever changing needs of society and the environment and; (b) equipped with the skills to respond appropriately to these needs. Here is the challenge for education particularly that of business management and employee training and development. All members within an organisation should preferably share the vision for a sustainable future alongside working on improving environmental performance in the present. This is the shift required: from a focus purely on environmental performance to embedding sustainable development concepts throughout the entire operations of the organisation. ESD, that is needs based and context specific with elements of flexibility and adaptability, has a role to play in developing action strategies for sustainable living amongst the employees of an organisation.

Recent research conducted by Zibarras and Coan (2015) focussed on the human resources management (HRM) practices in UK organisations used to promote pro-environmental behaviour. Their study highlights a gap between research and practice regarding HRM's role in supporting the attainment of sustainability; their findings show that the use of HRM practices is not sufficient at present. Most relevant to my

research enquiry are the recommendations made by Zibarras and Coan (ibid: 2136) that "training should be made available to all employees, including management, which focuses on improving environmental knowledge, awareness and skills….[and] findings imply that organizations need to empower employees to take ownership of some of the environmentally related issues and/or initiatives themselves, for example, including employees in the design and implementation of any new environmental change initiative…".

2.3 Employee Education, Training and Development

Educating the mind without educating the heart is no education at all.

Aristotle

2.3.1 The Need for Employee Training

In November 2013, I attended a presentation organised by Charnwood Borough Council, UK on Carbon reduction. The presentation was delivered by Verco Advisory Services Limited, a sustainability and climate change consultancy firm. In the presentation, Verco (05/11/2013) claimed that 10% reduction of carbon dioxide emissions may be attained through 'Good Housekeeping' which identifies 'behaviour change and training' as one of the main actions. It is certain that organisations recognise the need for employee education, training and development as part of their attainment of sustainability targets and there is ample literature to support this. For example, Epstein (2008:52) identifies employee training as one of the internal actions to be taken by organisations when driving a sustainability strategy through an organisation. He claims that with regard to employee training there should be "both sustainability training and also training to improve employee capabilities, integration of sustainability throughout the organization, and effective monitoring and reporting of results". Epstein (ibid: 203) also argues that "training programs that sensitize employees to the social, environmental, and financial impact of various activities, processes and products" should be the key communication tool in informing employees of the importance of social and environmental performance of the organisation they work in.

2.3.2 Behavioural Change in an Organisation

Change is hard at first, messy in the middle and gorgeous at the end.
http://thespiritscience.net/ (accessed on 1/07/15)

It is amply clear that organisations have become more sensitive to social and environmental issues with a significant number of them striving to become better corporate citizens. Whether this stems from a genuine concern for society and environment, government regulations and legal obligations, stakeholder pressures or economic profit, or a combination of all these factors, the fact is that organisations must make significant changes if they want to manage their social, environmental and economic impacts. The changes may be implemented by means of putting together a sustainability plan and rolling out its implementation amongst the workforce through a series of new work flows and 'rules' for employees to adopt. This could bring about the desired outcomes and there are several case studies that showcase the successes of such an approach. For example, in 2005 General Electric pledged to increase investment in environmental technologies to $1.5 billion and sales of environmental technologies to $20 billion by 2010.

On the other hand, a study by Redmond and Walker (2009:126) makes a case for small business which concludes "Serious issues are raised for educators seeking to design and deliver environmental education for small businesses who are a disparate group in need of individualised and specific programs" (ibid: 126). A key point raised in this study that is of great significance to my research enquiry is that "Starting from where learners are at is not a new idea in education, however, this appears to have been forgotten by many who develop programs that are not contextually-specific and have not been developed in consultation with small businesses" (ibid). My research study addresses this specific gap: to explore routes to develop ESD training programmes for employees that are needs based and context specific. It would be a design process for ESD programmes that is sufficiently flexible and adaptable to be adopted by organisations from any sector. I would argue that this scenario cited by Redmond and Walker prevalent in small businesses would not be too dissimilar to that found in medium and large organisations. Indeed, Noe (2013:113) states that any effective training for employees involves the use of a training design process which starts with a needs assessment. Amongst reasons cited by Noe (ibid: 114) for conducting a needs assessment are (i) training programs may have the wrong

content, objectives, or methods; (ii) training will not deliver the expected learning, behaviour change, or financial results that the organisation expects; and (iii) money is spent on training that is unnecessary due to being unrelated to the organisation's corporate strategy. These are drivers that have led me to set out on my research study. I wanted to create a change by developing action strategies for sustainable living amongst employees through the exploration of needs based and context specific ESD within organisations. If ESD within a sector that is lacking both in activity implementation and in research is not introduced effectively and appropriately, there is the risk of ESD losing support from such an important sector. Organisations therefore need to have some reassurance that any ESD initiatives for employees will meet their expectations as a route to creating behavioural and organisational change for sustainable development.

2.4 Teaching Thinking

I cannot teach anybody anything. I can only make them think.

Socrates

In the subsequent sections I will present key elements of the teaching of thinking by using a few of de Bono's thinking tools. The reason for selecting de Bono's thinking programmes is because I have experience of being a certified de Bono trainer for two of his thinking programmes, namely *Six Thinking Hats* and *DATT – Direct Attention Thinking Tools* (which has now been rebranded as *POP – Power of Perception*). The last few decades have seen the introduction of the teaching of thinking in schools around the world. Thinking has long been acknowledged as a skill that facilitates learning. The improvement of thinking involves the cultivation of its caring, critical, creative and reflective dimensions. Lipman (2003:27) argues that students' knowledge is scanty and that they do not engage in any critical or imaginative reflective thinking about the knowledge they possess. He expresses concern that "students like these will not become the thoughtful citizens that robust democracies require, nor can they look forward to the productivity and self-respect that they themselves require as individuals" (ibid: 27).

My research study explores the effectiveness, if any, of infusing thinking skills into ESD programmes for employees. It also investigates how the integration of de Bono's thinking skills into the research methods employed would facilitate my data

collection and analysis. To this end, as will be discussed in subsequent chapters, I have utilised a few of de Bono's thinking tools from the DATT thinking programme in the design of the interview questions.

2.4.1 De Bono's Thinking Programmes

De Bono was born in Malta into a family who had had doctors for seven generations. He graduated from the University of Malta as a medical doctor and was awarded a Rhodes scholarship enabling him to gain a degree in psychology and physiology together with a D.Phil. in medicine at Oxford University, UK. It was at this time, in the 1960s, that he realised his studies could be applied to the mind and wrote his book *The Mechanism of the Mind*. The ability to think, de Bono claims, is the most important human skill, yet, he feels, it is often neglected. In an interview with the Guardian (April 2007), de Bono states that "Studies have shown that 90% of error in thinking is due to error in perception. If you change your perception, you can change your emotion and this can lead to new ideas. Logic will never change emotion or perception".

De Bono's Direct Attention Thinking Programme (DATT) comprises a set of ten thinking tools that assist in directing attention to the task or situation. The tools

- ➢ Give ten simple, focused strategies for sharpening perception and directing learners' thinking in a more comprehensive, effective and efficient way.
- ➢ Enable learners to have a viewpoint that is broad and inclusive. They improve learners' ability to consider the consequences before taking action.
- ➢ Create a framework for defining learner's personal and professional priorities and for making their thinking serve their values.

Adapted from http://www.edwdebono.com/debono/workdatt.htm

As an ESD practitioner with a keen interest to improve my role as a change agent, I have often queried the effectiveness of using DATT in ESD training programmes as a route to assisting people to sharpen their perception on environmental issues so that they would be able to see the situation more comprehensively.

2.4.2 Application of De Bono's Thinking Programmes in Employee Training and Development

It is not so very important for a person to learn facts. For that he does not really need a college. He can learn them from books. The value of an education in a liberal arts college is not the learning of many facts, but the training of the mind to think something that cannot be learned from textbooks.

Albert Einstein (1921)

This study includes some further experimental work on the implementation of de Bono thinking programmes both in the methodology component for the action research approach and in the design of education for sustainable development programmes. In my opinion, there is significant relevance between thinking and sustainable development because as Morris and Martin in Stibbe (2009) state "Our contention is that learners cannot deal with the wicked problems of sustainability without learning to think and act *systematically*". However, whilst there is ample discourse on systems thinking and education for sustainable development, there appears to be none about the specific implementation of the worldwide acclaimed de Bono thinking programmes in the field of education for sustainable development. It is for this reason, as well as following initial work on it in my MA dissertation, that I chose to explore the concept further through this study.

De Bono's thinking tools infused into ESD programmes have the potential of helping learners to consider the consequences of their decisions and actions that reflect their personal and professional priorities and of making their thinking serve their values. I am inspired by de Bono's (1991:33) choice of definition of thinking as "the deliberate exploration of experience for a purpose". He states that the "purpose may be understanding, decision-making, planning, problem-solving, judgement, action…". Such a definition of thinking clearly matches the skills needed by employees if they are to engage in shaping their training programmes on ESD as well as if they make behavioural changes towards sustainable lifestyle.

2.4.3 Thinking Tools as A Means to Employee Engagement and Empowerment

The world as we have created it is a process of our thinking. It cannot be changed without changing our thinking.

Albert Einstein

The use of de Bono's thinking tools from the DATT programme equip employees with the thinking skills to assist them feel more confident in taking ownership of their training needs. Thinking tools help learners become empowered into taking charge of their future by changing their perception of situations, exploring possibilities and solutions, considering the consequences and seeking other people's viewpoints. De Bono claims that "Creative thinking….is a skill that can be practised and nurtured…It takes time to learn. You don't have to be intelligent, but I think you have to be open to possibilities and willing to explore" (The Guardian, 2007).

Smythe (2007:30) argues that engagement is a practical capability which leaders at every level of an organisation can develop and utilise as a means to bring the best out of employees for their own benefit, for that of their colleagues and for the organisation as a whole. "I see employee engagement as being about the role and influence people have been given in everyday decision making and in broader organisation change and strategy" (ibid: 30). In my study I explore how equipping employees with thinking skills could assist in this process of employee engagement as part of two processes I address in my research enquiry: (i) to assist employees become sufficiently confident and empowered to participate in the identification of their training needs in order to design training programmes on ESD that are relevant; and (ii) to provide employees with the skills to become engaged in a process for behavioural change and organisational change through ESD programmes.

2.5 Conclusion

I have embarked on my study to investigate how action strategies for employees can be developed for them to lead a more sustainable lifestyle. My study contributes to the gap highlighted by UNESCO (2014:31) that "further research on understanding changes in social norms and individual behaviours is required" because I intended to improve my role as a change agent and ESD practitioner through the exploratory work carried out in my research study. In this chapter I have presented debates on the topics relevant to my intellectual puzzle to demonstrate the gap in research on design processes of ESD programmes for employees. I have also highlighted the need for organisations to take on this responsibility to carry out employee training on sustainable development in their endeavours to meet financial and legal obligations,

to improve their reputation and to work together with social partners and the community for the attainment of a better environment. In the final section of this chapter I have given a brief overview of the background of Edward de Bono and of one of his thinking programmes since I have utilised his work by exploring its effectiveness in ESD employee programmes as well as in the research methodology I have employed.

Chapter Three is a detailed discussion of the theoretical context of my research study and the reasons for my selection of the particular research paradigm and research methods.

Research Methodology and Research Methods

3.1 Introduction

I was aware that as a researcher, I was faced with considerable limitations of both time and resources. Over time, in a similar way to McIntyre's description of the participatory action research model, where "initial research questions lead to the emergence of new questions and new avenues of enquiry" (McIntyre, 2008:50), my research evolved due to arising challenges and opportunities coupled with a clearer understanding of my field of enquiry and what I hoped to achieve from it. I therefore needed to exercise constraint and highlight some demarcations in order to meet the time frames available to me. The process undertaken to select the research design and research methods that feed into the epistemological and ontological position of my research study will be presented and discussed in the following sections within this chapter. Furthermore, the process reflects the information obtained from initial dialogues and observations at the selected research context.

3.1.1 Rationale

From my experience of working in the field of education for sustainable development (ESD) I am of the view that employees within organisations are frequently not considered as a specific target group in ESD campaigns. This research work aims to provide a valid contribution to ESD in organisations by exploring routes to a needs-based training programme for employees that would bring about (i) behavioural change; (ii) improved sustainability performance, and (iii) financial savings across the organisation. The literature reviewed and discussed in the previous chapter highlights the fact that significant research has been carried out on education for sustainable development programmes in the formal education sector by Fien (1995, 1996, 2002), Huckle and Sterling (1996), Haigh (2009), and Blewitt and Cullingford, (2004) amongst others. Research and data in the non-formal and informal education settings is somewhat lacking. UNESCO's report *Shaping the Future We Want* (2014:150) highlights this lack when it states that "the limited availability of more specific sources of sustainability-related private sector education and training data is

a real challenge to the assessment of progress made during the DESD". It cites Finland making an interesting observation about the difficulty in estimating progress on training and capacity-building because it is a sector that "has much more private sector actors compared to the formal education system and there is no adequate data available" (GME Q Finland, MS, in UNESCO, 2014:150).

Furthermore, not only is research in the informal and non-formal educational sector lacking, but also documented ESD programmes are not taking place sufficiently in these settings. For example, in the recently published report by EAUC, *Sustainability in Education* (2015) it is reported that "a quarter of staff indicated there was no teaching or learning on sustainability among staff or students" (http://www.cloudsustainability.com/sustainability-in-education-2015). It was therefore refreshing when my research pointed me to the work carried out by Global Action Plan (GAP) International which is "an international network at the forefront of Education for Sustainable Development and related programs for sustainable behaviour change, including 'carbon neutral' households, communities and work places" (http://www.globalactionplan.com/who-we-are, accessed on 30/09/15). Their mission is to empower people to live and work increasingly sustainably at school, at home and at work. GAP operates a programme that is specifically designed for employees, namely, Employee Engagement Program which is run by their GAP-accredited consultants. I contacted one of the senior partners, Mr. Chris Large from GAP (UK) which has done extensive work with employees. He informed me that GAP (UK) has been running behavioural change work with employees for the past ten years. A review of their publications available online indicates that GAP (UK) uses behavioural change concepts to address sustainability issues. Its vision is "A world where people see that it's possible to help the environment through taking small, everyday actions – and act accordingly". GAP (UK) market the concepts of employee engagement for sustainability by highlighting (i) the financial savings for the workplace from lower energy and water consumption; (ii) the reduction of waste; (iii) the increase in efficiency and improved productivity. In other words, GAP (UK) attracts organisations to implement sustainable development programmes that include employee engagement by speaking the language of the business community. Whilst I agree that such a strategy is effective in capturing the attention of organisations, I have noted the absence of ESD concepts in the terminology used by

GAP (UK). Yet, a careful examination of its projects such as Tesco Scotland, O2 Smart at Work, O2 Flexible Working, and British Gas-Transform (http://www.globalactionplan.org.uk/Pages/Category/at-work, accessed on 12/10/15) indicates that holistically the different, stand-alone projects would encapsulate most of the ESD concepts that include well-being, environmental protection, community action and better use of resources.

This seemingly low activity in ESD for employees may in part be one of the reasons why my attempt to carry out a literature review on research about ESD within organisations for the purposes of this research study proved to be a challenge. Existing employee programmes such as those by GAP are void of the term ESD which may beg the question of whether this is done purposefully or from lack of knowledge and understanding of the concepts of ESD. Non-formal and informal education settings serve as an ideal platform to target key players in the attainment of sustainable development. These include adults at their place of work where they are the decision makers and problem solvers of the present generation. It is these decisions and actions that will impact the quality of life of present and future generations together with the sustainability of our planet. In view of the fact that employees are present in an organised structure at their place of work, providing ESD programmes in a bottom-up approach would not pose insurmountable difficulties. Nonetheless, the main challenge in the provision of employee training would be a logistical one: managing employees' time for training in a manner that would not disrupt the work output of the organisation. This research study aims at exploring the barriers that might exist which would prevent an organisation from engaging with their work force in offering training programmes in ESD. Moreover, it is hoped that, based on the findings from the research process, an exploratory model for the manner in which employee empowerment might effectively take place through the design and implementation of ESD programmes can be presented. This model would include sufficient room for flexibility and adaptability so that it would serve as a framework for other organisations to use with their own employees in their endeavours to assist in attaining a sustainable lifestyle for all. The focus will therefore be on the *process* and not the *product* since as rightly put in the UNESCO Concept statement (2004) as cited by Higgitt (2009):

> *"There is no universal model of education for sustainable development. While there will be overall agreement on the concept, there will be nuanced differences according to local contexts, priorities and approaches....[these] must therefore be locally defined to meet the local environmental, social and economic conditions in culturally appropriate ways."*

In line with guiding principles and debates on ESD as discussed in the Literature Review Chapter, I am of the opinion that the above central characteristic of ESD is, paradoxically, both its strength and its weakness. The fact that no set formula has been put forward in any prescriptive manner has left many practitioners in the field, as well as the general public, grappling with the 'how' element of ESD. Yet, the absence of a pre-set universal formula is what enables practitioners to become intrinsically involved with their respective target groups thus making ESD specifically relevant to them. Indeed, UNESCO's mid-Decade review (UNESCO, 2009a) documents the diversity of approaches to planning and implementing education programmes that also reflect the different understandings of human-nature and environment-development relationships. This study aims to put forward an example of the 'how' element, or rather the process required by practitioners to design ESD training programmes that are relevant to different audiences. The emphasis in the process will therefore need to be its adaptability and flexibility. It will need to be attractive and user-friendly for practitioners to believe that they can adopt the model and make it their own (or rather make it that of their target groups). It is hoped that this research project will assist in meeting one of the main challenges that was identified by the United Kingdom Government's Sustainable Development Education Panel, namely, "lack of clarity as to what is meant by education for sustainable development related to how we communicate its key messages and principles".

The purpose of research is to enhance knowledge. Therefore, in so doing I concur with King and Horrocks (2010:15) that it is necessary to have a clear rationale for the research – "what is it that we want to know, what is the purpose of the research and how this might be achieved?" Hence at the outset of my research study, while writing the proposal, I considered carefully the "appropriate connections between the nature of the research, overall strategy and how we will go about collecting and analysing data" (ibid). Griffiths (1998:106) refers to this exploration of connections as the 'what' which consist of the epistemological reflections and the 'how' which considers the methodologies and techniques for data collection. Yet Griffiths (1998:106) also

makes a valid argument about the practical constraints that undoubtedly have an impact on "what is researched and how". Griffiths cites time available, resources allocated and level of support from colleagues and supervisors as constraints that influence the manner in which a research study is carried out. I gave these points some serious consideration at the outset of my study. My full time academic employment and family commitments afforded me only limited time available for my research and so it was essential to keep this in mind. On the other hand, I was in the fortunate position of having already had valuable experience in supervising undergraduate students' research. Furthermore, I had financial assistance from my employer through scholarship funds to cover my research studies. It was also encouraging to have the full support of my colleagues and my Director at the Centre for Environmental Education and Research at the University of Malta. Overall, therefore I had a good degree of support but I also had challenging family issues to deal with and I was mindful of their impact on my research study.

Having spent considerable time reflecting on the epistemological and ontological connections, and bearing in mind the practical limitations that would impact my research study, I was then able to determine my overall research aims which will be presented in the next section.

3.1.2 Research Aims

The aims I had identified at the proposal stage of my research study guided my epistemological and ontological positions in the same way Mason (1997:15) refers to when she mentions what she terms 'intellectual puzzles' that "will contain different sets of ontological and epistemological assumptions and prescriptions, and will suggest distinctive types of social explanation". In view of this, I embarked upon an exploration of how the overall aims of my proposed research study would be ontologically meaningful and epistemologically explainable by considering literature on social and educational research, namely, Bryman (2004), Cohen, Manion & Morrison (2007), Darlington and Scott (2002), and Grbich (2013) amongst others. This reflective thinking process led to the formulation of my research aims whereby I brought together my initial interest in the topic under study and a desire to provide possible social explanations for it which in turn helped me focus my thoughts on drawing up the research questions.

The overall purpose of this research study is to explore ways to assist employees (research participants) acquire cognitive and practical skills that will help them improve their quality of life in relation to sustainable development at their place of work. The other aims that will provide an input into how the overall purpose can be achieved are:

- To participate in dialogue with the research participants that would bring to the fore their expectations and needs regarding their participation in a course in ESD.
- To assist research participants move from dialogue to action by devising a formula for a course design that would serve as the basis for the process involved in the development of employee training on ESD.
- To improve my skills as a change agent through the experience of engaging in an interactive and dialogical research as highlighted in the Literature Review of my study.

After being quite certain of the research topic that would present the general area I wanted to explore, it was time to set the research questions that would define what aspect of that research topic I wished to investigate. A discussion on the research questions is presented in the following section.

3.1.3 Research Questions

I am in agreement with Mason (1997:15) when she argues that research questions within the qualitative research realm differ from hypotheses since qualitative research entails "formulating questions to be explored and developed in the research process, rather than hypotheses to be tested by or against empirical research". In the early stages of my research I was conscious that the development of my own understanding of the area I chose to explore, coupled with the impact that the literature reviewed would have on my views of the topic, would most likely reshape and redirect my research focus and research process to some degree.

"Going from a topic of interest to a well-defined question, however, is no easy task" O'Leary (2005:32). At the proposal stage, while framing the questions for my research study, I relied on recommendations made by Marshall and Rossman (1995:26) that "research questions should be general enough to permit exploration

but focused enough to delimit the study". I found that my research questions would indeed need to be reshaped as I progressed with developing my research in a similar way to how O'Leary (2005:36) presents it through the image of 'cycles of research question development' and to what King and Horrocks (2010:27) term the "shifting research question". Nonetheless, Bell (2010:33) argues that in qualitative research "it may be permissible to make modifications to objectives or changes to the questions as the study proceeds, but that does not obviate the necessity of identifying exactly what you plan to do at the outset".

Bryman (2004:31) considers research questions as "crucial" because they guide:

- the literature review
- decisions on research design
- decisions about data collection
- the data analysis and write up

as well as preventing the researcher from straying towards unnecessary directions (adapted from Bryman, 2004). Similarly, O'Leary (2005:28) argues "it is the research question that gives focus, sets boundaries, and provides direction".

The questions I was able to formulate in the early stages of my research study were:

Key Questions:
- How can the use of de Bono thinking skills lead to employee participation during the course design in a manner that facilitates their own training programme?
- How can the application of thinking skills to the design of employee programmes in Education for Sustainable Development bring about employee empowerment in order to induce positive behavioural changes necessary in achieving an improved quality of life?
- What form should employee programmes in Education for Sustainable Development take if they are to assist employees lead a sustainable lifestyle?

Subsidiary Questions:
- To what extent do existing forms of Education for Sustainable Development give sufficient focus to people's thinking processes and how do these benefit employees?

- What skills (cognitive, practical, thinking, decision-making, problem-solving) are required by employees if they are to become more confident in implementing action strategies that will help them adopt a sustainable lifestyle?

- In what ways will this investigation improve my role as a change agent in order to promote people-centred sustainable development?

Section 4.3.1 in the following chapter will present reasons for the slight changes made to the research questions listed above. It is only when the research questions are framed that methods for data collection can be selected. A discussion on the data collection methods chosen for my research study can be found in section 3.7 below.

3.2 Research Inquiry

My personal journey that led to this research study is described in Chapter One. However, once I embarked on the journey I soon became mindful that research is "a process that demands planning, forethought, commitment, and persistence" (O'Leary, 2005:15). The reflections, reading and planning required to frame the rationale, aims and questions for my research as discussed in the sections above brought home to me the realisation of the deep commitment and stamina needed to navigate my way on this journey. O'Leary (ibid) rightly points out that its purpose is not only to produce knowledge but also to serve as a learning journey "about both research itself and your ability to manage intricacies and complexity".

In the subsequent sections I will be presenting a resume of my thoughts and work on my research study's (i) suitability; (ii) feasibility; (iii) ethical considerations; (iv) validity; and (v) reliability. They are all terms and concepts which are subject to much discussion in the qualitative research realm and there is no single definition or view of them since they are mostly dependent on the researcher and the research itself. Nonetheless, since I have carried out a qualitative study within the educational action research paradigm, I have given these concepts much thought and will attempt to summarise my reflections below.

3.2.1 Suitability

There is much debate on the positionality and validity of qualitative research and action research inquiry. The relationship of the researcher to the setting, from being an outsider to insider largely affects the view taken by the researcher as "some qualitative researchers prefer a more interventionist, emancipatory approach" (Herr & Anderson, 2005:51). Key questions I needed to address at the onset of my research inquiry included those that would lead me to consider whether the purpose of my research was clearly identified and to establish a link between my research purpose and my chosen strategy. These questions helped me to determine that my chosen strategy would produce findings that can answer my research questions. A discussion on how I tackled these questions and of the decisions reached on my selected strategy is presented in the following sections within this chapter.

3.2.2 Feasibility

I needed to ensure that I had allocated sufficient time for the design of my research and collection of data. This led to the difficult question of considering whether it was possible to gain access to necessary data, mainly the research participants, for my planned interviews and casual conversations. During the laborious process of trying to find an organisation that would welcome the researcher to conduct research and data collection with a selection of its employees, it became abundantly clear that, particularly within the current economic climate, most organisations were reluctant to release employees and make them available for participation in this research study unless they perceived the research as providing economic value to their organisation. In early 2013 I was referred to the Institute of Energy and Sustainable Development (IESD) at UX in the UK by the employment agency, Change Agents, through which I had been offered a temporary post at Melton Borough Council. Following a number of initial meetings with various members of staff at the IESD, I was offered the possibility of using UX as my research context. Once this was established, I had a meeting with the Environmental and Sustainability Officer at UX in order to discuss the selection process of the research participants. I explained that it would be necessary for my study to have as broad a spectrum as possible with employees working within a variety of departments and levels. On this basis, the Environmental and Sustainability Officer suggested introducing my research study to the existing

Environmental Champions Network at UX and asking for members of staff within their respective teams/departments whether they would volunteer to participate in the study. The initial email was sent in April 2013 and it received a somewhat encouraging response from some members of staff at UX. In view of this, it was agreed that I would have a sufficient number of participants at UX enabling me to proceed with my data collection phase. This required the approval of the research ethics committee at London South Bank and, consequently, I embarked on the preparation of the required documents related to the ethical approval process.

3.2.3 Ethics

In the past, it was possible to carry out research without having to go through the formal channels for obtaining consent (Bell, 2010:44). This has changed drastically and the British Educational Research Association has published a set of ethical guidelines on research in 1992, subsequently updated in 2011 (BERA 2011). Nowadays, it is a research requirement to seek clearance from the research ethics committee in order to ensure that the study conforms to ethical guidelines. Denscombe (2010: 329) goes as far as to argue that "the need to get approval from such ethics committees reinforces the point that a concern with ethics is not an option – it is a fundamental feature of all good research". In line with his argument, as a research student at London South Bank University, I sought and obtained ethical clearance from the research ethics committee at the university in the last quarter of 2013. Whilst it has been reported (Reason and Bradbury, 2001:295) that some researchers feel the ethics committee hinders researchers from their work and they question its legal rights and "assumed power" (ibid), following my experience of seeking ethical approval, I fully agree with Darlington and Scott (2002:22-3) when they state that research ethics committees have "an important gatekeeping role … a duty to consider all possible sources of harm and satisfy themselves that the researcher has thought through all the relevant issues prior to granting permission to proceed". Admittedly, it did result in a delay to my research plan and, by the time I submitted the request and all related documents and received the final approval, the organisation where I was to conduct my data collection, (i.e. UX) had entered into a busy period. Hence my data collection had to be postponed by a couple of months

and I was only able to start in February 2014. Notwithstanding the delay, I am in full agreement with Wellington (2015: 113) who emphasises that "the *main criterion* for educational research is that it should be ethical" by highlighting how ethics ought to be paramount throughout the research design, methods employed, data analysis, presentation and findings. This matches my own approach to the research study because, regardless of whether London South Bank University requested approval from their research ethics committee or not, I would have still endeavoured to conduct my research in a way that conforms to my own ethical principles and code of practice (Bell, 2010: 57) especially in the light of the fact that I am already a practitioner through my role at the Centre for Environmental Education and Research at the University of Malta. Finally, as my discussions later on in this chapter will reveal that my research sits closely to educational action research, I found the arguments Costello makes (2011:46) on how "concerns about and criticisms of action research have tended to focus on … ethical concerns associated with undertaking action research projects" of great relevance to my study. A more detailed discussion on action research is presented in Section 3.5 of this chapter.

3.2.3.1 Informed Consent

The British Sociological Association's Statement of Ethical Practice notes state that researchers should "strive to protect the rights of those they study, their interests, sensitivities and privacy" (BSA 2002:2). In practical terms it lists amongst others three key elements that I bore in mind when carrying out my research especially during the data collection stage. I therefore: (i) sought "freely given informed consent of those studied"; (ii) ensured that my participants were "made aware of their right to refuse participation whenever and for whatever reason they wish"; and (iii) helped participants "understand how far they will be afforded anonymity and confidentiality" and that they "should be able to reject the use of data-gathering devices such as tape recorders". (ibid: 3) The British Educational Research Association's ethical guidelines place similar emphasis on the researcher's responsibility to seek informed consent and permission from the right people (BERA, 2011). Hence, in late October 2013, following the busy period of the start of the new academic year at UX, and, upon obtaining ethical clearance from the research ethics committee at London South Bank University, a further email with the participation information letter (Appendix 1)

and consent form (Appendix 2) was sent to the Environmental and Sustainability Officer at UX who circulated it amongst the Environmental Champions. Unfortunately, it was only at the end of January 2014 that an initial list of UX employees accepting to be interviewed was made available to me. Conscious of the delay in my data collection phase, I therefore immediately embarked on setting interview appointments on campus at UX at a time/date convenient to the interviewees. The latter were sent a copy of the participation information letter and consent form in order for them to have the opportunity to ask questions about the interviewing process and data collection forming part of my research study. All prospective interviewees but one accepted to serve as research participants, signed the consent form and did not object to the interview being audio recorded. The one that dropped out gave work commitments as a reason for withdrawing interest in being a research participant.

3.2.4 Validity

The terms 'validity' and 'reliability' (dealt with in section 3.2.5 below) cause a degree of confusion because they are difficult to define and understand (Wellington, 2015:41). In simplistic terms, validity is about checking how well a chosen research method is able to generate the data required to answer the research questions of a study. This means that, as a qualitative researcher, it was essential for me to give due consideration to which data collection methods to select. In view of this, as will be seen in section 3.7 below, I found the question-methods matrix by Wellington (2015) an indispensable step in the research process.

Nonetheless, there is a historical background about the extent that qualitative researchers can indeed verify their research as valid in the 'positivist' approach. It was the work of Kirk and Miller (1986), Bryman and Burgess (1994) Seale et al. (1999) and more recently, Silverman (2006) that provided a fresher approach to this controversy. Indeed, Denscombe (2010:298) states "such qualitative researchers have adopted a more pragmatic or 'subtle' realist perspective" by drawing on insights of post-scientific concepts of social research". Costello (2011: 55) justifiably cites work by Robson (2002) when highlighting whether validity is applicable in flexible design research that aims to gather qualitative data. When discussing issues of quality in qualitative research, Rolfe (2006:305) refers to work by Sandelowski (1993) when he rightly points out that "validity is achieved through consensus on each

individual study rather than by the blanket application of predetermined criteria". Indeed, I concur with Wellington (2015:41) when he boldly claims that in educational research "we can never be 100 per cent sure of validity. We can only lay some sort of claim that our test or method is valid". Educational research, as is the case with most qualitative research, relies heavily on the researcher's perception of reality, as well as on the research participants' perception of reality, at that point when the study is taking place.

In my study I was fully aware that, at every juncture, I took decisions based on my own views, beliefs, interests, experiences and ethics. These shape who I am as a researcher and make me unique in the way I conducted my research study. I carried this uniqueness into my research context during the data collection phase. Therefore, it would not be possible to replicate my study for verification or validation purposes because of the researcher/research context/time specific element that places my study as a stand-alone perception and view of the reality as it took place and as it was perceived by those involved at the time the research study took place. Yet, I did endeavour to select research methods that would capture data as accurately and robustly as possible. In my opinion, the use of the de Bono thinking tools in the wording of the interview questions as well as the application of NVivo data analysis software helped to ascertain that the research findings and interpretation of the data about the topic under investigation as reported in my study carry cohesion between the conceptual frameworks and research questions (O'Leary, 2005:61). In summary, I hold similar views with Costello (2011:55), that, to claim a piece of qualitative research has validity is, as Robson (2002:170) rightly suggests, is to refer to it as "being accurate, or correct, or true" whilst focussing on the credibility or trustworthiness of the research.

3.2.5 Reliability

Le Compte and Preissle (1984:332) in Wellington (2015:43) claim that no social researcher can achieve total reliability. Reliability expects that a researcher using the same methods can obtain the same results as another study carried out previously. In my opinion, social research poses significant challenges in this regard since no social situation can be replicated wholly, to be able to declare confidently that the research is an exact same as another simply because the same research methods

have been employed. My own positionality as a researcher, as well as that of my supervisory team, bears significance in the authenticity of my study. Additionally, the social setting at the research context where I carried out my interviews, casual conversations and observations is unique to that setting at that given time. It would be over zealous to simply assume that the application of the same methodology in another social setting would produce the same results.

Nonetheless, with regards to the data collection tools I selected for the study, I did my utmost to design the interview questions in a manner that would carry as much reliability as possible when the interview was conducted with the different research participants since "the indicator of reliability gives an assurance that the tools you are using will generate 'consistent' findings" (O'Leary, 2005:60). I found that applying some of de Bono's thinking tools in the wording of the interview questions decreased the risk for reliability issues and provided the interviewees with a clear and consistent focus when replying to the interview questions. Furthermore, the thinking tools I used such as those in questions 2 (a) and (b), 4 (a), (b), (c) and (d), and 5 (a),(b), and (d) facilitated the process of recording and interpreting the responses given by the different interviewees. Yet, I was aware that those questions asking for the research participants' opinions or views "may produce different answers for a whole range of reasons. The respondent may have just seen a television programme which affected opinions or may have had some experience which angered or pleased and so affected the response" (Bell, 2010:119).

3.3 Research Strategy

Denscombe (2010:3-4) provides a clear definition of strategies in social research by identifying three key components that he deems essential. These are (i) an overview of the entire research project – research paradigm; (ii) a carefully constructed plan of action – research design; and (iii) a specific goal – a research problem. Subsequently, I was also guided by Mason (1996:19) regarding how the research strategy or methodology would help me "not only to decide upon appropriate methods and data sources" but would also enable me to develop an understanding of the methodological implications of my choices and to carefully reflect upon the links between my research questions and my chosen data collection tools. Wellington

(2015:108) also provides a question-methods matrix to help researchers take these decisions in the planning stages.

Since my study aims to explore ESD programmes within an organisation, I concluded that its purpose matches what Marshall and Rossman (1995:41) refer to as an "exploratory [one] to investigate little understood phenomena". I would say that my research study sits between grounded theory (as depicted by Glaser and Strauss, 1967) and action research (influenced by McNiff and Whitehead, 2010, amongst others). I refer to grounded theory because, researching ESD programmes for employees by carrying out data collection with a small number of employees within one research setting, I was exploring a new topic and providing new insights (Denscombe, 2010: 6) and my analysis would be "very context-specific, applying only in a relatively small number of situations" (Hayes, 2000:184, in Bell, 2010:17). Yet, I also refer to action research because as an ESD practitioner, I attempted to "solve a practical problem and produce guidelines for best practice" (Denscombe, 2010:6) by acting as a change agent. Indeed, my intention to serve as a change agent was identified from the very early stages of my study, it is in fact listed in my research aims, and forms one of the subsidiary research questions. Once I was clear of the purpose of my research and the strategy most suited for it, I was able to consider the data collection tools that match the purpose and strategy of my research study. These will be explained in Section 3.7 of this chapter.

3.3.1 Quantitative and Qualitative Research

There is much debate about the academic tension between the positive sciences and social sciences. Denzin and Lincoln (1998:7) give a balanced and fresh discussion on this as well as a comprehensive historical overview of qualitative research and inquiry. More recently, a concise distinction between quantitative and qualitative research is given by Denscombe (2010:325) when he says that quantitative data measures "phenomena so that they can be transformed into numbers" whilst qualitative data transforms "information from observations, reports and recordings into data in the form of written words or visual images". Denzin and Lincoln (1998:8) cite qualitative research as possessing a "value-laden nature of inquiry" whilst quantitative research claims to be "within a value-free framework." Bryman (2004:20), on the other hand, gives clear and succinct differences based on epistemological and

ontological orientations. Quantitative research within the positivist framework raised questions pertaining to claims and assumptions made from data generated under the guise of unbiased and objective views (Kirby and McKenna, 1989: 61).

My research interest stemmed from my belief that employees and organisations would benefit from ESD programmes and I was thus keen to explore the views of employees. This aligns me to being a qualitative researcher because I was "more concerned to understand individuals' perceptions of the world" (Bell, 2010:5). Interestingly, Bell (ibid) reminds us of an important observation Punch (2005:28) makes, that qualitative research typically starts off with general questions and methods that gradually become more focussed as the study evolves. In view of this, I was aware that, whilst at the proposal stage I did my utmost to set my research questions as carefully and meaningfully as possible, there would be the possibility that these would need to be revisited and amended after I had carried out a review of the literature and become more acquainted with my research context. Nonetheless, the thought-provoking points raised by O'Leary (2005:99), when he argued that, qualitative and quantitative terms are not descriptors of a researcher, a methodology or method, did help me to approach my research with a more open mind in order to avoid being led to the "unreflexive adoption of assumptions and protocols… [that would] send a researcher down a narrow and predetermined methodological path". Indeed, I do support O'Leary's suggestion that both qualitative and quantitative can be used to describe data and their mode of analysis in that my study contains qualitative data represented in words and analysed using thematic exploration through the use of themes and codes. This will be discussed in more detail in Chapter Four. I believe my study follows some of the principles highlighted by Mason (1996:5, 6) that qualitative research should be: "conducted as *an ethical practice*"; "systematically and rigorously conducted"; "strategically conducted, yet flexible and contextual"; it should "involve critical self-scrutiny by the researchers, or active *reflexivity*"; and "should produce social *explanations to intellectual puzzles*". Moreover, I agree with King and Horrocks (2010:7) that what I attempted to do through my study was to "capture aspects of the social world but this is done in numerical ways that do not rely on numbers as the unit of analysis". In their paper on qualitative research groups, Kerstin Stieber Roger and Gayle Halas (*The Qualitative Report* Volume 17 Number 1 January 2012 120-130) not only give an insightful

account of the historical framework of qualitative research, but also present food for thought on emerging trends among the new generation of young academics. I share their views that "progress of qualitative research as well as the environments that shape research, are dramatically different than in earlier generations". They cite the utilization of data management programmes such as NVivo which I have used in my research study as one example of how the qualitative research scenario is changing. The emergence of mixed methods has also given new dimensions and possibilities to qualitative researchers. This will be briefly discussed in the following section.

3.3.2 Mixed Methods

O'Leary (2005:100) proposes "opening up possibilities" through the use of mixed methods for data analysis and even suggests ways of combining software programmes such as SPSS (typically used for statistical data) and NU*DIST (typically used for qualitative data analysis). I share Denzin and Lincoln's (1998:9) sentiment when they suggest that "postpositivism relies on multiple methods as a way of capturing as much of reality as possible". This may well be an effective use of the mixed methods approach. On the other hand, I was particularly intrigued by Bryman's reflections on multi-strategy research (2004:463) when he attributes the increasing interest in a mixed methods approach to the fact that in recent years there appears to be a shift towards viewing research methods as techniques for data collection and analysis rather than as being deep seated in the epistemological and ontological positions held by the researcher. Whilst this may well be true for members of the new generation of researchers, I personally view my own values, interests and personality as having had a determining impact on my selection of research methodology. In view of my interest in people, their reality, their opinions and their needs regarding the topic under investigation in my study, coupled by the fact that I sit more comfortably with communicating in words rather than numbers, adopting qualitative research and ruling out quantitative research seemed to be the natural choice for my study.

3.4 Research Paradigm: The Conceptual Framework

The research methodology adopted by practitioners reflects the research paradigm they hold (Fien and Hillcoat, 1996). A paradigm is a general perspective with an array of underlying assumptions that are deeply embedded in the social make-up of the researcher. As a result of these assumptions, paradigms "determine whether research assists in the maintenance *of* the *status quo* in society or helps to transform the dominant social paradigm" (ibid).

3.4.1 Epistemological Considerations

Epistemology is derived from the Greek word 'episteme' meaning knowledge. Hence, "An epistemological issue concerns the question of what is (or should be) regarded as acceptable knowledge in a discipline" (Bryman, 2004: 11) and is concerned with "the very bases of knowledge – its nature and forms, how it can be acquired, and how communicated to other human beings" (Cohen, Manion, and Morrison, 2010:7). Wellington (2015: 341) defines epistemology as "the study of the nature and validity of human knowledge". I concur with Griffiths (1998:35) that the theory of knowledge is a difficult subject because it is self-referring and it is generally taken for granted that people know what they know. However, when "they are challenged about *how* they know it, or even *whether* they really know it, it is hard for them to find the right terms" (ibid). In line with the anti-positivism position of phenomenological philosophy, in this study I wanted to explore how the employees made sense of the world around them. This is because I agree with Bryman's (2004:14) argument that interpretivism is about the social reality as experienced by human beings, their actions and interactions with others. I feel sufficiently confident that my study is in line with Wellington's (2015:342) explanation of the interpretative approach when he says that it "can be applied to the study of social actions/activity". Contrary to objects in the physical sciences, human beings are not passive to research. They react to situations of being researchers or research participants and they "construct meanings for the events in which they participate… [which] has a significant impact on what can be known about human beings (epistemology)" (Griffiths, 1998:36). Bryman (ibid) also reiterates that it is the role of the social researcher to "gain access to people's 'common-sense thinking'" and interpret their actions and the social world from their standpoint. Therefore, the starting point of

interpretivist research is individuals, in an attempt to understand their interpretations of the world around them (Cohen, Manion, and Morrison, 2010:22).

I believe that the research approach and process adopted in this study reflect the values held by the researcher and is thus largely within the interpretivist framework. Hence, I agree with the critique offered by the interpretivist research paradigm when it claims that "positivist research is not value-free as its proponents maintain" (Fien and Hillcoat, 1996). The interpretivist paradigm explains that human behaviour is situation specific and results from research cannot be used to predict similar human behaviour at a different time and situation. As a social researcher I was fully aware that my own personal set of values and beliefs can "intrude at any or all of a number of points in the process of social research: choice of research area; formulation of research question; choice of method; formulation of research design and data collection techniques..." (Bryman, 2004). In fact my own experiences of working at grass root level with environmental NGOs as well as my involvement in de Bono thinking programmes bore a strong influence on the choice of my proposed research both in the content and in the methodology to be adopted. Schutz (1962:5) in King and Horrocks (2010:11) explains that "All facts are from the outset facts selected from a universal context by the activities of our mind. They are, therefore, always interpreted facts." Grbich (2013: 6) makes similar arguments by saying that "scientists are inherently biased by their education and life experiences and that their observations are value-laden and fallible, making errors likely". The interpretivist epistemological grounding of my study assisted me to clarify and determine its ontological components which are discussed in the following section.

3.4.2 Ontological Considerations

Ontology requires a thinking process whereby a researcher examines "the very essence of things in the social world" (Mason, 1996:11). The research study best fits within the ontological position of constructionism as it "asserts that social phenomena and their meanings are continually being accomplished by social factors....in constant state of revision" (Bryman, 2004:16-18). Social constructionist grounded theory provides a framework for researchers to be reflexive about how "their prior interpretative frames, biographies and interests, as well as the research context, their

relationship with research participants, concrete field experiences, and modes of generating and recording empirical materials" (Charmaz, 2005) influence their analysis. Similarly, as a researcher carrying out this study with employees at UX, my ontological position is not too distant from Grbich's explanation (2013: 7) of constructionism (constructivism) when she states that the researcher's knowledge is a constructed understanding and interpretation based on life experiences and subjectivity. My research study stems from my own understanding of the selected area of interest as well as my experiences in the field of ESD as a practitioner. Therefore, it is clear that all the decisions I have taken in the design and implementation of my research are heavily influenced by who I am and what I am. Of relevance to my own research, Grbich (2013: 88) summarises the differences between the recent work of Kathy Charmaz (2000, 2006) and those of Glaser and Strauss by highlighting Charmaz's focus on a "situation of partnership" between the researcher and researched within the context of grounded theory. Guba and Lincoln in Denzin and Lincoln, eds. (1988: 206) present a concise definition of constructivism which had provided me with an initial understanding of my own position as opposed to other paradigms.

Extensive reading, referred to in the sections above, on the various epistemology and ontology theories helped me to establish that I was working "within a certain view of the social world (ontology) and how to generate knowledge of it (epistemology)" (Mason, 1996:18). As a researcher in this study I would be aligned to the interpretative ontological position with a constructivist epistemological approach.

3.4.3 Educational Research

Wellington (2015: 6-10) provides a concise account of the history of educational research by identifying the work of Skinner, Piaget, Bruner and Vygotsky as having significant impact on practising teachers. He concludes that a cursory look at the history of educational research brings to the fore the fact that debates and questions on educational research were and are still ongoing. Of those identified by Wellington (ibid: 10), I believe that my research study is particularly concerned with "the relation to, and impact of, research on practice", "the importance of ethics in education", and "the nature and role of theory in educational research". On the premise that

education in itself is value laden, and is both "highly personal and individual, and also highly social, political and public", I agree with Griffiths (1998:66) that educational research is "action oriented", "has an *effect on* education", and it "*participates in* the development of educational practices". It is these principles that form a key part of my research study, primarily because as an ESD practitioner I had a desire to be action driven whilst hoping to leave an impact on ESD within a sector of society that is not often targeted by ESD programmes, that is, employees. Interestingly, Griffiths (ibid) makes reference to a point I have found lacking in my review of the literature when she stated that "educational research may not be focused on formal educational institutions at all". Whilst my research context is indeed a formal educational institution, it is important to clarify and emphasise that my research inquiry was to explore ESD for employees within an organisation rather than how the research context, UX, could integrate ESD in its HE curriculum. In the UK the latter is being addressed largely through valuable work by the Higher Education Academy. I will be elaborating on this important distinction in the remaining chapters of my study.

Furthermore, McNiff and Whitehead (2010:28) when making a case for practitioners engaging in action research, give a good critique of Whitty's (2005) arguments on the distinction between 'education research' and 'educational research' by arguing that it renders educational practitioners of a "lesser worth than those who generate theories about their discipline...[education]". Being an ESD practitioner myself I sympathise with the preoccupations presented by McNiff and Whitehead (ibid) especially since two key elements of my enquiry are employee empowerment and my role as a change agent. A discussion on action research in relation to my own research study will be presented in Section 3.5 below.

I found the focus on the terms 'systematic', 'critical' and 'self-critical' which Wellington (2015: 13) lifts from Bassey (1990) in his debate on defining educational research, insightful and highly relevant to my research study. My research involved a process whereby I closely examined the data collected in a reflective manner. Yet I also engaged in a self-critical exercise by attempting to be a reflexive change agent through an examination of my own decisions, taken throughout my entire research study.

The notion of reflective practice surfaced over three decades ago and is still prevalent in the teaching profession. It is a model that gives importance to "learning by doing and reflecting on it" as well as "learning from literature and research …to help reflect on practice and improve it" (Wellington, 2015: 204). Thus it may be argued that a reflective practitioner is a researcher because reflective practice can bridge the divide between research and practice. The critical exploration of the issues under study together with the data collected enabled my study to have reflectivity entwined in all its facets.   On the other hand, being self-critical by engaging in reflexivity involves "being critical of our own thinking, beliefs, faith and knowledge, not just other people's" (ibid: 2015: 87). I agree with the explanation of epistemological reflexivity and personal reflexivity given by Willig (2001) in King and Horrocks (2010:23) and believe that being an ESD practitioner aspiring to bring about behavioural change and social transformation as well as my role to serve as a change agent within this process of change and transformation required me to "reflect upon assumptions about the world that have been made in the course of the research" (ibid: 2010:23) as well as to consider ways how my own beliefs, interests, experiences and identities "might have impacted upon the research" (ibid: 2010:23). Reflexivity explores the intersecting relationships between existing knowledge, my experiences, my research role and the world. It opens up possibilities and allows for additional exploration but admittedly, insightful as it may be, reflexivity leads to a degree of uncertainty about the entire research process and great caution is required on the part of the researcher. This approach of reflectivity and reflexivity sits well with the manner I view the world and knowledge. So deep rooted in my personality are the critical and self-critical aspects, that it would have been an impossible task to attempt carrying out my research devoid of these two strands.

Marshall and Rossman (1995:15) claim that a researcher in the social field tries "to gain a better understanding of the complexities of human interactions". Therefore, the process that takes place is one whereby the researcher, through systematic means, (a) gathers information about actions taking place in a particular social setting; (b) engages in reflective and reflexive methods in order to provide meaning to the observations made; (c) evaluates and adopts new practice in order to reach conclusions; and (d) puts forward an interpretation. I agree with Yin (1984) who asserts that the research question plays a crucial role in determining the kind of

research strategy to be adopted; whilst Marshall and Rossman (1995) claim that the research strategy gives a significant indication regarding the most appropriate research methods to suit the study. I have found similarities and overlap between the research categories defined by Marshall and Rossman (1995) and Bassey (1995) as both sets of categories imply that the researcher can be either an "insider" or an "outsider".

Moreover, as discussed earlier in this chapter, my interest in research "that makes a difference to the ways in which people work, think about their work and relate to others" (Schratz and Walker, 1995:11) and my commitment that "seeks both research outcomes and action outcomes." (Fien and Hillcoat, 1996) indicate that this study bears some resemblance to the educative element of the critical research paradigm. Indeed, Carr (1989:33) in Fien and Hillcoat (1996) refers to critical educational research as "liberatory" because it empowers researchers through the process of personal inquiry, reflection and action with regards to their values and actions and the work contexts within which they operate. Subsequently, as I wanted to take the role of a change agent within the research context that I proposed to work in, and given that my research focuses on behavioural change and social transformation within the remit of ESD amongst employees, I believe that, whilst largely containing elements of interpretivism, my research work was also slightly influenced by the paradigm of critical educational research because "its intentions are transformative: to transform society and individuals to social democracy" (Cohen, Manion, and Morrison, 2010).

3.5 Research Methodology

Following some reflection on my starting point and research questions, I reached the conclusion that this research study is best described by Bassey's definition of "action research enquiry" or Marshall and Rossman's "exploratory strategy" with a flavour of grounded theory. I also considered whether the study was more aligned to a case study, in view of the fact that I carried out my data collection in one research context (UX). As is the case in my research, the data collection methods most widely adopted in case studies are interviews and participant observations. I relied broadly on

Bogdan and Biklen's (1982) in Wellington (2015:165) classification of case study, together with work by Hitchcock and Hughes (1995:322), Yin (1984), Merriam (1988), Sturman (1999), Stenhouse (1985), Stake (1994) and more recently Robson (2002:181-2) in Cohen, Manion and Morrison (2007:253-255) as well as an earlier yet similar account of these by Bassey (1999: 22-35). This led me to conclude that neither my role as researcher nor the contextual and theoretical framework of my research study carried the typical attributes and criteria sufficiently and cohesively enough to render it a case study. This is due to the fact that a key element in my research study is to explore a process for finding routes to needs-based and context-specific ESD programmes for employees. In order to attain such a process, I had to keep in mind that it had to possess two crucial characteristics: flexibility and adaptability. Indeed, as will be discussed in section 5.3.3, the study is similar to what Bell (2010:210) refers to as a small scale study which has the potential of informing and illuminating policies within institutions through relatability. Moreover, despite the small sample size which will be discussed in section 3.6.2 below, my study carries some elements of generalisability that would not fit within the typical characteristics of a case study (Wellington, 2015:175).

Moreover, I did also consider how my study fits within the participatory action research (PAR) framework and found some arguments by McIntyre (2008:8), especially those on academic reflexivity insightful, and that influenced my own research work at UX. The tenets specific to PAR include an underlying element to addressing an issue or solving a problem by means of collective investigation, reflection and action. PAR is influenced by, and in part reflects, theories by Gramsci, Marx and Freire and that is characterised by the actions of participants and researchers in the coconstruction of knowledge. McIntyre (ibid: 2008: 4-5) draws on the similarities and variants of PAR within educational settings citing action research and reflective practice research amongst others, but warns it is "unwise to overemphasize their similarities and differences". Interestingly, Le Grange (2009:5) makes a case for the attraction of participatory action research (PAR) to environmental educators by citing Robottom and Hart (1993:54) that "the notion of participatory inquiry in education is appropriate to environmental education not just because it is now more acceptable as legitimate educational inquiry…[but] for the more fundamental reason that the worldviews that underpin both this form of inquiry

and environmental education are virtually the same". After careful consideration, I concluded that my study is not concerned with the "active participation of researchers and participants in the coconstruction of knowledge…and plan, implement, and establish a process for disseminating information gathered in the research project" (ibid: 2009:5). Whilst I believe that they are desirable, my study does not fully embrace nor does it fit within the elements highlighted by Le Grange (2009:12) where the full participation of "local communities in grassroots environmental action is crucial". However, I am of the view that the PAR framework may be an option for carrying out future work in the field under investigation through my research study. I will thus revisit this suggestion in my concluding chapter.

In Section 3.3 above I gave an initial cursory view that the study appears to be rather naturally aligned to elements of action research and grounded theory. Indeed, I support arguments presented by McNiff and Whitehead (2010:29) that "action researchers can contribute to social and cultural regeneration… [and action research] involves explaining why it is so important to establish the validity of practitioners' accounts". My study broadly features the basic tenets of action research identified by O'Leary (2004:139-140) and Denscombe (2010: 126); namely, it (i) addresses a practical problem – ESD programmes for employees; (ii) generates knowledge – design needs-based ESD programmes for employees; (iii) enacts change – employees leading an improved sustainable lifestyle; (iv) is participatory – through seeking views of employees on their own ESD training needs; and (v) relies on a cyclical process – observations at UX. My intended role in this study, to be a change agent, coupled with my professional role as an ESD practitioner in academia, enabled me to investigate my own practices with a view to altering these in a beneficial way. Denscombe (2010:128) rightly points out that the action researcher "while also being a reflective practitioner, adds to this by using research techniques to enhance and systemize that reflection". As will be discussed in the section below, the overview presented by Cohen, Manion and Morrison (2010:297-312) helped me gain a deeper understanding of action research and how this lines up against my own research study.

Moreover, I find the components of grounded theory built on the work of Glaser and Strauss particularly relevant to my study. Grounded theory contrasts with

methodologies that test theories or merely provide descriptive accounts of subject matter. Instead it aims to generate theory whereby researchers are "engaged with fieldwork as the fundamental part of the work they do" (Denscombe, 2010:107). Furthermore, grounded theory emphasizes the need to link explanations closely to what happens in practical situations occurring in the real world (ibid). The point at which I believe my study bears strongest resemblance to grounded theory is in the coding of my data. Through the use of NVivo software, I adopted a mix of what Cohen, Manion and Morrison (2007:493) refer to as "open" and "axial" coding methods whereby I 'open' coded my data and created new nodes and child nodes where necessary. Yet, in the analysis stage I applied the 'axial' approach in order to make links between the categories and nodes. This means that "as coding proceeds the researcher develops concepts and makes connections between them" (ibid). In the next section I will present a brief discussion about action research in educational contexts to further demonstrate its applicability to my own research study.

3.5.1 Action Research in Education

Work by Lewin (1946) and Corey (1953:6), amongst others dating back to the 1940s and 1950s (in Cohen, Manion, and Morrison, 2010:297), presented the impressive scope of action research which is largely due to its complex and multifaceted nature. For my study I adopted the view put forward by Costello (2011:13) who claims that selecting action research is a deliberate choice of enquiry. A researcher then needs to determine which action research framework to choose "from the range of models available or possibly developing one's own model". This section demonstrates how my research is based on an action research model created by myself but broadly influenced by the existing models. Action research within the educational field involves a commitment to the improvement of learning and education in the social context in which the researcher is situated or operates. Upon examining McNiff and Whitehead's (2010:35) definition of action research, it became clear to me that the aims of this research study would best be met through educational improvement particularly as these authors (ibid) describe the nature of processes of improvement where the researcher has "the capacity to influence the future through acting intentionally in the now. It also carries the responsibility of ensuring that we act well, to create the kind of future we wish to live in". Through the application of de Bono's

thinking tools I attempted to devise a process for the design of educational programmes amongst employees that would bring about employee empowerment. I decided to do this by means of educational action research through which I could explore the process for social and institutional transformation within the organisation which was to serve as my research context because "the community and researcher together produce critical knowledge aimed at social transformation" and "theory and practice are integrated" (Herr and Anderson, 2005:16).

The study holds its epistemological base within the critical and interpretivist theories because I attempted to engage in a democratic activity which in itself is participatory, rather than representative. Hence, I support Cohen, Manion & Morrison's (2010:301) assertion that it "is not merely a form of change theory, but addresses fundamental issues of power and power relationships, for, in according power to participants, action research is seen as an empowering activity". As mentioned in the previous section of this chapter, by taking such a position, I was aware of the proximity to some elements found in participatory action research (PAR) inspired by Paulo Freire. Whilst it is accepted that my research study does aim to provide some form of employee empowerment, unlike the traditional PAR, it does not take "place within a force field of power relations in which conflicts of interest often create resistance to the research" (Herr & Anderson, 2005: 16). Neither does it carry characteristics of struggles by minority groups such as the political struggles against apartheid in which some South African environmental educators found great similarities (Le Grange, 2009). PAR became popular within the Australian environmental education movement in the 1980s with work by Stephen Kemmis and Ian Robottom. To a degree, similar to the Australian environmental educators, I too became attracted to PAR because of its "democratic impulse, critical orientation and grass roots action approach" (Le Grange, 2009:4). However, the research study does not fully embrace the true meaning of participation because I, as the researcher was not fully immersed in the research context and was ultimately an outsider researcher to my research participants. Consequently, it may be argued that the research study mirrors a key finding as reported in "South African PAR studies, and corroborated by several international studies reported in Reid et al (2008), [that] the ideal of full participation is not always possible" (Le Grange, 2009:12). It is therefore the case that the research study sits more comfortably with the experimental action research work by Heron in

Herr & Anderson (2005:16) which he defines as *co-operative enquiry* because of the reciprocal participative knowledge that took place between the researcher and the research participants. The study aims to derive knowledge about a process for the design of employee training in education for sustainable development from the research participants. This knowledge would then feed into the needs-based approach design for the training programme. I believe that this research study encapsulates educational action research characteristics. This is because it is primarily driven by a desire to solve practical problems in the design and implementation of education for sustainable development programmes for employees and to link research with practice. Furthermore, it is envisaged that it would create a change in education for sustainable development practice in a workplace setting, and a change in my own professional self-development as a practitioner in the field through my role as a change agent. The research carried out amongst a set of employees will feed back into the practice (process) of designing education for sustainable development programmes for employees thus creating a cyclical process that is ongoing and with the participation of the researcher. Finally, the study "aims not only at technical and practical improvement and the participant's better understanding, along with transformation and change within the existing boundaries and conditions, but also at changing the system itself of those conditions which impede desired improvement in the system/organization" (Zuber-Skerritt 1996:4-5 in Denscombe, 2010: 131). Lastly, it was established that my research study falls in line with Habermas' position in Herr and Anderson (2005:27) in that my own interests as a researcher and the knowledge derived from the study are intrinsically linked because I am driven by what he terms three interests in the pursuit of knowledge: technical, practical and emancipatory (Habermas, 1971).

3.5.2 Disadvantages of Action Research

Denscombe (2010:134-5) lists five disadvantages of action research. In my opinion, this research study has the potential of fitting predominantly within three of the disadvantages. These are what Denscombe (ibid: 135) refers to as "scope and scale", "ownership" and "impartiality". I have emphasised that my research study focuses on the process of the design for ESD programmes for employees. Furthermore, I have argued that two key elements in this design process are

adaptability and flexibility. I have done so because I am conscious of criticism of action research as lacking scope and scale because of the "representativeness of the findings and the extent to which generalizations can be made on the basis of the results" (ibid: 135).

The research study aims to highlight the fact that the design process may be applied to other contexts and does not necessarily belong exclusively to the research context where the study has taken place. Since the participants' views assist in shaping the design process of the ESD training programmes, I accept that the ownership of the research process is somewhat blurred due to the relationship between the practitioner (in the present case, the employees) and the researcher. In the case of this research study, it would be safe to say that ownership of the action research element is shared between the research participants (who have actively contributed to the reflective element of their own work practices in relation to employee training and sustainable development practices) and the researcher (who shaped the research in a manner that reflects the researcher's value set and reflexive process of being an ESD practitioner). Contrary to Denscombe (ibid), I believe that this can be regarded as a strength, and not a disadvantage in the research design because it may lead to an emancipatory experience for the research participants – a desirable aim of this research study. Differing views on research strategies are abundant and the field of qualitative action research is not lacking in this regard. Academics view action research as a form of knowledge that leads to change within the setting where the practice itself is being researched. However, they are uneasy with the notion that action research is "public knowledge with epistemic claims beyond the practice setting" (Herr and Anderson, 2005:52). This is because action research is perceived as practice-driven rather than theory-driven. As an action researcher leaning towards emancipatory action research, as described by Cohen, Manion & Morrison (2010:302-3), I stand to be criticised for producing research that carries my own vested interest in the findings which Denscombe (2010:135) refers to as "unlikely to be detached and impartial". Yet, I have argued how my research study fits the interpretivist approach and is therefore not value free. Critical action research is therefore problematic and regarded as controlling, because since it is "itself, value laden it abandons neutrality; it has an explicit social agenda, that under the guise of examining values, ethics, morals and politics that are operating in a particular

situation, is actually aimed at transforming the status quo" (Melrose, 1996:52, in Cohen, Manion & Morrison, 2010:304). This research study has indeed strong elements of assisting in behavioural and institutional change leading to social transformation. It cannot be denied that my own environmental ethic has directed the path taken in the process of the behavioural and institutional changes at the research context.

3.6 Designing the Research Study

I found McNiff and Whitehead's work (2010:112-140) on designing a project of significant help in the 'project management' aspect of my study. Their forward planning concept and related checklists are clear and user friendly – just what a doctoral student needs in the face of the chaotic and messy realities of the nature of qualitative social and educational research!

The data collected was grouped under the categories: (i) level of awareness and understanding of environmental issues and sustainable development issues; (ii) relation between the context of the participants' workplace and the environment; (iii) the needs of the workplace as a commercial entity; and (iv) the individual needs of participants in terms of thinking processes that would lead to empowerment. The emphasis on thinking processes has in fact been highlighted by Cloud when discussing the UN Decade for Sustainable Development (2005-2014) in Chalkley, Haigh and Higgit (2009:225) whereby he suggests that "one of the greatest opportunities that EFS can offer to EE that will strengthen its capacity over the next ten years is the contribution of the tools, concepts, archetypes, and "habits of mind" of systems thinking and system dynamics education – a core content area of EFS".

In view of the nature of the data required for the research project, it was envisaged that the data would be collected by means of observations and reflections, semi-structured interviews and casual conversations with employees. Since the writing of my research proposal I had relocated to the UK. Hence, it became more feasible to select a research context within the UK. This was especially so given my intention to adopt action research methodologies which require the researcher to be significantly

immersed in the research context. Indeed, "education for sustainable development involves discussions and critical reviews of different alternatives and their consequences" (Sandell, Ohman and Ostman, 2005:193). The research enabled me to conduct such discussions and critical reviews, with the selected employees, through the use of de Bono's thinking tools, during the interviews and casual conversations. Initially, it was hoped that the number of employees (research participants) would be between twelve and fifteen as it was thought that this number would permit me to become effectively engaged with all the research participants. Albeit I was aware from the outset that this number may change depending on the outcome of further desktop research, and more importantly, depending on the researcher's dialogues with potential settings that would be reticent to participate in the study. It was therefore established that, should further desktop research and dialogues with research participants point to the need for further work at the research context, I would carry out two casual conversations to cover any gaps in the data I had already collected. However, this was to be determined at a later stage in the research since I agree with McTaggart cited in McIntyre (2008) who states that participatory action research becomes a living dialectical process, changing the researcher, the participants, and the situations in which they act. In my capacity as a researcher I also made use of a research diary to note observations, incidental dialogues and any other relevant information and reflections.

As discussed earlier on in this chapter, the questions for the interviews as well as the loose plan for the casual conversations were designed by using de Bono's thinking tools. The Direct Attention Thinking Tools recently renamed Power of Perception[TM] Tools were identified as being the most appropriate in the design and analysis of the interview questions since the tools enable the employees (research participants) as well as myself to have a broad and inclusive viewpoint; assist us to create a framework for defining a situation; and improve our ability to consider our consequences before we take any action (De Bono Consulting, 2009).

I planned to carry out the study at an entity from the higher education sector which was determined as University X in the UK (UX). The fact that the organisation I was to utilise in order to gather my data is a higher education institution does not reflect any underlying research aims or interest to research the integration of ESD in a

higher education curriculum for students. My interest remained solely in exploring ESD with employees. UX was therefore not purposefully selected. It was the result of my having a contact person there that supported my research interest and assisted me in gaining entry to a set of research participants. It was an important factor for the chosen research context to be an organisation that employs about 500 people or less so that it would be small enough for it to benefit from the ripple effect of the work I carried out with the research participants. It was established that, if the only organisation willing to serve as my research context employed more than 500 people, then I would need to work with a small selection of its departments so as to keep the overall size of the research context manageable for the purposes of my study. Initially, it was hoped that the data collection would take place between November 2013 and January 2014. However, from findings in my MA research (Mifsud, 2003), as well as from preliminary discussions with various organisations that could have served as a research context, I was conscious of the importance for the data collection stage to be discussed and mutually agreed on by all those involved in order to be sensitive to the needs of the organisation. For example, I needed to ensure that my data collection would not coincide with the organisation's busiest period in the year. In fact, UX proposed that I commence my interviews and data collection in February and March 2014. It was for this reason, together with the process gone through to obtain ethical clearance from LSBU, that data collection did indeed take place at this time.

3.6.1 Triangulation

Patton (2002), Denzin (1998) in King and Horrocks (2010:164), Denscombe (2010:346-348) and Cohen, Manion and Morrison (2010:142-144) identify several types of triangulation and these include data triangulation, methodological triangulation, investigator triangulation and theory triangulation. For the purposes of this study, I adopted data triangulation and methodological triangulation. The former uses a variety of data sources such as interviewing people in different status positions or with different points of view. McNiff and Whitehead (2010:179) describe it as data "looked at from a range of perspectives". I also selected methodological triangulation using multiple data collection methods to study a single problem, namely documents, interviews, casual conversations and observations. I have used more than one method of collecting information by applying the triangulation principle

(Wolcott, 1988) because it has been recommended that researchers should not rely on a single source of data. A combination of data collection methods has the advantage that: "Limitations in one method can be compensated for by the strengths of a complementary one" (Marshall and Rossman, 1995:99). However, I do agree with King and Horrocks (2010:164) who warn that triangulation may not necessarily "enhance the validity of qualitative research…[yet it] may still be valuable as a way of making a study more comprehensive in the way it approaches its subject matter…and can be a useful stimulant to reflexivity on the part of the researcher". Denscombe (2010:348-349) highlights similar benefits of using triangulation, but lists a few drawbacks which I tried to bear in mind when carrying out my research study and I can in fact state that they did impact my study to some degree. These are that using more than one method impacts the time and resources available and requiring more multi-skilling on the researcher's part (ibid: 2010: 349-350).

3.6.2 Sampling and Sample Size

Contrary to quantitative research, qualitative research does not require a sample that would serve as a statistically representative section of the population. In qualitative research different forms of generalisability and transferability are applied. As described in previous sections of this chapter, accessing research participants for my data collection was a major difficulty in the research study. Bell (2010:149) acknowledges this by saying "all researchers are dependent on the goodwill and availability of respondents". Whilst I had good support from my key contact point (gatekeeper), the response from employees at UX was poor and somewhat discouraging. My gatekeeper served as an insider who actively assisted in recruiting my research participants. King and Horrocks (2010:31, 32) list the advantages and disadvantages of using insiders to help with sample recruitment, so I kept an open mind during this stage of my research. Notwithstanding the commitment and assistance received from the gatekeeper at UX, I was still "forced to interview anyone from the total population who is available and willing at the time" (Bell, 2010:150). Hence I opted for *opportunistic sampling* which "takes advantage of opportunities that open up" (Miles and Huberman, 1994). I support Denscombe (2010:37) when he says that whilst it makes practical sense to opt for convenience (opportunistic) sampling due to limitations of time and money, relying on this sampling method as

the driving force rather than a subsidiary one to draw a research sample "runs counter to the rigour of scientific research" (ibid: 2010:38). Indeed, he warns "It suggests a lazy approach to the work" (ibid: 2010:38). Similarly, King and Horrocks (2010: 29) point out that "the sample needs to relate in some systematic manner to the social world and phenomena that a study seeks to throw light on". Bearing this in mind, I decided to support it with the *snowball sampling* technique in order to access other research participants for the study in the hope that they could be included in my sample.

However, I have to admit that, in my case, this approach did not have the advantage mentioned by Denscombe (2010:37) that "the accumulation of numbers is quite quick". It was a continuous uphill struggle to recruit participants even though the gatekeeper and I had received an encouraging response and interest at the outset. Conscious of my own time constraints, and the deadline to complete my research study, after six months of chasing up potential recruits and having secured seven interviews, I had no option but to decide to bring my data collection through interviews with UX employees to a close. Still, evidence suggests that, particularly in qualitative social research as the study unravels, more data does not necessarily lead to more information and insight into the topic under investigation (Ritchie, Lewis and Elam, 2003), (Mason, 2010) and (Wellington (2015). Mason (2010:1) voices what is probably a prevalent sentiment of many qualitative social researchers when he says that qualitative research "is very labour intensive, analysing a large sample can be time consuming and often simply impractical". I therefore relied on the arguments put forward by the body of researchers that provide justification for small sample size in qualitative social research.

3.7 Data Collection Methods

In section 3.1.3 I argued the importance of framing the research questions first before deciding on the data collection methods. Using the 'questions-methods matrix' by Wellington (2015:108) helped me plan the data collection process by selecting the data collection methods best suited to feed into my research questions. In other words, I needed to make sure that the methods I choose would provide me with the information I set out to find and explore through my research questions. These would

in turn guide my research towards meeting the overall research aims of my work. I support Denscombe (2010:153) when he states that data collection methods are "tools that help the researcher to gain: a clearer picture of things; an accurate measurement of things; facts and evidence about the subject matter". Section 4.3.1 will explain why I carried out slight changes to the research questions I had set in the early stages of my research study. These changes are reflected in the matrix below. It was hoped that my research study would reveal a clearer picture of the specific needs of the selected research context as well as facts and evidence about employee training design for ESD.

For the purpose of my study, I have chosen to use the terms data collection 'tools', 'method' and 'instruments' interchangeably since all three terms are found in literature on social and educational research. Each of the data collection tools carries its strengths and weaknesses. It was therefore important to consider carefully how to reduce the risks of the methods I chose on the basis that they were most useful to the task at hand (Cohen, Manion and Morrison, 2010: 315 and Denscombe, 2010: 154). One way of navigating my way around this scenario was by adopting a mixed methods approach so that "weaknesses in one method can be compensated for by strengths in another method" (Denscombe, 2010:154). Bell (2010: 117) also argues that whilst typically research methods are associated with certain methodologies these are not "exclusive" as the focus is on their suitability to do the job. Below is my questions-methods matrix which I also linked up to a few of the themes I had identified for my research study:

LR: Literature reviewed DOC: UX documents INT: Interviews CONV: Casual conversations OBS: Observations		
Research Questions	**Themes of the Study**	**Data Collection Tools**
How can the use of de Bono thinking skills lead to employee participation during the course design in a manner that facilitates their own training programme?	• Applicability of de Bono's thinking programmes to the design of employee training.	INT CONV
How can the application of thinking skills to the design of employee programmes in Education for Sustainable Development bring about employee empowerment in order to induce positive behavioural changes necessary in achieving an improved quality of life?	• Applicability of de Bono's thinking programmes to a sustainable lifestyle.	INT CONV
What form should employee programmes in Education for Sustainable Development take if they are to assist employees lead a sustainable lifestyle?	• The strands in ESD: financial, social and environmental considerations. • Staff Development Programmes for SD. • Factors when designing ESD for UX staff. • Aims of ESD for UX staff. • The design process of needs-based employee training.	DOC INT CONV
What do employees perceive as opportunities and constraints to ESD at the workplace to attain improved SD across the organisation?	• Characteristics of ESD	INT CONV
What skills (cognitive, practical, thinking, decision-making, problem-solving) are required by employees if they are to become more confident in implementing action strategies that will help them adopt a sustainable lifestyle?	• Skills needed for sustainable lifestyle.	INT CONV OBS DOC

In what ways will this investigation improve my role as a change agent in order to promote people-centred sustainable development?	• Social transformation and Institutional Change: ➢ The employees at their workplace. ➢ Transfer of behaviour changes beyond the workplace.	INT CONV OBS

Table 1: Question-Methods Matrix

In the above matrix I have included publicly available documents from the research context. These UX documents introduced me to the organisation by providing me with an overview of the institution. Additionally, they helped me gain an understanding of the organisational mind set in relation to my research inquiry. I therefore included them as sources of data and uploaded to NVivo data analysis software in order to carry out content analysis. Duffy (in Bell, 2010:124) states that most "educational projects will require the analysis of documentary evidence". The documents can be classed as primary sources since they were written and published by UX. Therefore their content reflects the 'real' and 'actual' views and position of the organisation.

In the following sections I will be presenting a discussion of my chosen data collection methods: (i) Semi-structured Interviews; (ii) Casual Conversations; and (iii) Observations.

3.7.1 Semi-Structured Interviews

Interviews give access to other people's perceptions, including the thoughts, attitudes and opinions that lie behind their behaviour. "Yet, even this access is limited. The interview, at its best, only brings to light what the interviewee *thinks* - his or her interpretations at the time and under the circumstances of an interview." (Altrichter, Posch and Somekh, 1993:101). I favour Kahn and Cannell's (1957:149) description of in-depth interviewing as "a conversation with a purpose". Thus, the researcher should avoid very strict and rigid questions that could obstruct the smooth flow of conversation between the researcher and participant by being "flexible regarding the phrasing of questions and the order in which they are asked" to "allow the participant to lead the interaction in unanticipated directions" (King and Horrocks, 2010:35).

Whilst I believe that such flexibility is suited for some studies, I preferred to give some structure to the interview by preparing carefully worded questions that would assist the interviewee gain focus on the topic in question. This approach puts my semi-structured interview towards the middle of the formality scale by not being totally unstructured which Bell (2010:165) terms as a 'guided' or 'focused' interview since I did ask a series of questions but my respondents were at liberty to "talk about the topic and give their views in their own time" Bell (2010:165). I followed Bryman's (2004:323) interpretation of semi-structured interviews where the "interviewer does follow a script to a certain extent" so that "more specific issues can be addressed" because I set off on the journey of inquiry "with a fairly clear focus, rather than a very general notion of wanting to do research on a topic". The success of an interview depends on two levels of communication: the level of content and the level of relationship. These influence each other since the: relationship between the interviewer and interviewee (mutual trust) influences their understanding of what is said during the interview (the content) (Altrichter, Posch and Somekh, 1993:102). The interviews with employees at UX lacked the relationship aspect because I had never met the employees prior to the interview. Initially, I was preoccupied about this shortcoming and assumed that the employees would not contribute freely to the discussion during the interviews for the following reasons: (a) no trust in researcher; (b) inhibitions; (c) concern that the researcher might make their responses known to senior management; (d) inability to see the relevance of interview; and (e) lack of interest in the issues raised during the interview. For these reasons, during the introduction of each interview, I placed a great deal of effort in establishing trust and arousing interest in the issues I wanted to deal with. Yet I remained guarded by the importance of retaining a level of objectivity to reduce the possible influence I may have on their responses. Moreover, I attempted to become acquainted with the interviewees by communicating with them through email for the purposes of setting the interview date, sending them the interview information document and the consent form. When designing the interview questions, I followed recommendations by King and Horrocks (2010:36) and relied on my own personal experience of the research topic, literature I had reviewed and my own informal preliminary work about my selected research area as well as the research context. I also found Bryman's (2004:324) guidance on preparing the interview guide insightful and did my utmost to adhere to the relevant points. These included creating a certain amount of order in

the topic areas; formulating the interview questions in a manner that would help me answer my research questions; using comprehensible language for my research participants; avoiding the use of leading questions; and including demographic questions. This will be explained in more detail in Chapter Four, section 4.3.3. Indeed, the first section of my interview consisted of 'background/demographic' questions because such information is "useful for contextualizing people's answers" Bryman (2004:324). The rest of the questions were designed to provide me with the information I required to feed into my research questions. These interview questions fell into two categories: 'opinion/values' questions and 'knowledge' questions (King and Horrocks, 2010:37).

3.7.2 Casual Conversations

Researchers adopting totally unstructured interviews use what Bryman (2004:320) refers to as an "*aide memoire* … a brief set of prompts to him- or herself to deal with a certain range of topics". I found this interview style a suitable data collection method that would give me an initial feel of what the situation on the ground in my research context was. In fact, I carried out the first unstructured interview at the outset of my data collection stage. Later, when I brought my interviews to a close and upon reflecting on the data I had collected, I carried out a second unstructured interview with another employee at UX and used it to derive information that appeared missing from the data collected through the seven semi-structured interviews I conducted earlier (ref. 4.3.4). This was a good method to fill in gaps of information for my research. Unstructured interviews are "similar in style to a conversation" (ibid: 321); thus it is not uncommon to come across the terms informal (or causal) conversations (Burgess, 1984) for this style of data collection. Turner (2010:755) relies on the description given by Gall et al. (2003) in that the informal conversational interview is about "the spontaneous generation of questions in a natural interaction". Whilst several researchers such as McNamara (2009) appear to hold a similar view to Gall et al. (ibid), Turner (ibid) warns that some, such as Creswell (2007), view this interview style as "unstable or unreliable because of the inconsistency in the interview questions, thus making it difficult to code data". Mindful of these debates about unstructured interviews, or casual/informal conversations, I attempted to develop my own style for these interviews. In fact both interviews I

carried out by means of this data collection method were different both in style and content. I did this because I wanted the flexibility to adapt to the interviewee as well as to provide myself with the opportunity to construct questions as the research developed, whilst bearing in mind my research questions and what information I required to be able to answer the research questions. This was the major difference between the two casual conversations and the seven semi-structured interviews I carried out amongst employees at UX.

I cannot agree with the assertion that, this approach rendered the two casual conversations I conducted for this research study unstable and/or unreliable. Rather, I am of the opinion that the flexible characteristic of casual conversations brought richness and depth to my data. The remaining points about semi-structured interviews discussed in section 3.7.1 above are applicable to casual conversations. I, therefore, adopted the same approach particularly when preparing for the casual conversations, how they fed into the research questions of the study and the actual implementation of the casual conversation. The overview of the purpose of interviews and their different types as given by Cohen, Manion and Morrison (2010:351-356) provided me with a solid understanding about this research method.

3.7.3 Observations

Observations are a data collection method offering the researcher the possibility of gathering data about a situation in its setting, as it occurs without having to rely on second-hand accounts. The reasons identified by Mason (1997:61, 62) for my choice of observations as one of my data collection methods include: (i) ontological reasons – I have an interest in the research setting itself in order to note any signs of UX's commitment to sustainability; (ii) epistemological reasons – obtaining knowledge of the social world by observing real-life settings at UX; (iii) social explanations – through the adoption of grounded theory and interpretative data analysis; and (iv) being a reflexive researcher – through my intention of taking up the role of a change agent. Whilst, as Wellington (2015: 248) rightly points out and in line with O'Leary's "filtering observations" diagram (2005:171), it may be said that this method can be unreliable due to the fact that what a researcher observes and interprets reflects the researcher's own bias, I decided to carry out observations during my visits to UX

because I am of the opinion that they support information collated through the interviews I conducted with UX employees, and can verify data gathered through UX documents (ref. 4.3.5). Cohen, Manion and Morrison (2010:396) cite Robson (2002:310) to point out that "what people do may differ from what they say they do, and observation provides a reality check". Similarly, Wellington (2015:247) refers to work by Hammond and Wellington (2013:111-114) who state that "there may be a mismatch between what people say and what people do".

A researcher can conduct observations of facts or observations of behaviours and observations can be anywhere on a scale from highly structured to totally unstructured. Unstructured observations, as defined by Punch (2005:179-180) in Bell (2010: 193), were more suited to my research study. The unstructured observations conducted at UX were done in a "more natural open-ended way…. [so] that categories and concepts for describing and analysing the observational data will emerge later in the research…rather than be brought to the research, or imposed on the data, from the start" (ibid). This stance is also in line with Cohen, Manion and Morrison (2010: 397) and fits in with the arguments I made earlier in this chapter in section 3.5 that my study has an element of grounded theory particularly in the approach I adopted for coding and analysing my data. Bowling (2002:367), in Bell (2010:193), makes a similar point on grounded theory and hypotheses generation. On a more practical level, I found the checklist provided by Bell (2010: 203) full of useful tips which guided me through the process of planning my observations.

3.8 Conclusion

Herr and Anderson (2005:76) rightly state that "The methodology section of the dissertation proposal is the researcher's best guess as to what will transpire in the field". Indeed, a cursory look back at the commencement of my research journey when I drafted my research proposal, confirms that the methodology discussion was nothing more than the best guess I could map out at the time of writing it. I had thought that my research study would be best positioned in the participatory action research framework within the critical educational research paradigm. As I gradually embarked on my research study, I developed maturity and improved understanding of what it is I wished to do and what resources I had available to me: time, energy, support from colleagues and institution. It was thus a natural part of the reflexive

exercise whereby I later revisited the research methodology section in my research proposal and made amendments as I felt was better suited to the context I was working in. Indeed, following this reflective and reflexive process, I altered my methodology as owing to time constraints on my part as well as to the difficulty in gaining access to a research context and research participants, it was necessary to adopt educational action research with grounded theory influence in the data analysis to be adopted.

The theoretical discussions put forward in this chapter are in fact the product of a situation best described by Herr and Anderson (2005: 76): "It is not uncommon, given these realities, that doctoral students will significantly rewrite what was originally written in the methodology section of the proposal for the dissertation". I do not view these changes as a weakness in the conceptual and contextual grounding of my research, but, rather, a process typical of qualitative research whereby the researcher becomes intrinsically enmeshed with the research throughout the entire journey.

Research Findings

4.1 Introduction

The previous chapter provided a detailed discussion of the research journey that led to the establishment of a theoretical framework for the collection and management of data. It was necessary, from the outset of my study, to reflect upon the nature of my enquiry in order to question my own assumptions about my investigation and place them in a theoretical and contextual framework. I did this through an extensive review of literature on education for sustainable development, Corcoran and Walls (2004), Sandell, Ohman and Ostman, (2008), Chalkley, Haigh and Higgitt (2009), The Higher Education Academy (2014), and UNESCO (2014), as I agree with Wellington (2015:56) who says that "reviewing the literature is integral to thinking about the research that one is undertaking". I supported this exercise by considering the ontological position that best suited my research enquiry to establish the social reality and discover the implications of my research. Furthermore, an understanding of the epistemological position of my study led to the manner I generated data so that my epistemology helped me "to generate knowledge and explanations about the ontological components of the social world" Mason (1996:13).

In this chapter I will describe how I planned to record and manage the data which would shed light onto my research enquiry and provide some answers to the research questions. The identification of the main research themes and the coding process adopted for the analysis of the data is explained in the last section of this chapter.

4.2 Planning and Managing Data

Qualitative data is broadly associated with research strategies such as case studies, grounded theory, action and participatory action approaches. The most frequently used research methods for collecting qualitative data are interviews (open-ended, semi-structured, or structured), observations, questionnaires and documents. As

described in the previous chapter, I felt that the research methods most suited for my enquiry were interviews, casual conversations (or semi-structured interviews) and observations. To supplement these, I availed myself of documents and other material from UX. Marshall and Rossman (1995:108) and Altrichter, Posch and Somekh (1993:69) place significant emphasis on the planning process and on systematic recording of data. In view of this, I used some of de Bono's thinking tools when designing a few of the interview questions because their integration assists the interviewees to direct their attention to a specific focus. I have also opted to use qualitative data analysis software NVivo because it helps data to be "collected, processed and filed in a way that makes them amenable to analyses" (Denscombe, 2010:274). I agree with Wellington (2015:259) that "qualitative research produces large amounts of data". Therefore sifting through the voluminous data is useful during data analysis since it helps to bring "order, structure, and meaning to the mass of collected data" (Marshall and Rossman, 1995:111). Wellington (2015:259) argues that there is a real danger amongst qualitative researchers to "*over-collect* and *under-analyse*" due to a preoccupation with not having sufficient data to work with. Yet, it is vital to be mindful of the researcher's own time and energy limitations.

4.2.1 The Context for Data Collection

The interviews, casual conversations, observations and document reviews were carried out at UX in the UK. The data collection and recording took place between April 2013 and April 2015 with the majority of interviews carried out between February and April 2014. In late 2014, following preliminary coding of data, I carried out a second casual conversation because I felt the need to have a wider understanding of some of the emerging themes. The data from observations and UX documents was mostly recorded before, during, and after I carried out the interviews and casual conversations. Coding of the UX documents and my observation notes took place after the coding of the interviews and casual conversations was carried out. Even though I endeavoured to be as rigorous as was practically possible in having a robust data collection system, I am mindful that "data can only represent events selectively… [and]…whatever is produced or selected as data depends on interpretative processes by the researcher…" (Altrichter, Posch and Somekh, 1993:70). Therefore, it is important to clarify that the findings of the research study,

through the data collection methods, represent reality, yet not "reality itself, but only its traces" (ibid: 71).

4.3 Study Design

There are differing views on whether qualitative research should have an all-encompassing research design. This is because research set in the qualitative tradition can indeed be fluid and adaptive to the research process. I believe that my research study carries an adaptable and changeable element which in fact did produce some slight changes in focus from its origins since both my research context and my own ideas changed as the study unfolded. Yet I am in agreement with Mason (1996:10) who argues that there are "intellectual and practical reasons why qualitative researchers should produce workable research designs…for the coherent and rigorous development of their project". Before considering the design that was best suited for the study, it was important to reflect once again upon the research questions to ensure that using UX as my data collection context would provide me with data best suited to explore answers to my research questions. I agree with Bryman (2004:31) that the lack of clear research questions gives rise to unfocussed research with no real knowledge as to the reasons why data is being collected.

4.3.1 Research Questions

After having established that the study is "ontologically meaningful, and epistemologically explainable or workable" Mason (1996: 15), I was able to formulate the research questions. However, I did revisit my original research questions as the research developed and determined that some minor amendments were necessary. These are highlighted below:

Key Questions:
- How can the use of de Bono thinking skills lead to employee participation during the course design in a manner that facilitates their own training programme?
- How can the application of thinking skills to the design of employee programmes in Education for Sustainable Development bring about employee empowerment in order to induce positive behavioural changes necessary in achieving an improved quality of life?

- What form should employee programmes in Education for Sustainable Development take if they are to assist employees lead a sustainable lifestyle?

    Subsidiary Questions:

- *To what extent do existing forms of Education for Sustainable Development give sufficient focus to people's thinking processes and how do these benefit employees?*

- What skills (cognitive, practical, thinking, decision-making, problem-solving) are required by employees if they are to become more confident in implementing action strategies that will lead to a sustainable lifestyle?

- In what ways will this investigation improve my role as a change agent in order to promote people-centred sustainable development?

As the study began to unfold, it became increasingly apparent that in order for organisations to introduce ESD amongst their employees in a manner that fits the specific needs of the work setting, the emphasis of this research needed to be on the process of formulating the training programmes rather than on the design of a product in the form of a training manual. Therefore, I need to reiterate that this research study is of an exploratory nature whereby, as an ESD practitioner keen on introducing ESD to the workforce, I sought the viewpoints of a set of employees on the *form* or *process* that could be adopted during the design stage of a need-based ESD training programme across an organisation.

Furthermore, literature reviewed indicated that there is very little, if any, mention of employees' thinking processes and how these could be linked to ESD. Instead there are pertinent questions on the constraints and opportunities for organisations should they commit to ESD and SD. In view of this, I felt it necessary to eliminate the subsidiary question below:

- *To what extent do existing forms of Education for Sustainable Development give sufficient focus to people's thinking processes and how do these benefit employees?*

And replace it by:

- *What do employees perceive as opportunities and constraints to ESD at the workplace to attain improved SD across the organisation?*

Indeed, the amendments I made to my research questions as described above are in line with arguments presented by Wellington (2015:65) who he states that the cyclical process of reading, reviewing, and writing about the literature is thus an important exercise that leads the researcher to revisit and clarify the research focus and questions. This in turn allows the researcher to identify any gaps in the literature already explored and what literature needs to be looked at more deeply. When I was certain of the final wording of the research questions, I set out to identify the key themes for my study. These are presented in the next section.

4.3.2 Identification of the Main Themes

"Many analyses of qualitative data begin with the identification of key themes and patterns" (Coffey and Atkinson, 1996:26). The themes I developed as criteria against which I could select data that feed into my research questions can be seen in the table below:

Themes of the Study	
Type of Organisation	Commitment to ESD
	Staff development programmes
	Staff initiatives
Characteristics of ESD	The strands in ESD
	Constraints and Opportunities:
	➤ Legislation
	➤ Financial, social, environmental considerations
De Bono's Thinking Skills Programmes	Thinking Skills
	De Bono's thinking programmes
	Applicability of de Bono's thinking programmes to:
	➤ The design of employee training
	➤ ESD
	➤ A sustainable lifestyle
Employee Training	Staff development programmes for SD
	Skills for sustainable lifestyle
	Design process of needs based employee training
Behavioural Change, Social Transformation, Institutional Change	Empowerment skills
	The role of a change agent
	Social transformation & Institutional Change:
	➤ Employees
	➤ Transfer of behaviour changes beyond the workplace

Table 2: Themes of the Study

4.3.2.1 Type of Organisation

In order to gain an understanding of UX which was to serve as my research context, I felt it necessary to explore the level of involvement UX has with sustainability and ESD. Therefore, this was my first key theme that would set the context for my research at UX.

4.3.2.2 Characteristics of ESD

An in-depth knowledge of the key concepts and trends in the field of ESD was essential for me to be able to proceed with my data collection. Most of the information gathered for my second key theme was from literature reviewed but it was supplemented with data I collected from my research context in order to inject the reality as perceived by my research participants at UX.

4.3.2.3 De Bono's Thinking Skills Programmes

As part of my research I wanted to explore the potential link between improved thinking skills and behavioural change that would lead to a more sustainable lifestyle. Since I am a certified trainer in two of Edward de Bono's thinking programmes and have work experience in integrating thinking skills in training programmes as well as in my lectures with both undergraduate and post graduate students at the University of Malta, I identified this as my third key theme for my research study.

4.3.2.4 Employee Training

The literature reviewed on employee training and development served as a springboard for me to explore the research participants' views on needs based employee training together with the skills they felt are required to embrace and adopt a sustainable lifestyle. Hence the fourth key theme formed the basis of my research at UX because it specifically delves into the 'how' element of designing training for employees in order to instigate a change of behaviour and a social transformation.

4.3.2.5 Behavioural Change, Social Transformation, Institutional Change

The fifth and final key theme for my research study served to allow me to reflect upon my own research journey as a change agent as well as on the hypothesis that improved thinking skills would bring about employee empowerment and engagement

in the process of ESD at the workplace. Finally, through this key theme, I was able to tease out any trends of sustainable behavioural transfer from the workplace to the wider context of employees at UX.

It was then necessary to determine which sources would provide the data for each of the research themes that would shed light onto the research enquiry I had embarked upon. The literature reviewed served as a springboard to help identify what information is available on the research topic under investigation. It also helped to reshape the original research questions and guide me to identify the main research themes of the study. The documents and publications from the research context (UX) were valuable in offering a cursory understanding of the organization and its commitment to ESD and to sustainability. The next step was to design the questions for the interviews and the plan for the casual conversations with the employees at UX. This process was guided by the main research themes that emerged from the literature reviewed. It was important not to lose sight of the research questions as ultimately the main purpose of collecting data is to obtain information that would provide answers to the research enquiry. Since the study of ESD hinges upon behavioural change, I carried out observations at UX in order to record any instances of existing behaviours and practices that assist in attaining sustainability as well as to identify behaviours and practices requiring change. The table below lists the data collection tools applied for each of the research themes:

LR: Literature reviewed DOC: UX documents INT: Interviews CONV: Casual Conversations OBS: Observations	
Themes of the Study	Data Collection Tools
Type of Organisation	
Commitment to ESD	DOC, INT, CONV, OBS
Staff development programmes	INT, CONV
Staff initiatives	DOC, INT, CONV
Characteristics of ESD	
The strands in ESD	LR
Constraints and Opportunities:	
➢ Legislation	LR, DOC, INT, CONV
➢ Financial, social and environmental considerations	LR, DOC, INT, CONV

De Bono's Thinking Skills Programmes	
Thinking Skills	LR
De Bono's thinking programmes	LR
Applicability of de Bono's thinking programmes to:	
➤ The design of employee training	LR, INT, CONV
➤ ESD	LR
➤ A sustainable lifestyle	INT, CONV
Employee Training	
Staff development programmes for SD	LR, INT, CONV
Skills needed for sustainable lifestyle	LR, INT, CONV
Design process of needs based employee training	LR, INT, CONV
Behavioural Change, Social Transformation, Institutional Change	
Empowerment skills	LR, INT, CONV
The role of a change agent	LR
Social transformation and Institutional Change:	
➤ The employees at their workplace	INT, CONV, OBS
➤ Transfer of behaviour changes beyond the workplace	INT, CONV

Table 3: Data Collection Methods

The above theme and data collection methods table was also used to create the questions-methods matrix which has already been presented and discussed in section 3.7 of Chapter Three.

4.3.3 The Interview Questions

As highlighted in the previous chapter, securing interviews with UX employees was one of the major challenges experienced in my research study. Trying to convince employees and contacts at UX to volunteer 30-40 minutes of their time proved time consuming and at times demoralising. Eventually, a total of seven employees accepted to take part and be interviewed. However, the sample is not a representative one of employees at UX since the interviewees held posts of a similar level at the University. This was indeed a great pity as my study would have been much richer had a wider array of employees in different roles accepted to take part. My views on this point and my interpretation of it will be discussed in the next chapter.

The first section of the interview covered the demographics and interviewees were asked to complete the section themselves at the start of the interview. Apart from their gender and age, I felt it was relevant to my study to seek demographic information about which department the interviewees worked in and the position they held. This information enabled me to assess the level of representativeness my research sample carried. I was also keen to know how long each interviewee had been working at UX and whether they resided locally. This information would shed light onto the depth of the employees' relationship with the university as well as its local community, both of which are key factors in sustainable principles at work and beyond and formed the basis of my study.

Demographics			
Gender: Male/Female			
Age Group: 18-29	30-45	46-59	60-75
Position:			
Dept/Section:			
Number of Years Working at UX:			
Resides locally: Yes/No			

Table 4: Demographics

The rest of the interview plan was divided into five sections that covered the five key themes I had identified for my research study. As discussed in Section 3.2.5 of Chapter Three, I have incorporated some of the thinking tools from de Bono's thinking programme DATT in the wording of a few of the interview questions. The name of the thinking tool used is included in italics at the end of the interview question where applicable. Their relevance to the research enquiry is explained in Chapter Five, Section 5.3. The five sections of the interview plan are presented below:

Theme 1 – Type of Organisation
1a. What do you know about UX's commitment (if any) to ESD?
1b. Were you ever offered training in ESD through Staff Development Programmes or through any other means?
1c. Do you know about any ESD training for UX staff?
1d. Were you ever invited to participate in any staff initiatives (competitions, fairs, etc.) on sustainable development?
1e. Have you ever heard of any sustainable development initiatives for UX staff?

Theme 2 – Characteristics of ESD
2a. From your experience at UX what factors would need to be considered when an organisation (such as UX) decides to commit to ESD? *CAF*
2b. Can you list any pluses and minuses (Constraints and Opportunities: Financial, Social and Environmental Considerations) UX would need to address before embarking on such a path towards SD? *P.M.I.*

Theme 3 – De Bono's Thinking Skills Programmes
3a. Are you aware of any thinking skills/problem-solving/decision-making training for UX staff? (i) If so, were you invited to attend? (ii) Did you attend any?
3b. If UX staff are equipped with such skills, do you think it would influence their role in (i) their involvement in designing training programmes (having their say through staff forum), and (ii) leading a more sustainable lifestyle (at UX and elsewhere)?

Theme 4 – Employee Training
4a. Should UX organise ESD Programmes for members of staff, (i) list the people involved/affected? And (ii) how would they feel (what would their position be on the matter)? *O.P.V.*
4b. What factors should be kept in mind when designing ESD Programmes for UX staff? *CAF*
4c. Can you list 3 main aims/goals/objectives you consider key when designing ESD Programmes for UX staff? *A.G.O.*
4d. What do you think are the skills you require that would enable you to lead a (more) sustainable lifestyle? Can you prioritise the 3 most important skills? *FIP*

Theme 5 – Behavioural Change; Social Transformation; Institutional Change
5a. List the three skills you consider most important for UX staff to acquire for them to become sufficiently engaged in a process of change for sustainable development (empowerment). *FIP*
5b. What would the consequences be of having UX staff involved in the design of ESD programmes? *C&S*
5c. In your opinion how can UX embark on creating institutional change? (What would be required for such a process to take place?)
5d. List three key elements that ESD programmes should have for UX staff to be able to extend the behavioural change towards sustainable development beyond the UX work setting. *FIP*
5e. Can you identify alternatives to ESD for UX staff that would successfully bring about staff behavioural changes and an institutional change for the attainment of sustainable development goals? *A.P.C.*

Table 5: The Interview Plan

The full interview plan that was used to conduct the semi-structured interviews with research participants from UX is to be found in Appendix 3.

4.3.4 The Casual Conversations Plan

As expected, in securing participants to carry out a casual conversation with, I encountered the same challenge as I did with the interviews. In order to adhere to my research time plan as best I could, I was compelled to carry out two casual conversations since trying to find more research participants was taking up too much time. The two employees who accepted had different backgrounds and roles though both had a keen interest in the topic of my research study. Through my conversations with them, I was able to fill in the gaps of information which had not emerged through the interviews, yet, were needed for me to be in a better position to meet my research aims. I used the same set of demographic questions as those for

the interviews and provided them in written format at the start of the casual conversations for the participants to complete themselves.

		Interviews	Casual Conversations
Gender	Male	5	2
	Female	2	0
	Total	7	2
Age	18-29	2	0
	30-45	1	1
	46-59	3	1
	60-75	1	0
	Total	7	2

Table 6: Demographics Data for the Interviews and Casual Conversations
Age & Gender

		Interviews	Casual Conversations
Position/Role	Senior Management	1	
	Middle Management	1	1
	Lecturer	2	1
	Researcher	2	
	Administration		
	Technical	1	
	Support		
	Total	7	2
Dept./Section	Institute of Energy & Sustainable Development	2	
	Information Technology & Media Services	1	
	School of Computer Science & Informatics	1	
	Library & Learning Services	1	
	People & Organisational Development Directorate	1	
	School of Engineering & Sustainable Development	1	
	School of Architecture		1
	Estates Management		1
	Total	7	2
Years at UX	0-3	4	0
	4-6	3	1
	7-10	0	0
	10+	0	1
	Total	7	2
Resides Locally	Yes	6	2
	No	1	0
	Total	7	2

Table 7: Demographics Data for the Interviews and Casual Conversations -
Employee Profile

The plan for the casual conversations was designed with the particular research participant in mind in order to guide the conversation in a manner that allowed me to tap into specific information and into the views of the participants that would feed into the key themes of my research study. With that in mind, the topics I addressed during the casual conversations with the two participants fell within the themes and sub themes below:

Theme 1 - Type of Organisation
Commitment to ESD
Staff development programmes
Staff initiatives
Theme 2 - Characteristics of ESD
Constraints and Opportunities: (a) Legislation; and (b) Financial, social and environmental considerations.
Theme 3 – De Bono's Thinking Skills Programmes
Applicability of de Bono's thinking programmes to: (a) the design of employee training; and (b) a sustainable lifestyle.
Theme 4 - Employee Training
Staff development programmes for SD
Skills needed for sustainable lifestyle
Design process of needs based employee training
Theme 5 - Behavioural Change, Social Transformation, Institutional Change
Empowerment skills
The employees at their workplace
Transfer of behaviour changes beyond the workplace

Table 8: Themes for the Casual Conversations Plan

4.3.5 Observation Points

Right from the outset of my data collection phase, on every visit to UX I carried out observations that would provide me with background information about UX as an organisation as well as show me the behaviour and practices of employees. I followed a guide to assist me in recording data that would fit into the themes and sub themes as can be seen below:

Theme 1 - Type of Organisation
Commitment to ESD
Theme 5 - Behavioural Change, Social Transformation, Institutional Change
The employees at their workplace

Table 9: Themes for the Observations

In this section I have described the three main sources I used to collect raw data from my research context. Given that I had previously decided to make use of qualitative data analysis software, the manner with which I collected data was designed purposefully to facilitate the process of using the software. In the next section I will present the points that needed to be taken into account when working with qualitative data analysis software and the reasons why I opted to use it.

4.4 Working with Computer Assisted Qualitative Data Analysis Software (CAQDAS)

The term computer assisted qualitative data analysis software and its abbreviation to CAQDAS were coined by Lee and Fielding (1991) in Bryman (2004:418). It is sometimes referred to as qualitative data analysis software (QDAS). In view of the fact that both terms are to be found in literature on the software programmes, for the purpose of this study, I will be using both terms and their relative abbreviations interchangeably. The introduction of such software has helped qualitative researchers by carrying out the mechanical and physical tasks of note writing in the margins of transcripts, photocopying transcripts and cutting and sticking pieces of data together to form codes. "Computer Assisted Qualitative Data Analysis Software (CAQDAS) software like NVivo, helps people to manage, shape and make sense of unstructured information...it provides a workspace and tools to enable you to easily work through your information."

http://www.qsrinternational.com/what-is-qualitative-research.aspx
accessed on 04/03/15

Yet many "express doubts…or simply have an aversion to technological solutions" (Bazeley and Jackson, 2013: 6). Silverman (2013), Grbich (2013) and Yin (2014), while acknowledging that software offers the facility to search quickly through documents, count word frequency and assign codes, point out that it cannot do the imaginative thinking or conception of codes for the researcher. On the other hand, Thomas (2013:244) gives a harsher and more cynical critique of the benefits of using QDAS by stating that it leads the researcher "to the false belief that something else is going to do the hard work". It was therefore with great trepidation that I plunged into the realm of utilising software for the management and analysis of my data. Ultimately, I found comfort in the words of Wellington (2015:274) who says "Computer programs can help in the process but cannot replace the researcher's own skill, analysis, intuition and craft". I was convinced that a more efficient and precise manner of storing raw data and coding would not only enrich my study but also enable me to develop my own research skills without losing my identity and what I bring into the research study. Nonetheless, I quickly learnt that similar to any new user of a software programme, I had to spend a significant period of time familiarising

myself with its basic functions by viewing online tutorials. It was also necessary to gain a better understanding of how QDAS is best applied to my research. Bazeley and Jackson (2013:7) identify four most common concerns about the impact of computerization on qualitative analysis. These are: (i) computers can distance researchers from their data; (ii) the dominance of code-and-retrieve methods may exclude other methods; (iii) computers will mechanize analysis making it lean towards quantitative or positivist approaches; and (iv) computers can only support grounded theory methodology.

Mindful of these potential pitfalls, I considered their implications on my own research study. Since my research context deals with the attitudes, decisions, actions and behaviour of employees, I did not think that the use of QDAS would distance me from the information provided by my research participants because the very nature of the questions was based on seeking an insight into their personal and professional lifestyle. Hence, there was an inextricable connection between myself as the researcher and the research participants. Whilst I did use the code-and-retrieve method, I also kept an open mind when visiting the research context in order to obtain as much background information as possible. I did this by reviewing documents published by UX as well as through personal observations of various areas and buildings within UX. The number of research participants in my study is sufficiently small to allow for a more in-depth qualitative analysis of the data collected from the interviews and casual conversations. This means that I did not run the risk of my data analysis drifting into the quantitative analysis terrain. Most importantly, as I have argued in Chapter Three, I believe that my study has elements of grounded theory particularly so in the data coding and analysis stages. Indeed my decision to use qualitative software goes beyond a simple desire to resort to technical assistance for managing my data; it fits within the theoretical and conceptual framework of the study as a whole. Hence I agree with Coffey and Atkinson (1996:172) that the "aim is to incorporate many of the key tasks of grounded theory strategies". Since data analysis requires methodical procedures, Coffey and Atkinson (ibid) believe that there is "every advantage in incorporating such memo writing within the use of computing software". Yet, they warn that qualitative research would not be enhanced if researchers believed that the computer software "substituted for the intellectual work of analysis". I personally found that the software gave me the structure I

needed on a practical level when dealing with vast volumes of data. It suited me in that I felt it decluttered my 'work space' thus freeing up my thought processes for the actual reflecting, planning and interpreting of the data. I found the arguments raised by Bryman (2004:418-419) insightful when making my decision to work with NVivo as the selected QDAS. Having designed my interview questions, casual conversation plan and observations framework, and established that I would utilise QDAS to store, manage and analyse the raw data collected, it was important to consider steps required before its analysis commenced.

4.4.1 Preparing Data for Analysis

Raw data in qualitative research can be difficult to explore in a systematic and meaningful manner. It tends to be voluminous and complex because it is an account of the views of the research participants and the observations of the researcher. Indeed, with qualitative data, as Payne and Payne (2004:36) rightly point out, "the process is more complex and lies at the heart of the research, even when it is planned also to use computer software". As discussed in the previous section of this chapter QDAS assists the researcher to organise and expedite the coding process. This was one of the main drivers behind my decision to use NVivo software for my research study. I share the views put forward by Coffey and Atkinson (1996: 168) when they cite Weitzman and Miles (1995:11) that the "potential of word processors for analytic purposes is restricted, and it is necessary to go from the word processor to more specialized programs in order to explore those files in more productive ways". I therefore set out to digitally record the interviews, take handwritten notes during the casual conversations and my observations at UX. The handwritten notes were immediately inputted into a word processor. This raw data was stored on a separate computer in order to ensure it remained protected. The copies of the original data were used as working copies in order to avoid the risk of damage or corruption of the original raw data. A further copy of the working copy was kept stored on an external hard drive. The raw data was catalogued and indexed into clearly labelled separate folders for each research participant.

4.4.2 Recording and Transcribing

Each of the interviews was recorded after seeking consent from the interviewees. It is not uncommon for research participants to feel uneasy when being recorded.

Fortunately, this was clearly not the case with the interviewees at UX as they all appeared relaxed and responded to the interview questions freely and openly. This could partly be because semi-structured interviews give research participants the opportunity to "develop ideas and speak more widely on the issues raised by the researcher" (Denscombe, 2010:175). Another reason could be that I had engaged in some email contact with each research participant before the interview took place which may have helped to break the ice and make us acquainted with each other.

Following each interview, I carried out the laborious and time-consuming task of transcribing the recording. This was done as soon as it was possible in order to ensure that the tone and meaning of the actual interview were captured in the written text on word documents. Each research participant was given a code to retain anonymity and both the audio recording and the transcribed text saved in an assigned folder.

The casual conversations were not digitally recorded. Instead brief notes were kept during the conversation in order to maintain a casual and free flowing conversation. The notes were later inputted into a word processor as a word document which was then sent to the research participant to verify that the contents truly reflected the views as expressed by the participant during the conversation held with the researcher. Similarly, once the research participants approved the text format account of the casual conversation, the conversations were coded for anonymity and stored in assigned folders. I found the guidance offered by Payne and Payne (2004:37), Mason (1997:113) and Denscombe (2010:275) particularly useful when carrying out these vital steps of preparing my raw data for analysis.

4.4.3 Content Analysis of UX Documents

Whilst content analysis is mostly applied in quantitative analysis, it does feature in qualitative research too. Bryman (2004:392) cites work of Beharrell (1993), Giulianotti (1997), Aitken (1998) and Seale (2002) to demonstrate the applicability of qualitative content analysis of documents. For the purposes of my research study, I have chosen to rely largely on Grbich's (2013: 190) explanation of content analysis as a:

> "systematic coding and categorising approach …to explore large amounts of existing textual information in order to ascertain the trends and patterns of

words used, their frequency, their relationships and the structures, contexts and discourses of communication."

Anderson and Arsenault (1998:101-102) in Cohen, Manion and Morrison (2010: 474-475) suggest that content analysis can demonstrate the relative frequency and importance of certain topics. Yet Cohen, Manion and Morrison (ibid) argue that other important features of content analysis include the "examination of the interconnectedness of units of analysis (categories), the emergent nature of themes and the testing, development and generation of theory". Content analysis was a means of complementing and supporting data I gathered through the data collection methods employed in my study. One of the key areas in my research inquiry was the exploration of the level of commitment, if any, of UX towards sustainability and ESD. From the initial informal conversations I had carried out with a few employees about my research topic, it became apparent that there seemed to be a strong belief, within the culture of UX as an organisation, that it is indeed significantly committed to sustainable development. This continued to emerge throughout my set of interviews, as will be seen in section 4.6 of this chapter, with employees relying on UX's policy documents and the corporate strategy document to support their belief in its commitment to sustainability. Conducting a content analysis at its simplest level on these documents was therefore necessary in the hope of gaining insight into what the texts actually did say and to explore any possible links with the emerging codes and themes in my data.

4.5 Coding and Research Themes

Miles and Huberman (1994) in Wellington (2015:260) provide a valuable and practical guide to data analysis in qualitative research by suggesting a three stage process: 'data reduction', 'data display' and 'conclusion drawing'. NVivo software is a form of categorical indexing that turns "data into a resource which can be accessed in various ways, according to various purposes" (Mason, 1997:111). Furthermore, it helped me at the data reduction stage through its drag and drop facility for coding and sorting data into my main research themes. Coding and retrieving text from transcribed interviews and notes from casual conversations and observations at the research context could be done manually. However, I have to agree with Mason (1997:112) that it "is much facilitated by the use of custom designed computer software packages". Grbich (2013:261) identifies useful skills required by the

researcher during the coding stage. These are: (i) a broad view – seeing the data in the wider context; (ii) theoretical sensitivity – linking data to theory for interpretation; (iii) a love for ordering – yet ability to accept that not all data fits neatly; (iv) an unfazeable personality – when the messy data ends up fitting into many nodes; and (v) a good memory – to recall where you have come across something similar elsewhere in the data. Furthermore, Wellington (2015:261) admits that "the activity of analysing qualitative data is often more messy and complicated than this". He in fact proposes a six-stage process: (i) Immersion; (ii) Reflecting; (iii) Taking Apart/Analysing Data; (iv) Recombining/Synthesizing Data; (v) Relating and Locating Data; and (vi) Presenting Data. NVivo offers excellent features that organise, assemble and display the data in various graphical formats. In spite of this, I found the NVivo features on visually displaying data most challenging since, whilst they seemed easy to master, I did encounter problems in displaying my data as I would have wished.

I adopted a combination of *a priori* (pre-established) and *a posteriori* (emerging from data) for categories to be used in the analysis of my data (Wellington, 2015:267). The five main research themes and their sub-themes were pre-established through careful consideration of my research aims and research questions. These were inputted into NVivo software in the form of nodes as can be seen below:

Nodes\\1.Type of Organisation
Nodes\\1.1 Commitment to ESD – Known
Nodes\\1.2 Staff Development Programmes on Sustainable Development
Nodes\\1.3 Staff Initiatives on Sustainable Development
Nodes\\2.Characteristics of ESD
Nodes\\2.1 The Strands in ESD
Nodes\\2.2 Constraints and Opportunities
Nodes\\3. De Bono's Thinking Skills Programmes
Nodes\\3.1 Thinking Skills
Nodes\\3.2 de Bono Thinking Skills Programmes
Nodes\\3.3 Applicability of de Bono's Thinking Skills Programmes
Nodes\\4. Employee Training
Nodes\\ 4.1. Staff development programmes for Sustainable development
Nodes\\4.2 Skills Needed for Sustainable Lifestyle
Nodes\\4.3 Factors when designing ESD for UX staff
Nodes\\4.4 Three aims of ESD for UX staff
Nodes\\4.5 The Process for the Design of Needs Based Employee Training

Nodes\\5. Behavioural Change and Social Transformation
Nodes\\5.1 Skills Required for Empowerment
Nodes\\5.2 The Role of a Change Agent
Nodes\\5.3 Social Transformation

Table 10: NVivo Nodes for the Research Themes

The transcripts of the interviews as well as the notes from the casual conversations were uploaded as sources of data in NVivo so that the data was accessible for coding them to the nodes for each of the research themes. Through the drag and drop facility in NVivo, I was able to code the data and create new child nodes (sub themes) when a new idea emerged from the data – *a posteriori*. However, before doing so, I needed to revisit my thinking behind the ontological and epistemological matters of my research study. I agree with Mason (1997:114) that failure to do so during the coding (indexing) stage is "effectively engaging in technique without philosophy, or procedure without strategy".   Mason (ibid: 114) argues that ontologically a researcher needs to be "clear about what kinds of phenomena [your] categories are supposed to represent or constitute instances of". Epistemologically, Mason (ibid: 114) suggests a researcher needs "to think carefully about how [your] indexing categories represent instances of these ontological phenomena". As discussed in Chapter Three, the process I used, that is, of the coding being led by the data has its roots in work done by Glaser and Strauss on grounded theory.

After viewing online tutorials and obtaining some guidance from a friend who had experience of using QDAS, I felt sufficiently confident to carry out the indexing of my data by creating nodes and child nodes in NVivo. Nodes and child nodes are the themes or categories which began to unfold and take shape at this stage of the study. I did my utmost to avoid straying from my research aims during this process and I engaged in a great deal of forward thinking in order to consider what "each bag or slice of categorized chunks of data will look like…because it can help you to make workable initial decisions about the scope and shape of your categories" (Mason, 1997:127).

Overall, coding data proved to be a detailed and time consuming task but I did hope that this somewhat monotonous, mechanical phase in my research would lead to the more exciting phase of identifying trends in my findings and links to my research questions – the ultimate aim of what I set out to achieve at the start of my research

study and what Miles and Huberman (1994) refer to as the 'conclusion drawing' stage.

4.5.1 Type of Organisation

Through this theme I wished to gain an understanding of the relationship the research context (UX) had with sustainability, sustainable development and education for sustainable development. I have carried out content analysis of documents published by UX in order to discover its position as an institution. Through the interviews, casual conversations and on site observations, I was able to explore the views and perceptions of employees on UX's commitment and engagement with sustainability issues.

4.5.1.1 Commitment to ESD

Here interview participants were asked to identify measures that they are aware of which UX takes (if any) in relation to its commitment to sustainability issues. The following table presents a list of the measures that the UX employees who were interviewed identified:

1.1 Commitment to ESD
1.1.01 Green Impact
1.1.02. Environmental Champions Network
1.1.03 Corporate Strategy Theme
1.1.04 IESD (Institute of Energy & Sustainable Development)
1.1.05 Sustainability Officer & Estates
1.1.06. Research
1.1.07 Teaching
1.1.08 Operations
1.1.09 Information for Staff
1.1.10 Participation in National Events
1.1.11 Learning at Work Week

Figure 2: Respondents' Views on UX's Commitment to Sustainability

4.5.1.2 Staff Development Programmes on Sustainable Development

I was interested in finding out whether UX offers any training to its staff on sustainability issues particularly since in its Corporate Strategy it lists sustainability as one of the university's core themes. Interviewees provided me with their views and knowledge about employee training on sustainable development as listed below:

1.2 Staff Development Programmes on Sustainable Development
1.2.01 HR department
1.2.02 Staff Induction
1.2.03 Relevance to Role
1.2.04 Personal Interest
1.2.05 Green Impact and Learning at Work Week Talks
1.2.06 Modules for Students
1.2.07 Disjointed Approach
1.2.08 Senior Management
1.2.09 Not offered ESD
1.2.10 Not aware of any ESD for staff
1.2.11 Sustainability Officer

Figure 3: Respondents' Awareness of Staff Development Programmes on Sustainable Development at UX

4.5.1.3 Staff Initiatives on Sustainable Development

It was interesting for me to get to know whether UX had any initiatives on sustainable development that were offered to its staff, as an informal mode of ESD. Therefore, I asked the interviewees whether they were aware of any such initiatives and whether they were invited to them or attended any. Their knowledge and views are listed in the table below:

1.3 Staff Initiatives on Sustainable Development
1.3.01 Green Impact
1.3.02 Initiative Overload

1.3.03 Blanket Invitation
1.3.04 Never Invited to Staff Initiatives
1.3.05 Some UX Staff Initiatives

Figure 4: Respondents' Awareness of Staff Initiatives on Sustainable Development at UX

4.5.2 Characteristics of ESD

Any new initiative taken by an organisation requires a high degree of strategic planning and forward thinking. A commitment to sustainable development requires a major shift in the entire operations and functioning of an organisation. This would undoubtedly require some form of employee training.

4.5.2.1 The Strands in ESD

For my second key theme, through the discreet use of two of de Bono's thinking tools: Consider All Factors (CAF) and Plus, Minus, Interesting (P.M.I.), I asked interview participants to identify factors that UX would need to consider before committing to ESD in order to gauge their own understanding of what ESD entails.

2.1 The Strands in ESD
2.1.01 Key Factors to be Considered by UX
2.1.02 Senior Management Commitment
2.1.03 Staff Engagement
2.1.04 Provision of Information, Incentives to Staff
2.1.05 Relevance to Job Role or Personal Lifestyle
2.1.06 A Plan with Goals

Figure 5: Key Factors to be Considered by UX Before Committing to ESD

4.5.2.2 Constraints and Opportunities

I delved deeper into the participants' insight into ESD commitment and its implications by asking them to list any constraints and opportunities that UX would need to address as part of this process to commit to ESD. Their responses are listed below:

2.2 Constraints and Opportunities
2.2.01 Legislation
2.2.02 Financial
2.2.03 Social
2.2.04. Environmental
2.2.05 Reputation
2.2.06 Institutional Barriers (Internal)
2.2.07 Curriculum
2.2.08 Sustainability Officer & Institute of Energy & Sustainable Development
2.2.09 Student Experience

Figure 6: Constraints and Opportunities Identified by Respondents

4.5.3 De Bono's Thinking Skills Programmes

I have a research and professional interest in the application of de Bono's thinking programmes to ESD and wished to explore the relevance of thinking skills to the design of ESD programmes for employees.

4.5.3.1 Thinking Skills

Interview participants were asked whether they were aware of or had been invited to attend any staff development training on thinking skills. The respondents identified the provision of some training in 'soft skills'.

3.1 Thinking Skills
3.1.01 Soft Skills Training Provision

Figure 7: Soft Skills Training Provision to UX Staff

4.5.3.2 De Bono's Thinking Skills Programmes

It was hoped that interview participants would have some awareness or knowledge about thinking skills programmes such as those by Edward de Bono. However, it became apparent throughout my interviews that they had no knowledge or information about this theme and, consequently, I was unable to collect data on it.

3.2 De Bono's Thinking Skills Programmes
3.2 De Bono Thinking Skills Programmes – no data available from respondents

Figure 8: Respondents' Awareness of de Bono's Thinking Skills Programmes

4.5.3.3 Applicability of De Bono's Thinking Skills Programmes

Despite the seeming lack of awareness of de Bono's thinking skills I was still keen to explore the views of the interview participants on the concept of having thinking skills training infused in staff development programmes and whether this would lead to improved employee engagement in the design of their own training programme and/or an improved sustainable lifestyle. Subsequently I set up nodes on these three sub themes as follows and assigned coding references from the interviews and casual conversations accordingly.

3.3 Applicability of de Bono's Thinking Skills Programmes
3.3.01 The design of employee training 3.3.02 ESD 3.3.03. Sustainable Lifestyle

Figure 9: Applicability of de Bono's Thinking Skills

4.5.4 Employee Training

If ESD does take place within a work setting, then it is likely that it would be provided under the guise of employee training and staff development. It was therefore essential for my research to explore the views of the research participants on employee training about sustainable development.

4.5.4.1 Staff Development Programmes for Sustainable Development

Through the use of de Bono's thinking tool, namely, Other People's Views (O.P.V.), I asked the research participants to reflect upon who would be impacted through the introduction of such training and how these people would feel. Through this sub theme I wished to encourage the participants to reflect upon the strategic impact such an initiative would have on the various employees across UX. They identified the employees listed below as the ones who would be most affected by an introduction of ESD at UX. Research participants were also asked to put themselves

106

in the shoes of the employees they identified to try and list how such employees would feel about the prospect of employee training on ESD for UX employees. This information is presented in the table below.

4.1 Staff Development Programmes for Sustainable Development
Nodes 4.1.01 Employees Affected
4.1.01.1 All Employees
4.1.01.2 Academics & Researchers
4.1.01.3 Admin + Support + Technical Staff
4.1.01.4 Senior Management
4.1.01.5 HR & Staff Development Department
4.1.01.6 IESD
4.1.01.7 Estates & Library
4.1.01.8 Green Impact Team
Nodes 4.1.02 Viewpoints of Affected Employees
4.1.02.1 No Awareness & No Interest
4.1.02.2 Uncomfortable & Annoyed
4.1.02.3 Reluctant & Resistant
4.1.02.4 Supportive
4.1.02.5 Willing to take lead
4.1.02.6 Feel forced
4.1.02.7 Feel it's part of their Role

Figure 10: Respondents' Views on Which Staff Would be Affected by the Introduction of ESD for Employees at UX

4.5.4.2 Skills Needed for a Sustainable Lifestyle

Since my research study aims to explore ways of designing needs based ESD programmes for employees in a manner that would provide them with improved skills to lead a more sustainable lifestyle, I asked the research participants to identify the three most important skills they felt they needed in order to attain improved sustainable lifestyle choices. I did this through the use of another of de Bono's thinking tools, First Important Priorities (FIP). The table below presents the participants' responses:

4.2 Skills Needed for a Sustainable Lifestyle
4.2.01 Ability to Adopt New SD Lifestyle & Maintain Consistency
4.2.02 Social & Moral Responsibility
4.2.03 Ability to Consider Alternatives
4.2.04 Ability to Be Empowered to Make Changes
4.2.05 Ability to Communicate ESD to Others
4.2.06 Have all the Skills
4.2.07 Resources not Skills
4.2.08 Support from UX
4.2.09 Not Feel Isolated
4.2.10 Ability to Have More SD Information

Figure 11: Skills Needed by Respondents to Lead a Sustainable Lifestyle

4.5.4.3 Factors to be Considered When Designing ESD for UX Employees

It is my view that, for optimum employee engagement in ESD, the training programmes need to consider the views of the employees themselves. However, employees would also need to have a general appreciation of the strategic needs and implications such an initiative has on the organisation. Through the use of deBono's thinking tool, Consider All Factors (CAF), I asked the research participants to identify factors that need to be kept in mind when designing ESD for UX employees. Their ideas are presented in the table below:

4.3 Factors When Designing ESD for UX Staff
4.3.01 Needs Based
4.3.02 Periodic Review of ESD Design
4.3.03 Outcome Oriented
4.3.04 Measurable Action & Change
4.3.05 Relevant to Audience & Their Role
4.3.06 HR Responsibility
4.3.07 Building on Existing Knowledge of Audience
4.3.08 Duration of ESD training

4.3.09 Cost of ESD Training
4.3.10 Messages on Moral Ethics & Responsibility
4.3.11 Frequency & Consistency
4.3.12 Quality of Service to Students, Staff & Community Impact

Figure 12: Factors Identified by Respondents That Need to be Considered When Designing ESD for UX Staff

4.5.4.4 Three Aims of ESD Programmes for UX Employees

During the design process of any educational programme it is necessary to be able to identify what it is that one hopes to achieve through such a programme. I felt it necessary to obtain the viewpoints of the research participants as to what they feel ought to be the three key aims of an ESD programmes for employees at UX. This was done through the discreet use of de Bono's thinking tool, Aims, Goals & Objectives (A.G.O.) and the participants listed the following aims which have been coded into nodes:

4.4 Three Aims of ESD for UX Staff
4.4.01 Staff Understanding & Knowledge of SD
4.4.02 Translating Understanding into Action & Change
4.4.03 Ability to Impact Wider Sustainability Agenda
4.4.04 Teaching Practical Green Measures
4.4.05 Transfer Practical Green Skills Beyond Workplace
4.4.06 Relevant to Audience & to Context
4.4.07 Genuine Senior Management Commitment
4.4.08. Staff Engagement
4.4.09 Limit Training Time
4.4.10 Enjoyable
4.4.11 Clear Outcomes of Training

Figure 13: Aims of ESD for UX Staff Identified by Respondents

4.5.4.5 The Design Process of Needs Based Employee Training

Respondents were asked to identify what would be the most effective and suitable medium in order to design employee training on sustainable development that would be needs based. Their responses are listed below:

4.5 The Process for the Design of Needs Based Employee Training
4.5.01 Relevance to Role
4.5.02 Senior Management Commitment
4.5.03 Staff Forums
4.5.04 Provide Incentives to Maintain Motivation

Figure 14: Process Identified by Respondents for Needs Based Employee Training

4.5.5 Behavioural Change, Social Transformation, Institutional Change

I feel very passionate about behavioural change because, in my opinion, unless people are sufficiently motivated and prepared to make changes in their daily decisions and actions, most scientific and technological inventions being developed for a more sustainable world would not become favourable alternatives to people's current practices. It is therefore my view that any form of employee training needs to be mindful of the need to address: (a) behavioural change on an individual level; (b) institutional change on an organisational level; and (c) social transformation through the transfer of sustainable practices to the community and society beyond the workplace.

4.5.5.1 Engagement and Empowerment Skills Employees Require for Their Participation in a Process of Change for Sustainable Development

By means of de Bono's thinking tool, First Important Priorities (FIP), I sought the viewpoints of the research participants on the three key skills they deemed necessary for UX employees to acquire for them to become actively engaged in a process of change towards sustainable development. The list of key skills identified by the participants is presented in the table below:

5.1 Skills Required for Empowerment
5.1.01 Knowledge and Understanding of ESD
5.1.02 Authority to Act
5.1.03 Provision of Incentives
5.1.04 Motivation
5.1.05. Capacity and Ability

5.1.06 Soft Skills and Thinking Skills

5.1.07 UX Staff Are Already Equipped with the Skills

5.1.08 Organisational Support

5.1.09 Practical SD Skills

5.1.10 Highlight Relevance of SD to Their Life

Figure 15: Respondents' Identification of the Empowerment Skills Required for Employees to Engage in Sustainable Development

4.5.5.2 Researcher's Role as a Change Agent: Employee Involvement in the Design of ESD Training

Upon being asked to reflect and propose the possible consequences, through the discreet use of another de Bono thinking tool, Consequence & Sequel (C&S), of having UX employees involved in the design process of ESD programmes, the research participants highlighted the following:

5.2 The Role of a Change Agent

Nodes 5.2.01 Staff Involvement in ESD Training Design

5.2.01.1 Positive and Needs Based

5.2.01.2 Critical Evaluation of ESD Training

5.2.01.3 Integrated Bottom-Up and Top-Down Approach

5.2.01.4 Led By HR

5.2.01.5 Higher Buy-In and Sense of Ownership

5.2.01.6 May Result in Lengthy Process

5.2.01.7 Understanding of Need to Design Their Own Training in ESD

5.2.01.8 Staff Require Decision Making Training First
5.2.01.9 UX Boundary Levels for SD Action

Figure 16: Consequences of Employee Involvement in ESD Design Process Listed by Respondents

4.5.5.3 Behavioural Change at the Workplace and Beyond

I was eager to obtain the views of the research participants on what they considered to be key elements that needed to form part of an ESD employee training programme in order for employees to be the agents of change within the organisation as well as enabling them to transfer the newly acquired skills beyond their workplace. The suggestions made by the participants are presented below:

5.3 Social Transformation

Nodes 5.3.01. Social Transformation for employees at Their Workplace

5.3.01.01 The Need for Knowledge and Understanding

5.3.01.02 Holistic and Integrated Across UX

5.3.01.03 Build on Work of Sustainability Officer and IESD

5.3.01.04 Use Tried and Tested Change Management Methods

5.3.01.05 Strong and Frequent Communication

5.3.01.06 Present and Make Change Relevant

5.3.01.07 Communicate the Vision of Change

5.3.01.08 Trust Judgement of Staff

5.3.01.09 Change Needs to Be Supported by Sound Scientific Knowledge

5.3.01.10 Led by Senior Management

Nodes 5.3.02. Transfer of Behaviour Changes Beyond The Workplace

5.3.02.01 Inclusion of Generic Home Messages and Examples

5.3.02.02 Encourage Skill Transfer

5.3.02.03 Present the Benefits of Behavioural Changes

5.3.02.04 Linking Behavioural Changes to School Curriculum

5.3.02.05 Present Moral and Ethical Obligations

5.3.02.06 Include Scientific Reasons for Need of Behavioural Change

5.3.02.07 Practical Support From UX

5.3.02.08 Make Links Between SD at UX and the Home

5.3.02.09 UX to Make Links with Local Community

5.3.02.10 A Culture of Commitment and Engagement

Figure 17: Respondents' Identification of Key Elements in ESD for Employees That Would Enable Behavioural Change

4.5.6 Alternatives to Employee Training on ESD

Social research is commonly faced with the issue of bias particularly when interviews are used as a data collection method. Payne and Payne (2004:29) argue that it is "less easy for qualitative research to invoke transparency as a defence against accusations of bias". It is therefore good practice for a social researcher to engage in reflectivity and reflexivity since in "qualitative work, each setting is treated as unique,

and the research process acknowledges the uniqueness of the researcher's own involvement with the informants" (Payne and Payne, 2004:30). Having considered recommendations by Wellington (2015: 87) on the need for researchers to "be sensitive to and to be aware of our own biases, prejudices and preconceptions…as part of the requirement for our own 'positionality' to be included in a thesis…" I endeavoured to convey my own research interests to my research participants. ESD clearly forms the basis of my research interests and this may be regarded as a bias in the manner with which I carried out my data collection through the interviews. With this in mind, I sought suggestions from the interview participants on what they deemed to be effective alternative routes to ESD programmes for UX employees in order to attain more sustainable practices. To maintain as much objectivity as possible for this final interview question, I used de Bono's thinking tool, Alternatives, Possibilities and Choices so that the wording of the question would not run the risk of what Payne and Payne (2004:29) refer to as "question bias" where questions "are badly phrased". Through this question, I was able to stimulate the thinking of the interview participants by steering them away from the key topic in my research: ESD in employee training. As will be discussed in detail in the next chapter, it was surprising to find that most of the interview participants held a firm belief that ESD would be the most effective route for UX employees to commence their path towards a more sustainable lifestyle both at their workplace and in their personal and community life.

4.6 Emerging Trends

In this chapter I have presented the steps required when collecting, storing, managing and preparing data for analysis. A large part of that process comprises coding. Coffey and Atkinson (1996:26) rightly point out that "although coding may be part of the process of analysis, it should not be thought of as the analysis in itself". The analysis and discussion of my findings will be described in the following chapter. Nonetheless, the fact that I utilised NVivo software to store, manage and code the data permitted me to engage in a cyclical reflective exercise of the overall picture of the codes (nodes) being generated from the data. For example, NVivo offers the possibility of viewing the number of coding references for each node which I found useful in order to identify common views, emerging trends or gaps in the information I

had set out to attain. The series of tree maps below, generated by NVivo are built upon the research themes and sub-themes I had identified at the outset of my study *a priori*. Moreover, they include the *a posteriori* nodes (codes) which emerged and thus provide a cursory visual representation of the data collected through the seven interviews and two casual conversations.

4.6.1 Theme 1 - Type of Organisation

4.6.1.1 Commitment to ESD

It is evident that the research participants are of the opinion that UX has a commitment to ESD and sustainability because it is one of the themes in the Corporate Strategy of UX with CONV008 making ten references to the document and INT005 and INT007, referring to it twice.
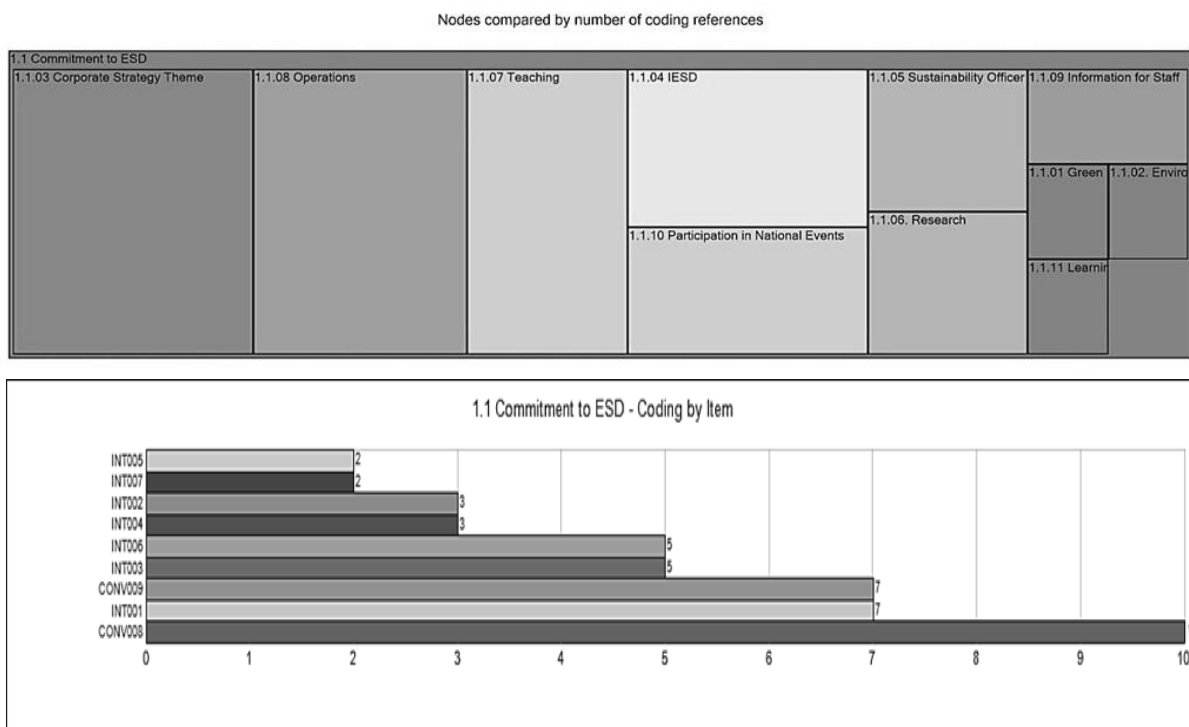
Figures 18 (a) and (b): Emerging Trends – UX's Commitment to ESD

4.6.1.2 Staff Development Programmes on Sustainable Development

Most of the research participants were not offered any ESD training by UX and hence were not aware whether such training did exist for UX employees.

Nodes compared by number of coding references
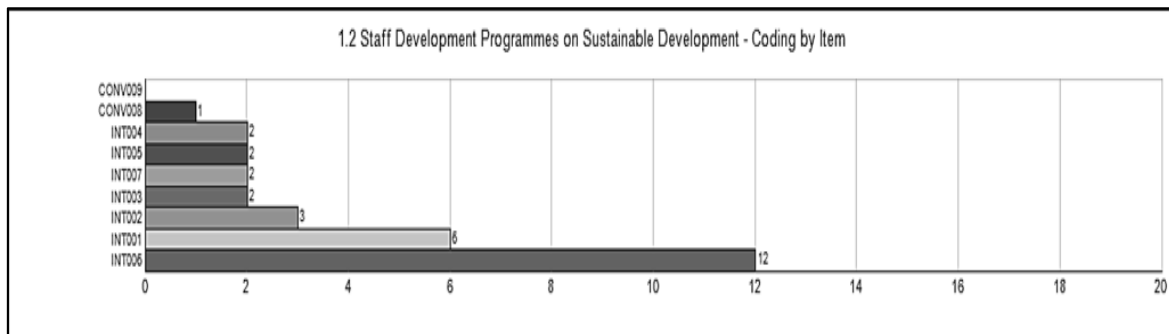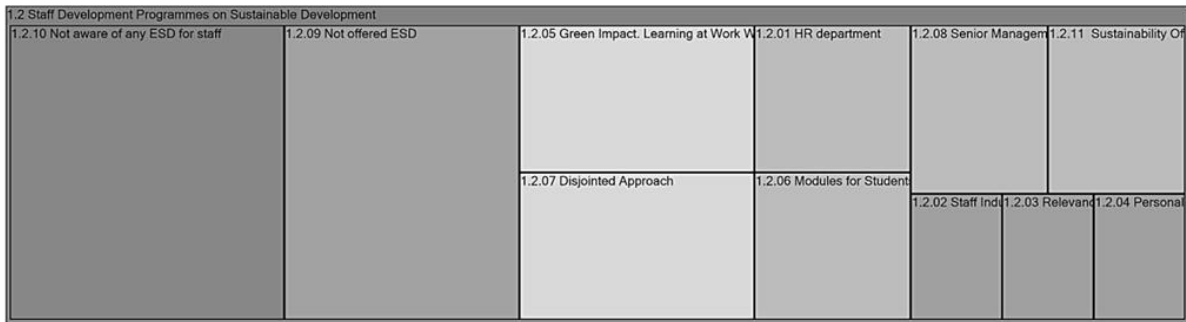
Figures 19 (a) and (b): Emerging Trends – Staff Development Programmes on Sustainable Development at UX

4.6.1.3 Staff Initiatives on Sustainable Development

The prevalent initiative for UX employees on sustainability mentioned by research participants was the organisation's participation in the Green Impact project run in UK higher education institutions by the National Union of Students (NUS).

Nodes compared by number of coding references
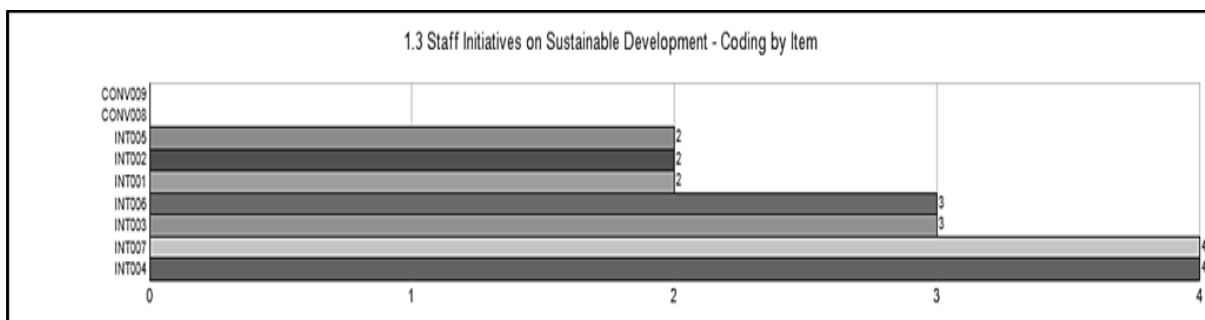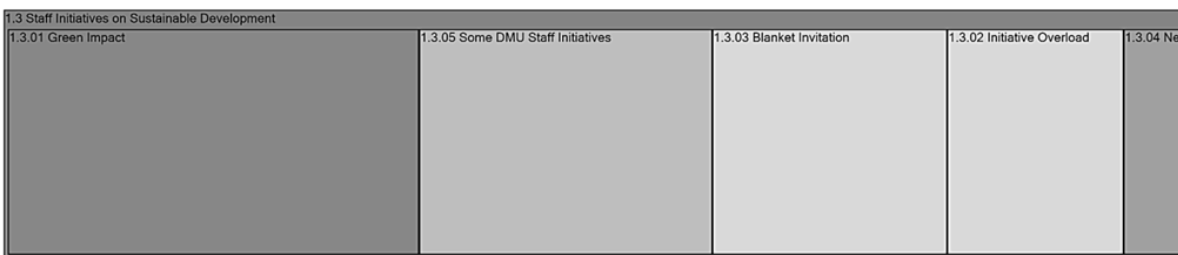
Figures 20 (a) and (b): Emerging Trends - Staff Initiatives on Sustainable Development at UX

4.6.2 Theme 2 – Characteristics of ESD

4.6.2.1 The Strands in ESD

Upon being asked what factors UX would need to consider before embarking on a commitment to sustainable development and ESD, the three factors mentioned most frequently by the research participants were staff engagement, senior management commitment and the need for it to be relevant to the role of employees.
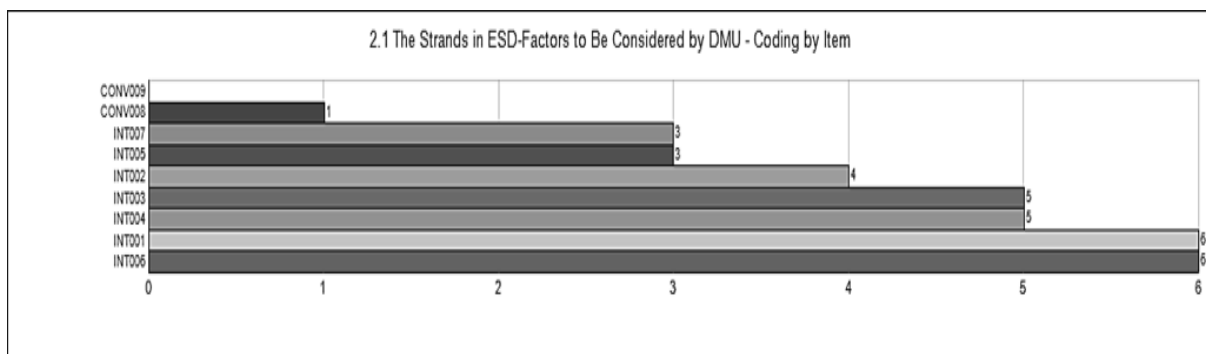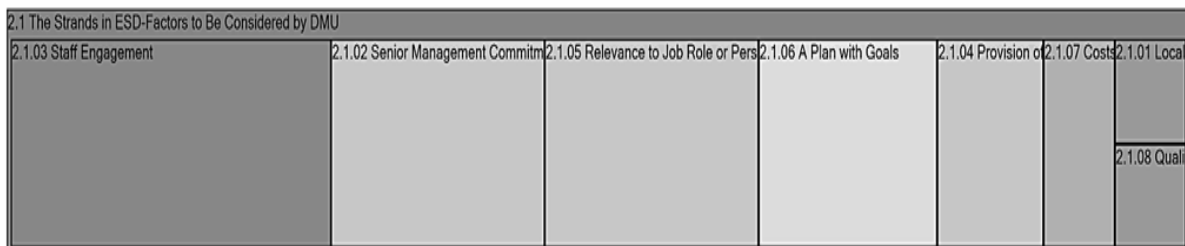
Figures 21 (a) and (b): Emerging Trends – Factors to be Considered by UX before Committing to Sustainable Development

4.6.2.2 Constraints and Opportunities

Internal institutional barriers and costs were identified as two main constraints to implementing ESD and sustainable development at UX whilst social benefits and the organisation's reputation were listed as the main opportunities.

Nodes compared by number of coding references

2.2 Constraints & Opportunities						
2.2.06 Institutional Barriers (Internal)	2.2.02 Financial	2.2.03 Social	2.2.05 Reputation	2.2.04. Environmental	2.2.01 Legislation	
				2.2.07 Curriculum	2.2.09 Student	2.2.08

2.2 Constraints & Opportunities – Coding by Item

Item	Value
CONV009	1
INT005	4
INT001	4
CONV008	4
INT007	5
INT002	5
INT003	5
INT004	11
INT006	16

2.2 Constraints and Opportunities - Coding by Item

Item	Value
2.2.8 Connection Sus	1
2.2.9 Student Experi	2
2.2.1 Legislation	4
2.2.7 Curriculum	5
2.2.5 Reputation	9
2.2.4. Environmental	10
2.2.3 Social	12
2.2.2 Financial	15
2.2.6 Institutional	17

Number of coding references

Figures 22 (a), (b) and (c): Emerging Trends – Constraints and Opportunities for UX

4.6.3 Theme 3 – De Bono's Thinking Skills

4.6.3.1 Thinking Skills

Most research participants reported being aware of or having been invited to and attended soft skills training organised by UX for its employees.

Nodes compared by number of coding references

3.1 Thinking Skills
3.1.01 Soft Skills Training Provision
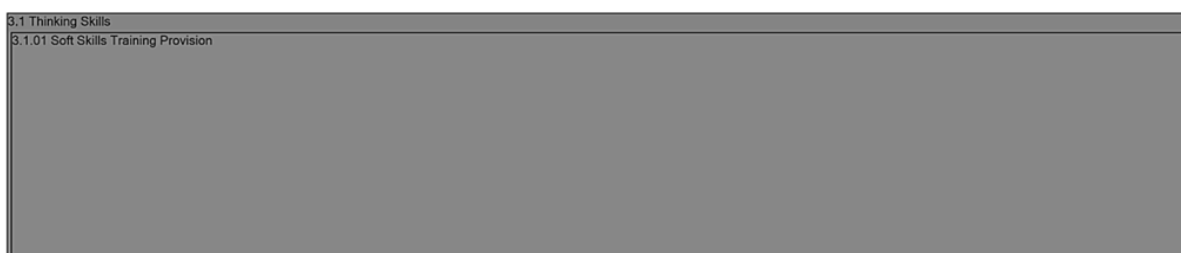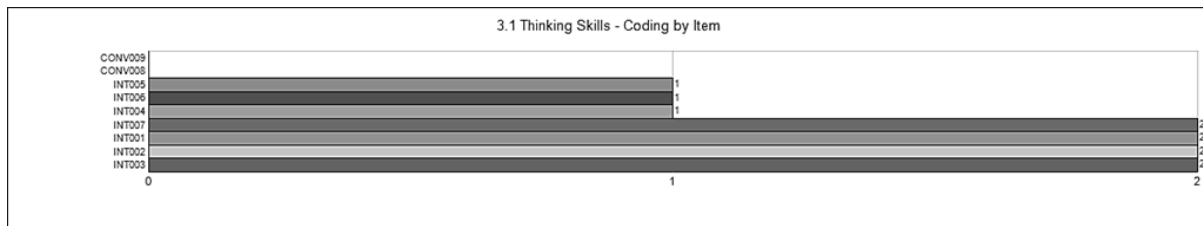
Figures 23 (a) and (b): Emerging Trends – Thinking (Soft Skills) Skills Training at UX

4.6.3.2 De Bono's Thinking Skills Programmes

Following initial trials and conversations I had decided not to ask about de Bono's thinking skills exclusively but rather merge it within the more generic terms, namely, thinking skills, decision making skills or problem-solving skills. These were addressed in the previous sub-theme. Hence no data was gathered from the interviews and casual conversations I carried out at UX.

4.6.3.3 Applicability of de Bono's Thinking Skills Programmes

The research participants did have an opinion about whether the acquisition of soft skills would be influential on employees' role both in the participation of needs based employee training on ESD as well as in leading a more sustainable lifestyle. This will be analysed in detail in Chapter Five. However, only one respondent offered an opinion on linking soft skills and ESD training for employees.
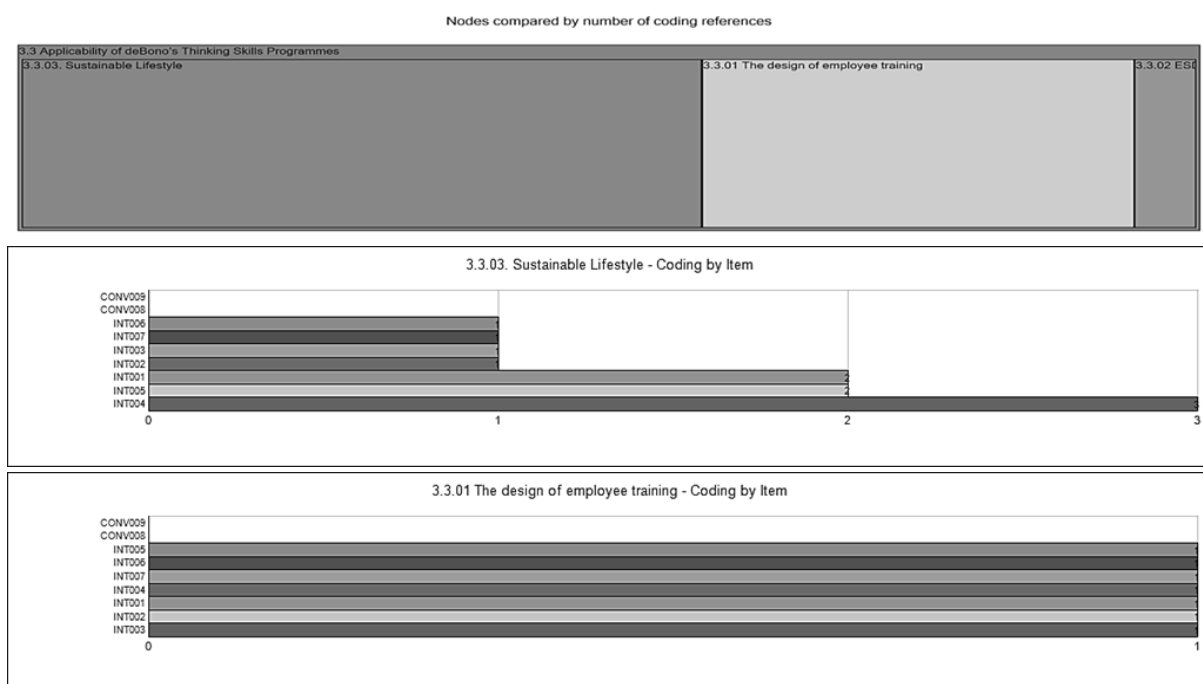
Figures 24 (a), (b) and (c): Emerging Trends – Respondents' Views on Applicability of Thinking Skills to Sustainability and to Participation in Design of Employee Training Programmes

4.6.4 Theme 4 – Employee Training

4.6.4.1 Staff Development Programmes for Sustainable Development

Upon being asked to list which employees at UX would be mostly affected should it embark on ESD training for staff, the most common suggestions were Human Resources department (which encapsulates staff development) and Estates and Library department.

Nodes compared by number of coding references

4.1.01 Employees Effected						
4.1.01.5 HR & Staff Development Dept	4.1.01.7 Estates & Library	4.1.01.1 All Employees	4.1.01.4 Senior Mana	4.1.01.6 IESD	4.1.01.2 Acader	4.1.01.3 Admin
					4.1.01.8 Green Impact Team	
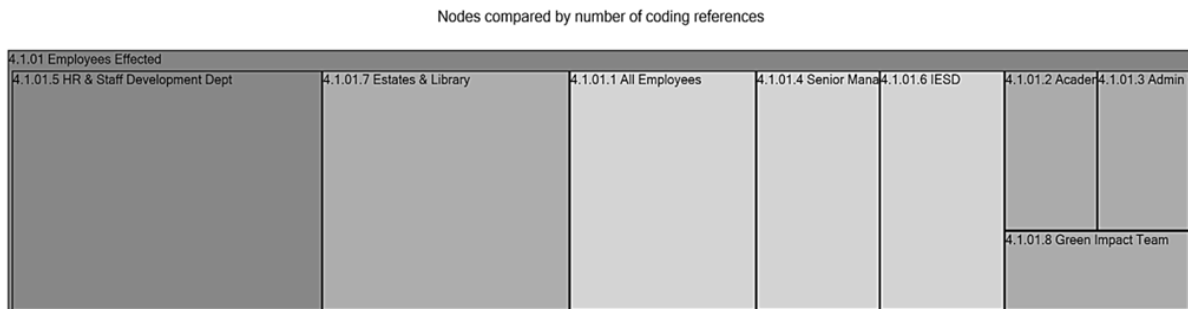
Figure 25 (a): Emerging Trends – UX Employees Affected by ESD Implementation

There seem to be mixed views about how they would envisage those employees affected by the implementation of ESD for staff at UX would feel on the matter with responses varying from feelings of being annoyed and uncomfortable to being supportive of the initiative.

Nodes compared by number of coding references

4.1.02 Viewpoints of Affected Employees					
4.1.02.2 Uncomfortable & Annoyed	4.1.02.4 Supportive	4.1.02.1 No Awareness & N	4.1.02.5 Willing to take lead	4.1.02.7 Feel its part of thei	4.1.02.3 Reluctant & Resist
					4.1.02.6 Feel forced
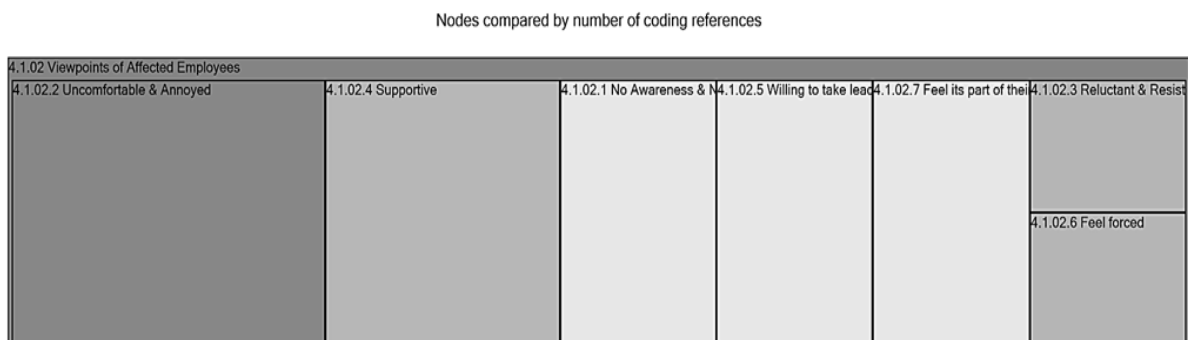
Figure 25 (b): Emerging Trends – Viewpoints of Affected Employees at UX

4.6.4.2 Skills Needed for a Sustainable Lifestyle

By using one of de Bono's thinking skills, FIP (First Important Priorities), I asked research participants to list the three most important skills they require to lead a more sustainable lifestyle. The responses were varied and presented significant contrast from identifying the ability to adopt a new sustainable lifestyle and maintain it, to

respondents claiming they already possess all the required skills.

Nodes compared by number of coding references

Figure 26: Emerging Trends – Skills Identified by Respondents Enabling Them to Lead a Sustainable Lifestyle

4.6.4.3 Factors When Designing ESD for UX Staff

Again, through the use of de Bono's thinking tool, CAF (Consider All Factors), I asked participants to identify what factors should be kept in mind when designing ESD programmes for UX staff. Relevance to the audience, needs based approach, length of training time and messages on moral responsibility were the most prevalent factors identified by the research participants.

Nodes compared by number of coding references

Figure 27: Emerging Trends – Factors Identified by Respondents That Need to be Kept in Mind When Designing ESD for UX Staff

4.6.4.4 Three Aims of ESD for UX Staff

The three key aims of ESD training programmes for UX staff reported by the research participants were to ensure that staff gains understanding and knowledge of the main facts about sustainable development, that they acquire the ability to translate the knowledge and understanding into action and change, and to teach about practical green measures that employees can adopt.

Nodes compared by number of coding references

4.4 Three aims of ESD for DMU staff						
4.4.01 Staff Understanding & Knowled	4.4.02 Translating Understanding into	4.4.04 Teaching Practical	4.4.03 Ability to Impact W	4.4.06 Relevant to Audien	4.4.08. Staff Engagement	4.4.10 Enjoyable
			4.4.05 Transfer Practical	4.4.07 Genuine Senior M	4.4.09 Limit Training Time	4.4.11 Clear Outcomes of
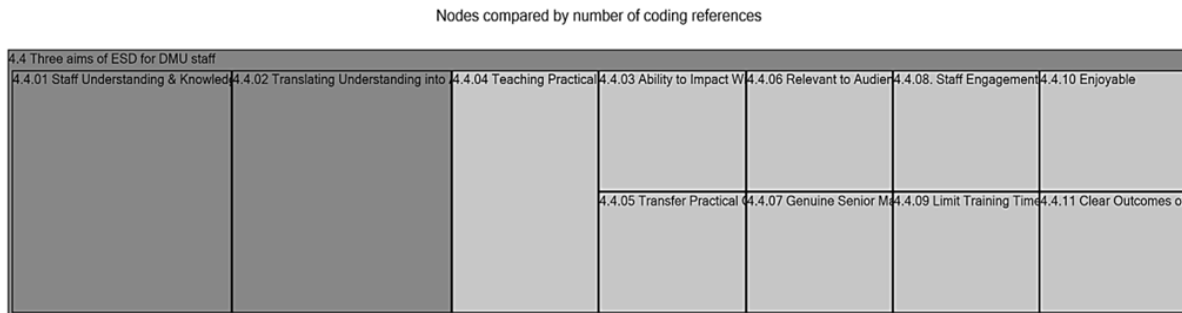
Figure 28: Emerging Trends – Aims of ESD Training for UX Staff Identified by Respondents

4.6.4.5 The Process for the Design of Needs Based Employee Training

The research participants were of the opinion that, in order to facilitate a process whereby employees participate in the design of their own employee training on sustainable development, there needs to be a platform for such discussions to take place such as staff forums, and strong support and commitment from senior management at UX.

Nodes compared by number of coding references

4.5 The Process for the Design of Needs Based Employee Training			
4.5.03 Staff Forums	4.5.02 Senior Management Commitment	4.5.01 Relevance to Role	4.5.04 Provide Incentives
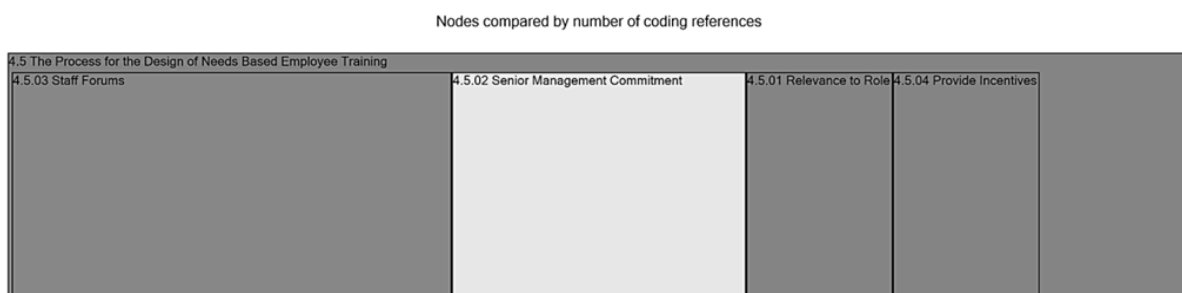
Figure 29: Emerging Trends – Elements for the Design Process of Needs Based Employee Training on ESD

4.6.5 Theme 5 – Behavioural Change and Social Transformation

4.6.5.1 Skills Required for Empowerment

I asked research participants their views on what skills would be required by employees to feel sufficiently motivated to engage in the process of change. The most commonly reported skill was the knowledge and understanding of sustainable development concepts together with motivation and good soft skills training.

Nodes compared by number of coding references

5.1 Skills Required for Empowerment					
5.1.01 Knowledge and Understanding of ESD	5.1.04 Motivation	5.1.06 Soft Skills and Thinking Skil	5.1.03 Provision of Incentives	5.1.08 Organisational Sup	5.1.05. Capacity and Abili
					5.1.09 Practical SD Skills
			5.1.07 DMU Staff Are Already Equ		
				5.1.02 Authority to Act	5.1.10 Highlight Relevanc
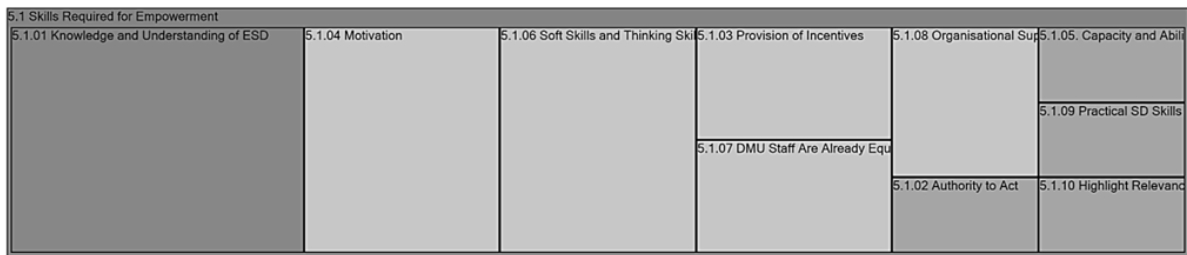
Figure 30: Emerging Trends – Empowerment Skills Identified by Respondents

4.6.5.2 The Role of a Change Agent

In answer to the question whether staff should be assisted to participate in designing their own ESD training programmes, the research participants were of the opinion that this would achieve desirable results with a sense of ownership and higher participation rate in sustainability initiatives across the organisation.

Nodes compared by number of coding references

5.2.01 Staff Involvement in ESD Training Design					
5.2.01.1 Positive and Needs Based	5.2.01.5 Higher Buy-In and Sense of Ownership	5.2.01.2 Critical Eval	5.2.01.4 Led By HR	5.2.01.7 Under	5.2.01.8 Staff R
		5.2.01.3 Integrated B	5.2.01.6 May Result		
				5.2.01.9 DMU Boundary Levels	
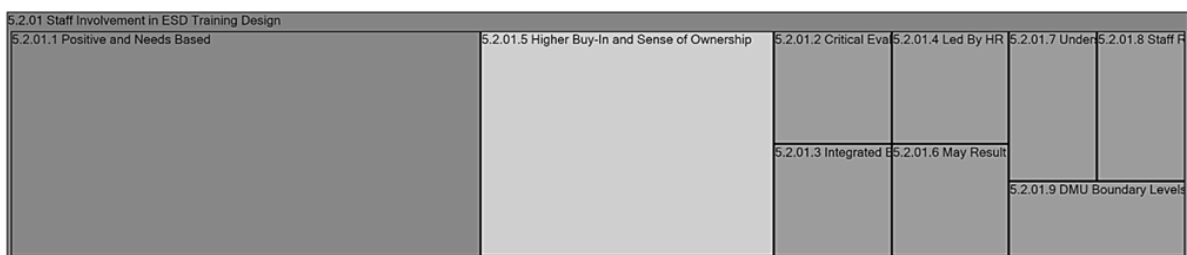
Figure 31: Emerging Trends – Consequences Identified by Respondents for Staff Involvement in Designing ESD Training at UX

4.6.5.3 Social Transformation

For institutional change to take place, the research participants reported that a holistic and integrated approach was necessary coupled with the importance of presenting and making change relevant and beneficial to UX employees and to the organisation as a whole.

Nodes compared by number of coding references

5.3.01. Social Transformation for employees at Their Workplace						
5.3.01.02 Holistic and Integrated Acros	5.3.01.06 Present and Make Change R	5.3.01.03 Build on Work c	5.3.01.05 Strong and Freq	5.3.01.01 The Need for K	5.3.01.07 Communicate t	5.3.01.09 Change Needs
				5.3.01.04 Use Tried and T	5.3.01.08 Trust Judgemen	5.3.01.10 Led by Senior M
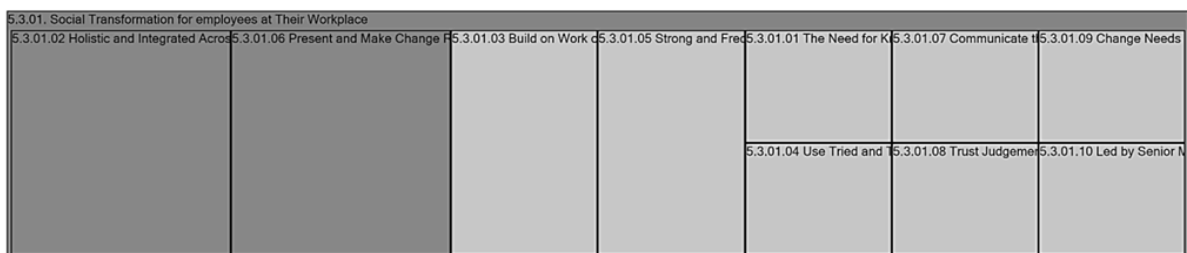
Figure 32: Emerging Trends – Requirements Identified for the Realisation of Institutional Change at UX

Another important aim for me was to gain the views of the research participants on what elements an ESD training programme for UX employees should contain in order for them to transfer the sustainable practices beyond the work setting. The most common responses were to ensure that the training programme included practical examples from the home/community setting as well as to include links between the sustainability measures at UX and those that could be adopted beyond the workplace setting.
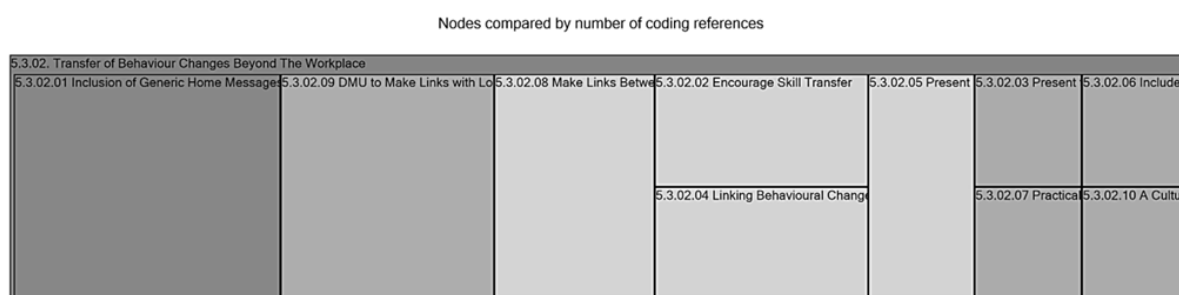
Figure 33: Emerging Trends – ESD Elements For Transfer of Sustainable Practices Beyond the Workplace

4.6.6 Content Analysis

As discussed in section 4.4.3 of this chapter, I conducted some basic content analysis of two key documents published by the organisation which served as the research context for my study. NVivo was used to conduct word searches of key themes under investigation in the research study such as sustainability, sustainable development and ESD. It was interesting to collect this data with a view to creating links with data from the interviews and casual conversations.

4.6.6.1 UX's Strategic Plan for 2011 – 2015

In section 4.6.1.1, I reported that research participants relied on the Strategic Plan of the organisation when citing UX's commitment to sustainable development and sustainability. The word trees below provide a visual representation of the frequency and context for key words from my research study. These include: (i) sustainability; (ii) sustainable development; (iii) embedding sustainability; and (iv) education for sustainable development. It is immediately apparent that the most generic of all these terms, sustainability, is to be found most frequently in the Strategic Plan with ESD being mentioned only on one occasion throughout the entire document.

Figure 34: Content Analysis of UX's Strategic Plan
Sustainability: Frequency and Context

Figure 35: Content Analysis of UX's Strategic Plan
Sustainable Development: Frequency and Context
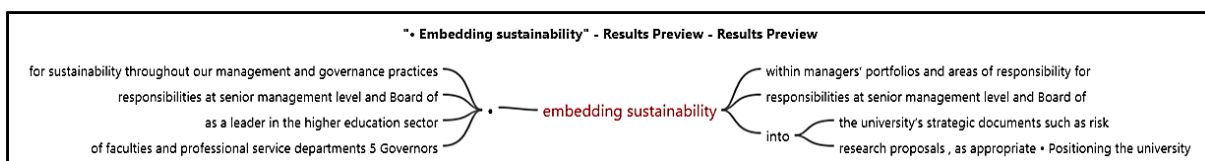
Figure 36: Content Analysis of UX's Strategic Plan
Embedding Sustainability: Frequency and Context

Figure 37: Content Analysis of UX's Strategic Plan
Education for Sustainable Development: Frequency and Context

4.6.6.2 UX's Environmental Report for 2012-2013

It was interesting yet disappointing to note that none of the research participants made reference to the Environmental Report save for one who was directly involved in its compilation. The report, published in 2014, provides a summary of the organisation's performance in the key environmental areas such as carbon emissions, waste and recycling amongst others. The term sustainable development enjoys most popularity in the Environmental Report with ESD receiving some worthy mention too.
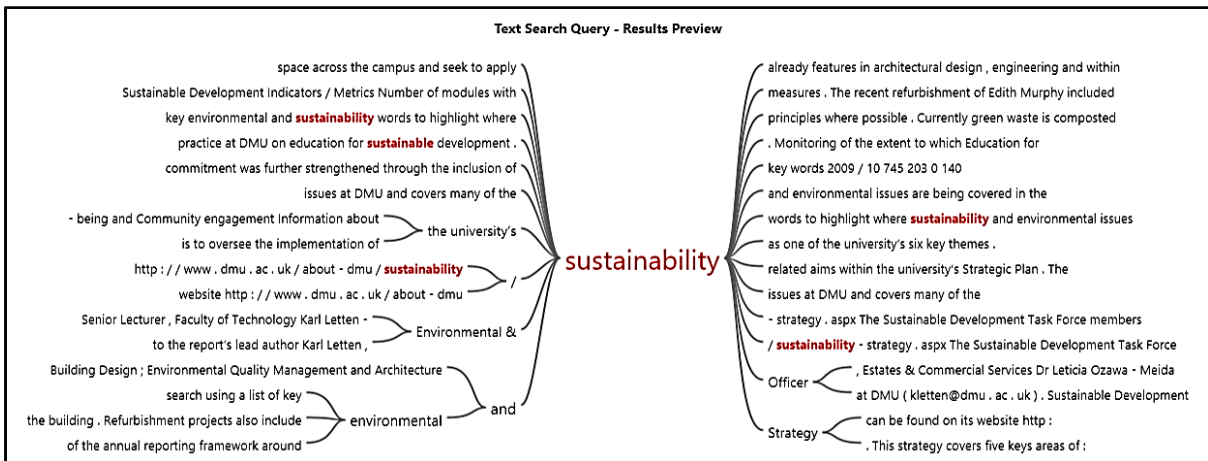
Figure 38: Content Analysis of UX's Environmental Report
Sustainability: Frequency and Context
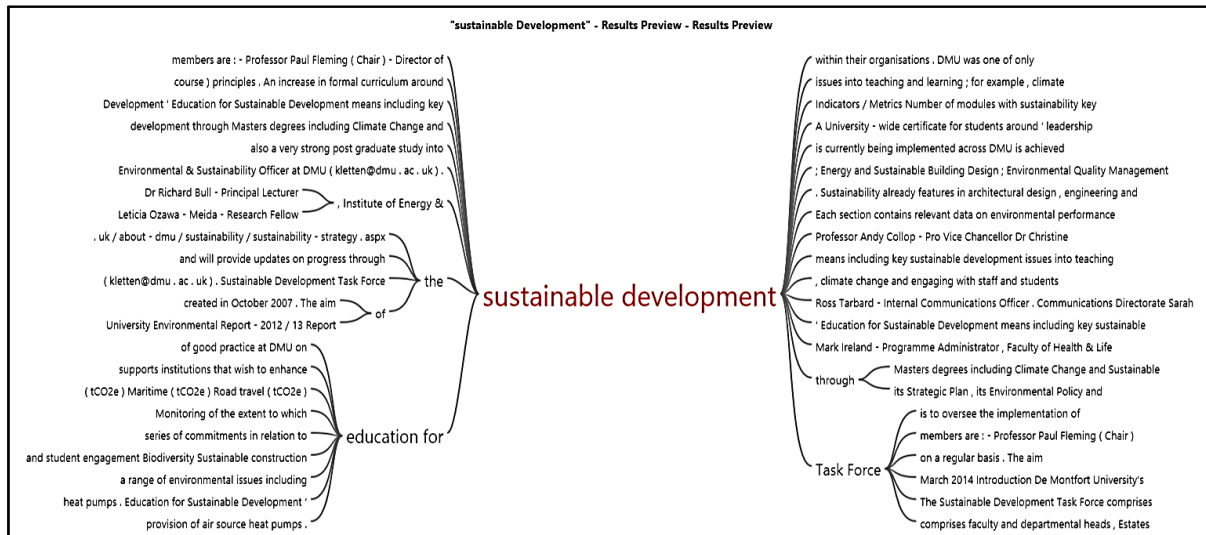
Figure 39: Content Analysis of UX's Environmental Report
Sustainable Development: Frequency and Context

Figure 40: Content Analysis of UX's Environmental Report
Education for Sustainable Development: Frequency and Context

The word trees generated with NVivo only provided me with the information I required when working with my primary data from the interviews and casual conversations. Their contextual analysis and implications or possible links with the remainder of my findings will be discussed in more depth in the following Chapter. The word trees presented above were not intended to be interpreted as stand-alone findings but as part of a holistic picture that will unfold and begin to make sense, once the analysis and interpretation of data emerges.

4.7 Conclusion

The coding process and research themes of the study, as set within the philosophical and contextual background, have been presented in this chapter. It was also possible to tease out the emerging points that surfaced through the main themes of the research study. The next chapter will discuss the analysis and interpretation of these findings.

Analysis and Discussion of Research Findings

5.1 Introduction

In Chapter Four I have presented details of the data gathered from the interviews and casual conversations together with a flavour of the content analysis of two documents published by UX. This data has its roots embedded in the research methodology and research methods I employed in my study as discussed at length in Chapter Three.

The central point from which my research journey began was my interest in a particular field that has been described in the introductory chapter of my study. My interest in ESD and the possible applicability of de Bono's thinking skills to ESD programmes for employees within an organisation created an intellectual puzzle which provided me with my main research aims and was followed by questions regarding my inquiry. Once I had established my research inquiry and formulated the research questions, I was able to determine the positionality of my research and explore its theoretical grounding. In Chapter Three I stated that my study fits within the interpretivist and constructivist approach. It sits quite well within the educational action research realm with some grounded theory elements for its data analysis component. Following consideration of the research questions, and in line with the theoretical grounding and contextual background of my research study, I was able to determine that the data collection tools which would most likely provide me with the information I needed to enable me to answer my research questions were interviews, casual conversations and some basic observations and content analysis.

The product of the process described above is what has been broadly presented in Chapter Four: Research Findings, and is seen in the diagram below.

Research Interest

- ESD and Thinking Skills
- ESD and Employee Training

Research Aims

- Explore routes to assisting employees acquire skills that will help them live a more sustainable lifestyle.
- Participate in dialogue with the research participants on their needs and expectations.
- Assist employees move from dialogue to action.
- Improve my skills as a change agent.

Research Questions

- What form should employee programmes in Education for Sustainable Development take if they are to assist employees lead a sustainable lifestyle?
- How can the use of de Bono thinking skills: (i) lead to employee participation during the course design in a manner that facilitates their own training programme? and (ii) bring about employee empowerment in order to induce positive behavioural changes necessary in achieving an improved quality of life?
- What do employees perceive as opportunities and constraints to ESD at the workplace to attain improved SD across the organisation?
- In what ways will this investigation improve my role as a change agent in order to promote people-centred sustainable development?

Methodology

- Qualitative
- Educational Action Research
- Contstructivist and Interpretivist

Data Collection Tools

- Interviews
- Casual Conversations
- Observations
- Content Analysis

Data/Findings

- Presented in Chapter Four

Analysis and Discussion

- Presented in Chapter Five

Figure 41: How the Research Unfolded

This chapter comprises three broad sections: (i) Statement of results, where I will present a summary of some practical and theoretical elements relevant to my research study; (ii) Analysis and discussion of findings which will highlight my interpretation of the key themes and how they relate to other literature; and (iii) Unexpected outcomes, deduction and generated theory following from the main conclusions of the research study.

5.2 Statement of Results

The rationale for the collection, management and preparation of data for analysis was discussed in Chapter Four. This was followed by a presentation of the main findings of my research and a flavour of emerging trends. It was possible to do so because the coding system I adopted through the use of QDAS makes the voluminous data from the interviews and casual conversations readily available for analysis and interpretation. The NVivo feature of generating 'trees' of inter-related ideas proved to be a useful tool because it prompted me to consider possible connections between codes. Bryman (2004: 420-434) provides a good introductory explanation on how NVivo works whilst Bazeley and Jackson (2013) dedicate a whole book with an explanation of how to use NVivo and its features. Notwithstanding this, from my experience of learning how to use QDAS for this research study, I found a lack of literature on how some of its features work and thus had to resort to online tutorials published by QSR International which has produced NVivo as well as informal assistance from personal and professional contacts who had worked with QDAS in the past. I have stated in section 4.4 above that learning to use NVivo was both challenging and time consuming and I cannot say that it did not have some adverse impact on my research time plan. However, I took this as part of the reflexive aspect of my research knowing that "learning new software does provide you with useful skills that may be transferable on a future occasion" (Bryman, 2004:420).

5.2.1 Coding for Interpretation

Through the coding system I carried out with NVivo software I was able to group key issues from the data in preparation for the drawing conclusions stage. Since the interview questions were open-ended, I created codes from recurring items and placed them within the main research themes I had identified after having decided on

the research questions of the study. There was also the need to create new nodes from data generated through the interview questions. For example I added the codes:

(i)   *factors to be considered when designing ESD for UX staff*, and

(ii)   *the three aims of ESD for UX Staff*

within the main research theme on *Employee Training* because, as I was designing the interview questions, it became apparent that I required the research participants' opinions on what they felt ought to be kept in mind when designing ESD training programmes as well as what they thought would be the three key aims of such programmes. Being an ESD practitioner exploring routes to the design of a needs-based ESD training programme for employees, I found the responses from my research participants which I coded under the two headings listed above helpful in my search for answers to my research questions:

- *What form should employee programmes in Education for Sustainable Development take if they are to assist employees lead a sustainable lifestyle?*

- *How can the use of de Bono thinking skills lead to employee participation during the course design in a manner that facilitates their own training programme?* and

- *In what ways will this investigation improve my role as a change agent in order to promote people-centred sustainable development?*

In another instance, for the research sub-theme, *Constraints and Opportunities (Legislation, Financial, Social and Environmental Considerations)*, I grouped responses together in the same node because there was a lack of richness or variety in the responses given by the interviewees. Nonetheless, the responses within this code gave me an insight into the views and opinions of the employees at UX which fed into one of my subsidiary research questions:

- *What do employees perceive as opportunities and constraints to ESD at the workplace to attain improved SD across the organisation?*

During the coding process, I relied extensively on the suggestions made by Bryman (2004:408-409) about the steps and considerations I needed to bear in mind. I support the point made by Huberman and Miles (1994) as cited by Bryman (ibid: 409)

that coding is not to be confused with analysis. Indeed coding is a "mechanism for thinking about the meaning of your data *and* for reducing the vast amount of data that you are facing".

5.2.2 Formative Process for Data Analysis

I followed recommendations made by Wellington (2015:260) in employing a formative rather than a summative data analysis process. Indeed, at the initial stages of my data collection, I published a paper on my reflections about the preliminary findings (Appendix 4, Mifsud, 2014). This proved to be a valuable exercise that influenced my "emerging research design and future data collection" (Wellington, 2015:260). The use of NVivo facilitated the identification of recurring themes and patterns through various features such as word trees and coding queries, some of which have been presented in section 4.6 of the previous chapter. I was able to carry out such queries at any point of my coding stage. It helped me to be reflective on the findings as well as to be reflexive about the methods employed in conducting my research study and collecting the data (Willig, 2001, in King and Horrocks, 2010:23). I was thus able to determine whether I needed to increase my efforts in gaining access to additional interviewees or whether I ought to bring in new ideas through informal conversations. It also helped me to identify what to look for in the content analysis of UX documents that would shed light onto the data I had collected, to present contrasts or draw comparisons with the data from the interviews carried out with the employees at UX.

When I had coded all the interviews and informal conversations, I spent considerable time examining and refining the nodes I had created on NVivo. I did find that some nodes could be amalgamated whilst others had become too ambiguous and required dividing into new nodes. This process, if left unchecked, could go on indefinitely due to the volume and richness of the data typically obtained through in-depth interviews in qualitative research. Nonetheless, I am mindful that, as a practitioner in the field of ESD, my own values, interests and experiences played an influential role in the decisions I took on when, where and how to bring the coding process to an end. It was important not to lose sight of the research questions and ensure that the data collected had the potential to provide me with some answers to these questions. Yet three determining factors guided me in my decision to stop carrying out more interviews with employees at UX. These were: (i) the time I had available to carry out

my research study; (ii) the availability of employees who volunteered their time to serve as research participants; and (iii) the recurrence and reappearance of perspectives and issues during interviews with employees. Indeed, I agree with Wellington (2015: 264) when he says that "a redundancy in the data eventually develops and the researcher knows that future data collection will be subject to the law of diminishing returns". Furthermore, Mason (2010:3) argues that there is very little guidance to be found in literature on what constitutes sample size in qualitative research with no explanations given on why some authors feel "that certain methodological approaches call for more participants compared to others". As I discussed in section 3.6.2, accessing research participants proved to be a challenge and time-consuming. To minimise the context variable, I opted to obtain viewpoints (and collect the data) from one organisation, UX. In this way I would not have to contend with variables of different work settings and varying organisational cultures. As a result, I had no other option but to rely on the employees at UX that offered to participate in my study.

As I pointed out earlier in this section, coding data from the interviews with NVivo offered the possibility of obtaining snapshots of the recurring views, ideas and issues that interviewees raised. In fact, after having transcribed and coded the interviews with the first five employees, I was able to detect trends, patterns and themes that had become repetitive. These five interviews formed the basis of my paper (Mifsud, 2015) where I focussed on a few of the themes from my research study. I therefore employed recommendations made by Grbich (2013:23) by "summarising supportive data for a particular aspect every 3-5 sessions of interviewing or observation". I found this method highly beneficial as, by the end of my data collection phase, I was able to reflect on interpreting and conceptualising the data. The sub-sections below are the preliminary findings from the first five interviews I carried out at UX. By that stage I had in hand a good picture of the key concepts and emerging themes that would feed into my research enquiry.

5.2.2.1: Key Factors to be Considered Before UX Commits to ESD

The five interviewees were of the view that before UX embarks on a commitment to ESD, the main factors that ought to be kept in mind are:

| Clear aims on what is to be achieved. |
| Understanding and commitment from the senior management team. |
| An assessment of the existing knowledge, skills and attitudes of staff. |
| An assessment of the process, costs and resources required for delivery of ESD training. |
| High level of staff engagement and motivation. |

Key factors to be considered before UX commits to ESD

5.2.2.2 Constraints and Opportunities

The respondents identified the following constraints and opportunities if UX implemented ESD across the organisation:

| Resistance from members of staff. |
| Lack of commitment by departments and faculties across UX. |
| Time and financial limitations. |
| Difficulty in selling the concept that ESD ought to be a priority for *all* across the organisation. |

Constraints

| Giving UX a better public profile. |
| Contributing to creating a more sustainable society. |
| Improving its position in the university league tables. |
| Increasing awareness on sustainable development issues. |
| Achieving a more efficient and healthier work environment for UX staff and students. |

Opportunities

5.2.2.3 Key Design Factors for ESD for Employees

Responses from the first five interviewees on the key factors one should bear in mind when designing ESD programmes for employees at UX included:

Ensuring that the training leads to tangible changes in behaviour.

Relevance to the role members of staff play within the organisation.

Time, funds and expertise available for ESD initiatives.

Key design factors for ESD programmes for employees
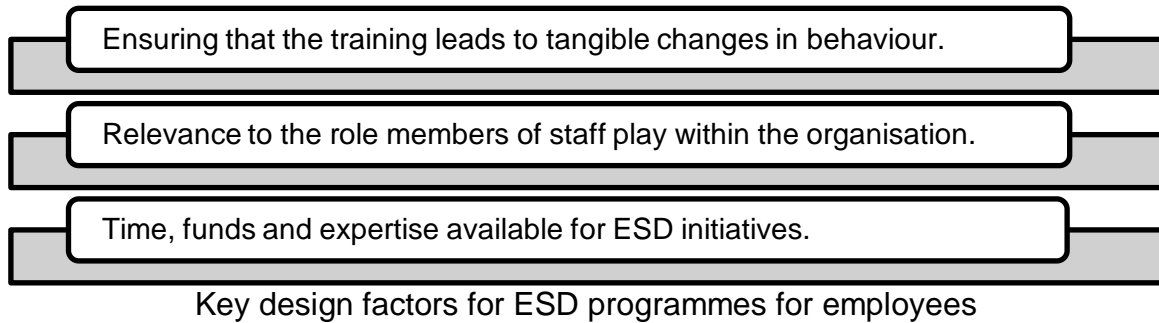
5.2.2.4 Aims of ESD Programmes for Employees at UX

The interview respondents were of the opinion that the main aims of the ESD programmes for employees at UX ought to be:

Assessing existing knowledge of UX staff and building upon it.

Assisting staff in identifying the need to lead a sustainable lifestyle.

Establishing and maintaining employee motivation and engagement.

Creating an impact.

Obtaining support from senior management.

Ensuring the training time is kept to a minimum and is enjoyable.

Aims of ESD programmes at UX
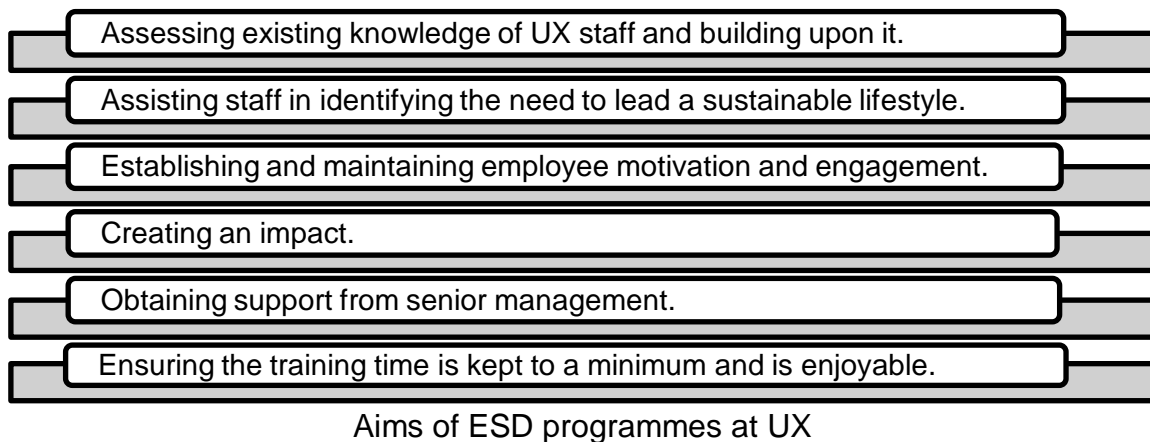
The findings presented in this section from data collated from the first five interviews I conducted at UX were the result of what Wellington (2015: 262) terms as 'decontextualizing' the data, whereby data is cut up and taken out of its context. Following from this, I recombined or 'recontextualized' the coded data in order to place it within a new context. This means that phrases were lifted from data sources (such as interviews and casual conversations), taken out of their original context and put within a new context of a group of phrases from other data sources which are similar or contrasting. I carried out this process once more when I had completed all

my interviews and yet again after conducting one final casual conversation with a research participant.

5.2.3 Revisiting the Research Questions

At this stage, it was inevitable for me to revisit my research questions because I wanted to ensure that the data I had coded into nodes in NVivo would indeed help me gain a sufficient and adequate understanding of my research enquiry. Wellington (2015:271) suggests that data which has been coded and grouped into nodes can be matched to the research questions in order for the data to "shed light on or illuminate those questions… [and] provide a structure for writing up and presenting research". Consequently, I matched the nodes to the research questions as can be seen in the table below:

	Research Questions	Themes of the Study	Node Ref. No.
1.	How can the use of de Bono thinking skills lead to employee participation during the course design in a manner that facilitates their own training programme?	• Thinking Skills • Applicability of de Bono's thinking programmes to the design of employee training.	• 3.1 • 3.3
2.	How can the application of thinking skills to the design of employee programmes in Education for Sustainable Development bring about employee empowerment in order to induce positive behavioural changes necessary in achieving an improved quality of life?	• Applicability of de Bono's thinking programmes to a sustainable lifestyle.	• 3.3
3.	What form should employee programmes in Education for Sustainable Development take if they are to assist employees lead a sustainable lifestyle?	• Staff Development Programmes for SD. • Factors when designing ESD for UX staff. • Aims of ESD for UX staff. • The design process of needs-based employee training.	• 4.1 • 4.3 • 4.4 • 4.5
4.	What do employees perceive as opportunities and constraints to ESD at the workplace to attain improved SD across the organisation?	• UX's commitment to ESD. • The strands in ESD: financial, social and environmental considerations. • Constraints and Opportunities.	• 1.1 • 2.1 • 2.2

5.	What skills (cognitive, practical, thinking, decision-making, problem-solving) are required by employees if they are to become more confident in implementing action strategies that will help them adopt a sustainable lifestyle?	• Skills needed for sustainable lifestyle.
		• Social transformation and Institutional Change:
		  ➢ The employees at their workplace.
		  ➢ Transfer of behaviour changes beyond the workplace.
			• 4.2
			
			• 5.3

| 6. | In what ways will this investigation improve my role as a change agent in order to promote people-centred sustainable development? | • UX's commitment to ESD.
• Staff development programmes on SD at UX.
• Staff initiatives on SD at UX.
• Social transformation and Institutional Change:
  ➤ The employees at their workplace.
  ➤ Transfer of behaviour changes beyond the workplace. | • 1.1

• 1.2

• 1.3

• 5.3 |

Table 11: Questions-Nodes Matrix

5.2.4 Presenting Data in Qualitative Research

I share Wellington's (2015:265) view that presenting the data "as fairly, coherently and attractively as possible" is probably the most important part of a research project since it brings together how the findings, rooted within a strong theoretical framework, have informed the research inquiry set by the researcher and how they compare or contrast to other similar work carried out in the field of enquiry. Ultimately this stage is the theory generation phase and the production of knowledge.

As a result of its significance, I found the data analysis phase a gruelling task. However, I found Wellington's recommended 'checklist' (below) quite helpful and I followed the steps listed therein.
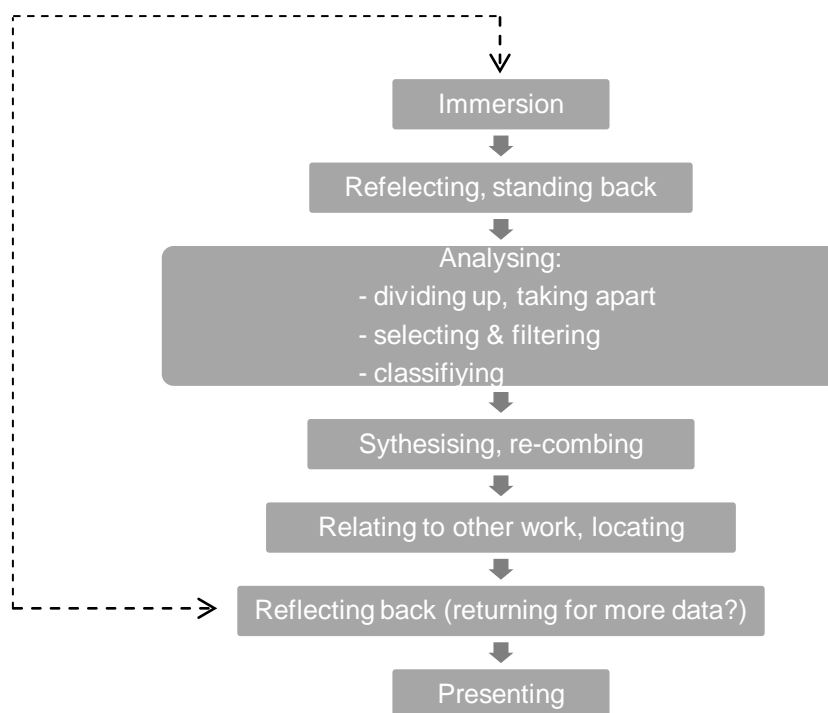
Figure 42: Data Analysis Checklist - Wellington (2015:267)

It was also necessary to take decisions on verbatim accounts from the interviews and casual conversations with my research participants, transcripts of which were very lengthy yet demonstrated richness and depth about the issues I had set out to learn about from the employees at UX. Nonetheless, it was clear to me from the start that I had to be harshly selective and thus preferred to lift short verbatim statements from two or more participants "to demonstrate the breadth of support for a point and its nature, while including … [when necessary] a lengthier statement if one of quality exists" Woods (1999:56) in Wellington (2015:266).

For this section of my research, I carried out some experimental work on using NVivo to present my data analysis; yet, if I had more training in using the software, I would have been able to tap into its features more effectively and in a shorter time too. In the next section I will discuss how I made use of QDAS during my analysis stage in order to search for patterns and themes in the data collated from my research participants to generate theory.

5.2.5 Coding and Analysis in Grounded Theory

Earlier in this chapter and in previous chapters, I have presented arguments about the benefits of using QDAS for the management of data. In this section I will present my views on the use of QDAS for grounded theory. Software for qualitative data analysis enables researchers to use codes, memos, hypertext systems, and carry out selective retrieval which makes it possible to establish "linkages of elements to be undertaken, the building of networks and, ultimately, theory generation to be undertaken" (Siedel and Kelle, 1995, in Cohen, Manion and Morrison, 2010:488). I agree with Lonkila (1995:41) when he argues that QDAS offers the researcher the possibility of generating grounded theory through the various functions available in the software. It has also been suggested by Kelle and Laurie (1995:27) in Cohen, Manion and Morrison, (2010:488) that the features in QDAS "can enhance validity (by the management of samples) and reliability (by retrieving all the data on a given topic, thereby ensuring trustworthiness of the data)".

Cohen, Manion and Morrison (2010:491) highlight a few features of the definition of grounded theory principles in that theory is: "*emergent* rather than predefined", "emerges from the *data*", and is "a consequence of, and partner to, *systematic* data collection and analysis". I believe that the analysis methods employed through the

use of NVivo fit well within these features, partially, if not completely. This is because, whilst my data analysis did include elements whereby the data itself generated the patterns and themes, as the researcher, I also adopted methods where I created research patterns and themes which I believed would be in line with my research inquiry. Mindful of Locke's (1996) critique about researchers who claim to employ grounded theory when in reality only one or two of its features have been used, I have exercised caution about my claims of adopting grounded theory in my research study. Bryman's account (2004: 401-405) of literature on grounded theory provided me with a better understanding of how the data analysis in my study fits within the grounded theory framework. Above all, after considering work by Glaser and Strauss (1967), Glaser (1996), Strauss and Corbin (1998) and Flick (1998), I am of the opinion that my work at UX and the analysis approach I adopted matches the features and facets of the varying strands of literature on grounded theory. It helped to capture the interconnected actions of everyday life of the employees at UX in relation to the topic under study because, indeed, as Glaser (1996) in Cohen, Manion and Morrison (2010:491) argues, "grounded theory is appealing because it tends to get at exactly what's going on".

This research study makes no attempt at forcing data to fit into a predetermined theory as I agree with Lincoln and Guba (1985:205) that grounded theory must fit the situation that is being researched. Consequently, as part of the iterative strategy for grounded theory, I made changes to, and/or omitted, *a priori* sub themes. Furthermore, I also endeavoured to pay more attention to the research participants' views and generate new theories from them because I did not want to compartmentalise what they had to say into pre-existing theories on the topic under study. This was of utmost importance in my study since, as has been highlighted throughout, there is a great lack of documented literature on research about employee programmes on ESD. The only research that I was able to rely on most for comparisons and contrasts, was ESD work carried out with other target groups. However, I did not wish my data to be overshadowed or skewed by this existing literature as this would have significantly diminished the value of the data gathered from employees at UX. There was also the pertinent risk that my research focus may be interpreted as being one to do with ESD within higher education curricula because my research participants are employees at a higher education institution. For this

reason, a key factor in my data analysis and theory generation was to bring to the fore a clear demarcation between current ESD initiatives and research for higher education curricula and my own research inquiry on the process for designing ESD training programmes for employees within (any) organisation – not necessarily a higher education institution.

5.3 Analysis and Discussion of Findings

Section 4.5 in Chapter Four lists the main concepts that emerged through the coding of the data from interviews and casual conversations held amongst employees at UX. In section 4.6 of the same chapter, I present an initial interpretation of the findings made possible through grounded theory with the assistance of the use of NVivo for data coding and analysis. In this section I will discuss the findings by highlighting my interpretation of the key themes and how they relate to existing literature. Explanation and interpretation in qualitative data analysis examine the patterns and regularities that lie behind the occurrence of social phenomena. As an interpretive researcher, I viewed my analysis "as a matter of providing an understanding rather than providing something that is an objective, universal truth" and any theories that are generated from my study will be value-laden rather than objective, Denscombe (2013:236). Indeed a key point that needs to be kept in mind by qualitative researchers is that "findings acquire significance in our intellectual community only when you have reflected on, interpreted, and theorized your data. You are not there as a mere mouthpiece" (Bryman, 2004:411).

It is also necessary to locate one's own data and relate it to existing work carried out by other researchers in the field of inquiry because it stimulates a process of "reflecting upon it [data] and making sense of it" (Wellington, 2015:264). In Chapter Two I have provided an overview of the literature reviewed on the topics under investigation in this research study. These are education for sustainable development, the potential application of thinking skills to ESD training programmes, and the process for the design of employee training. In this section I will therefore highlight how my categories compare and contrast with others in the literature.

5.3.1 Comparison of Categories and Themes

After having used NVivo to create nodes as discussed in sections 5.2.1 and 5.2.2 above I developed a hierarchy of codes and categories by differentiating among higher level and lower level codes, known as nodes and child nodes in NVivo. This exercise formed part of the iterative process which has been presented in section 4.6 of the previous chapter, and which helped me to check for emerging trends. I agree with Denscombe's (2013: 286) assertion that "grounded theory analysis aims to use higher level codes and categories as the basis for identifying key concepts… [which] constitute the foundations for any theory or general conclusions to emerge from the research". I was then ready to proceed with comparing themes in the data in accordance with the nodes hierarchy.

By using the Questions-Nodes Matrix in section 5.2.3 above I was able to compare the various nodes I had created (both the *a priori* and the *post priori* nodes) and reflect on the data gathered for those nodes that fed into my research questions. It was useful to follow the recommendation made by Grbich (2013:295) to "compare each data segment not only across the database with other segments but also with existing literature…and with concepts/theories that may shed light on what is emerging in terms of data groupings.*"* I found the tree map facility in NVivo particularly useful during this process and have included tree maps in most of the sections below as they give a quick and easy visual presentation of the data collected. A tree map from NVivo uses sections of different colour and size to indicate the number of coding references for each code generated from the data. The NVivo user has the option to select what data to include and from which data sources. I used the research interviews and casual conversations for the tree maps in order to have a visual that would provide me with the information I needed. Unfortunately, NVivo software does not have the facility to increase the font size of the code labels or the word wrap function commonly used in word processing software. This means that the name labels of the codes that are in the smaller sections of the tree map cannot be viewed clearly. Consequently, I have done my utmost to make clear reference to the code labels in my discussion about each of the tree maps presented in this chapter in order to ensure that the reader is able to follow my analysis discussion and refer to the tree maps with ease.

5.3.1.1 Provision of Thinking Skills Training at UX and Applicability of de Bono's thinking programmes to the design of employee training.

Research Question 1
How can the use of de Bono thinking skills lead to employee participation during the course design in a manner that facilitates their own training programme?

None of the research participants were familiar with de Bono's thinking programmes but a few had heard of his work. As a result I adapted this theme to encapsulate soft skills training since from the first two interviews it became apparent that this was a more familiar term with the employees at UX. Furthermore, my choice of to carry out exploratory work with de Bono's thinking skills stems from my experience of using this set of thinking skills programmes. It does not exclude the possibility of infusing other thinking skills into ESD for employees.

- Node 3.1.01 Soft Skills Training Provision: Mostly soft skills (not thinking skills). Four interviewees were aware of this provision and have attended whilst three stated that there is no provision at UX.

- Node 3.3.01 The Design of Employee Training: Mixed views from the interviewees about the potential benefits of thinking skills (not specifically de Bono's) to employees' participation in designing their own training programmes. Only two interviewees saw the link between employees being equipped with thinking skills and their being in a better position to feel able to participate in the design of their own training.

Being a de Bono thinking skills trainer and having carried out experimental work as an ESD practitioner on infusing his thinking skills in ESD programmes I have designed for various target groups, I was keen to explore this further. A trained thinker has the advantage of viewing information and situations more comprehensively with the ability to take a more appropriate line of action. "Thinking is the operating skill through which innate intelligence is put into action" (de Bono, 1991:46) Indeed, one of de Bono's famous quotes is "You can analyze the past, but you have to design the future". When I embarked on my research study, I wanted to explore how thinking skills could equip employees with what they need in order to engage in identifying their own training needs on sustainability and participate in the design of their own training programme. It was surprising to discover the low level of

awareness on thinking skills amongst the research participants, and their apparent inability to pick out the potential of a trained thinker to become engaged in the design of staff training programmes. The data gathered suggests that the UX employees interviewed were broadly convinced any staff training is not their remit but that of the HR department. Some expressed the view that it would be presumptuous to intervene in what is viewed as the responsibility of the HR department, whilst others shared the sentiment that they did not wish to be involved as they already had a demanding work load. Furthermore, it was worrying to find out that only four of the seven interviewees knew that UX does offer some form of soft skills training. This suggests that there may be inconsistencies in the manner that such courses are offered to members of staff. Mehlmann and Pometun (2013: 84) highlight this need by arguing that "there is a need for an adequate pedagogy: methods and tools to convey the vision and engage the creativity of employees in the search for ways to move towards the vision". Furthermore, they make a valid point when they say that in this respect "a workplace is no different from any other educational arena" (ibid: 84). It is therefore useful for HR departments to consider ESD pedagogies being used within the formal education sector when developing employee learning and training programmes for their organisation. The data highlights the belief that employees do not feel confident or empowered enough to become engaged in their training needs and that they are too busy to take charge of their own professional development. Yet UNESCO (2011: 8) explains that ESD learning refers to "learning to ask critical questions; learning to clarify one's own values; learning to envision more positive and sustainable futures; learning to think systemically; learning to respond through applied learning; and, learning to explore the dialectic between tradition and innovation". Infusing thinking skills such as those by de Bono would only aid in the ESD learning that can take place during employee training programmes. Indeed, my application of a few thinking tools in the wording of the interview questions assisted both the research participants and myself as the researcher to clarify our values, critically ask questions and explore the consequences of decisions about employee training programmes and sustainable development goals at UX.

5.3.1.2 Applicability of De Bono's thinking programmes to a sustainable lifestyle

Research Question 2
How can the application of thinking skills to the design of employee programmes in Education for Sustainable Development bring about employee empowerment in order to induce positive behavioural changes necessary in achieving an improved quality of life?

Whilst, as explained in the section above, the interviewees had only a vague awareness of de Bono's work, the responses for this theme suggest that they found it easier to make a connection between improved thinking ability and leading a sustainable lifestyle.

- Node 3.3.03. Sustainable Lifestyle: Two of seven interview participants admitted they could not "*see the relevance*" (INT002) and were "*struggling to make that connection*" (INT006). The remaining five were of the opinion, some more clearly than others, that being equipped with thinking skills would assist employees in their decisions and actions to lead a more sustainable lifestyle "*Yes they would benefit from that because if they were given training on decision making etc. they would obviously be more actively practising it rather than just using their common sense.*" INT007

Indeed the UNESCO document Roadmap for Implementing the Global Action Programme (GAP) on Education for Sustainable Development (2014:12) identifies one of the four dimensions of ESD as "Stimulating learning and promoting core competencies, such as critical and systematic thinking, collaborative decision-making, and taking responsibility for present and future generations". Morris and Martin in Stibbe (2009:157) had made similar assertions "Our contention is that learners cannot deal with the wicked problems of sustainability without learning to think and act systematically". Against this theoretical background, and inspired by the encouraging responses from UX employees taking part in my research study, I am confident that integrating thinking skills in ESD programmes would not only enhance the training for employees but would also meet the requirements of ESD as a means to bring about behavioural change.

5.3.1.3 Staff Development Programmes for SD; Factors when designing ESD for UX staff; Aims of ESD for UX staff; and The design process of needs-based employee training.

Research Question 3
What form should employee programmes in Education for Sustainable Development take if they are to assist employees lead a sustainable lifestyle?

As an ESD practitioner and a de Bono thinking skills trainer, I used the thinking tool, Other People's Views (O.P.V.) from the DATT (recently rebranded Power of Perception) thinking programme by de Bono to structure this question and create nodes from the data gathered. This required the interviewees to list the employees they envisage would be affected if UX were to introduce ESD training for all members of staff. Furthermore, they were asked to identify how affected employees would feel about such a proposition. The O.P.V. tool is a good tool to enable people to consider other people's viewpoints. It is an exploration tool (de Bono, 1997). Consequently, I felt it was a good tool to use when wording the interview question as it facilitated the process of eliciting from my research participants their views on who ought to take charge of ESD for employees and how employees within their organisation would feel about this. The tree map below for node 4.1.01, presents the responses given by the research participants.

- Node 4.1.01 Employees affected if ESD programmes for UX staff were introduced:
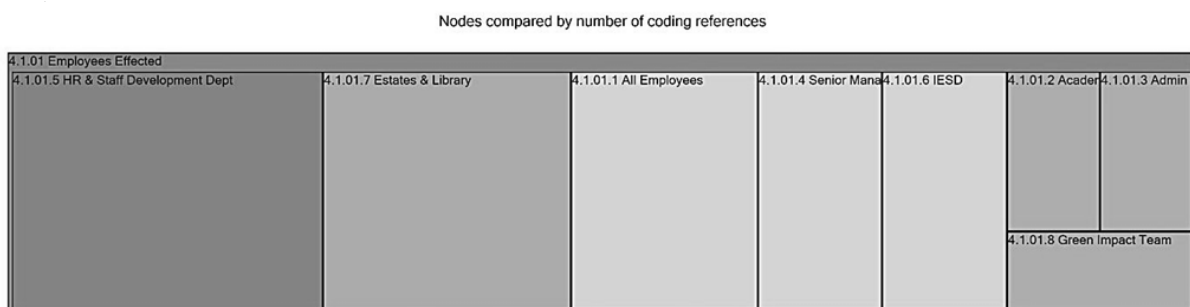
Figure 43: Employees Affected if ESD for UX Staff Were Introduced

It was very clear to the research participants that introducing ESD training programmes at UX would mostly affect the HR and Staff Development department with significant input from the Estates and Library department since the latter houses the environment and sustainability team. UNESCO's *Shaping the Future We Want* report (2014:154) highlights the potential role of HR by saying that "HR departments responsible for securing training and capacity-building for employees are not

engaged in strategic decision-making around sustainability, skills gaps and training requirements. As a result, they often struggle with a lack of knowledge on how best to train managers in sustainability." The research study results suggest that HR grapple with the issue of training on sustainability to all employees within the organisation since the respondents reported that no such training was taking place at UX. Other responses stated that all UX employees would be affected, senior management, IESD (Institute for Energy and Sustainable Development), academics, administrative staff as well as the Green Impact team. This suggests that the research participants view ESD training as a responsibility for HR and the Staff Development team to take up. It was worrying to note that they did not seem to have an awareness of the expertise of the IESD team and their value in such an initiative. The prevalent view of the UX staff I interviewed was that anything to do with staff development and training is to be exclusively taken up by the relevant department with no input on their part as individual employees at UX. It is disappointing to note that they did not feel they could potentially be part of the process whereby they would be able to identify their own training needs and shape training programmes in accordance to their needs.

- Node 4.1.02 Viewpoints of affected employees at UX:

Nodes compared by number of coding references

4.1.02 Viewpoints of Affected Employees					
4.1.02.2 Uncomfortable & Annoyed	4.1.02.4 Supportive	4.1.02.1 No Awareness & N	4.1.02.5 Willing to take lead	4.1.02.7 Feel its part of thei	4.1.02.3 Reluctant & Resist
					4.1.02.6 Feel forced
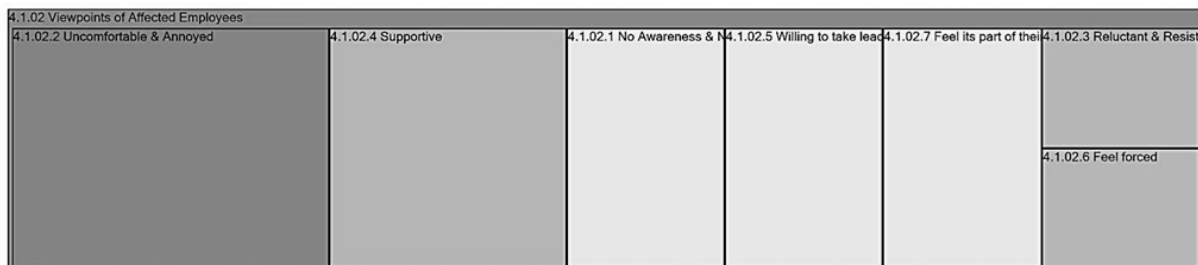
Figure 44: Viewpoints of Affected Employees

There were mixed views about how those affected would feel about the idea of introducing ESD to employees at UX. Several respondents stated that those employees would feel uncomfortable and annoyed, with one or two respondents indicating that affected employees would feel forced and be reluctant and resistant. This suggests that the research participants held a rather bleak view of how such an initiative would be received by UX employees. The sentiment expressed was mostly one that indicated the respondents thought that UX employees are either too busy or not interested, and it would be a challenge to implement ESD training for members of staff.

- Node 4.3 Factors when designing ESD for UX staff:

Nodes compared by number of coding references

Figure 45: Factors When Designing ESD for UX Staff

The interviewees were asked to identify what factors needed to be kept in mind when designing ESD training for UX staff. This question was phrased in line with another of de Bono's thinking tools, CAF (Consider All Factors) which "is the process of exploring all factors in a situation…The CAF is the prime information input tool" (de Bono, 1997). The key factors highlighted by the respondents were that the training programme needed to be relevant to the audience and their role at UX. This was followed by: (i) it ought to be needs based; (ii) the duration of the programme; and (iii) it ought to include messages on moral ethics and responsibility.

- ✓ Relevant to audience and their role: "*it needs to be relevant to the people who are going to listen otherwise they will not listen*" (INT003) and *"relevance and context"* (INT006).
- ✓ Needs based: "*I would organise these sort of cafes where members of staff from different faculties and departments can do brainstorming sessions and see what their needs are"* (INT001).

It was encouraging to note how strongly the respondents felt about having a programme that adopts a needs-based approach by being relevant to employees at UX. These findings are in line with arguments made by Epstein (2008) and Redmond and Walker (2009) which I referred to in sections 2.3.1 and 2.3.2 of Chapter Two on the importance of individualised and tailor-made programmes for employees. They also concur with Pavlova's definition that "ESD prioritizes embedding learning into locally and culturally appropriate contexts" (2012:667). Yet, conversely, responses for this code seem contradictory to the responses on who ought to take ownership of the design of ESD training programmes. This, in my view is the result of a combination of lack of confidence and sensitisation to sustainable development issues on the part of

the research participants. Notwithstanding this, supported by these findings, I believe that a needs-based training programme would strongly benefit the employees and can be made possible when employees form part of the design process and are given engagement tools to participate in such a process. The findings make it clear that the employees value the concept of needs-based and context specific training programmes on sustainable development. The next step would be to provide them with the skills to feel sufficiently confident in recognising that they are a crucial element in the design of such a programme. Their input is what would inherently make the programme design relevant to their needs and their role within the organisation.

- Node 4.4 Aims of ESD for UX staff:
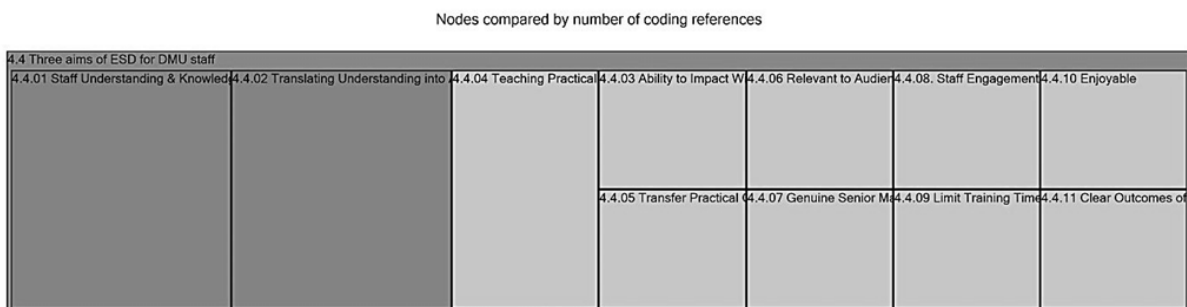
Figure 46: Aims of ESD for UX Staff

Following from the previous question, interview respondents were asked to list the three main aims that an ESD training programme ought to have. I applied de Bono's thinking tool A.G.O. (Aims, Goals and Objectives) for this interview question since it is a tool that "looks at the intention behind actions" (de Bono, 1997). Using the A.G.O. helped me to direct the interviewees to think about what they envisaged ought to be the intentions behind the prospect of implementing ESD training for UX employees. The prevalent aims identified were: (i) knowledge and understanding; (ii) moving from knowledge and understanding to action and change; and (iii) teaching employees about practical green measures they could adopt.

- ✓ Staff understanding and knowledge of SD: *"I will try to deal with people's understanding on this agenda and see people's understanding and belief, to understand the concept"* (INT001), *"to equip them with the knowledge to meet sustainability guidelines that have been set"* (INT005).

✓ Translating understanding into action and change: *"how they can translate this understanding into their practice"* (INT001), *"So the programme should do more than just inform, it should have an action element or behaviour change element somehow, somewhere. It should be designed with an action element"* (INT006).

The findings here indicate how the research participants acknowledge that it is highly probable that UX employees are lacking in knowledge and understanding of key sustainable development concepts. This is prevalent in many organisations as reported by UNESCO (2014:31) that "business and industry are now looking for more technical education and training for implementation of sustainability-related practices, such as low carbon design and production, full-cost accounting and sustainability reporting". However, the respondents are of the view that knowledge alone is not enough. Hence, an ESD training programme ought to place a strong emphasis on enabling UX employees to use that knowledge to make the required behavioural changes for them to attain an improved sustainable lifestyle. These findings helped me develop the diagram (ref. section 6.3.2) which presents the elements I suggest ESD programmes for employees ought to have, and how such programmes would fit within the overall structure and operations of an organisation. The three key elements I have proposed are a reflection of the viewpoints of my research participants, and the literature reviewed as part of my research study. They are: (i) Learning - for behavioural change; (ii) Instruction – for technical know-how; and (iii) Thinking Skills – for empowerment and engagement. In my opinion, if employees are involved in identifying their own training needs and are given the opportunity to become sufficiently engaged in the training programme design, it would be more likely to provide the knowledge, attitude, skills and behaviour required for employees to make changes to their day to day decisions and actions. However, the difficulty arises when determining the 'how' element within the ESD training programme for employees. I addressed this point in another interview question, responses to which were coded in the following node:

- Node 4.5 The design process of needs-based employee training:

Nodes compared by number of coding references
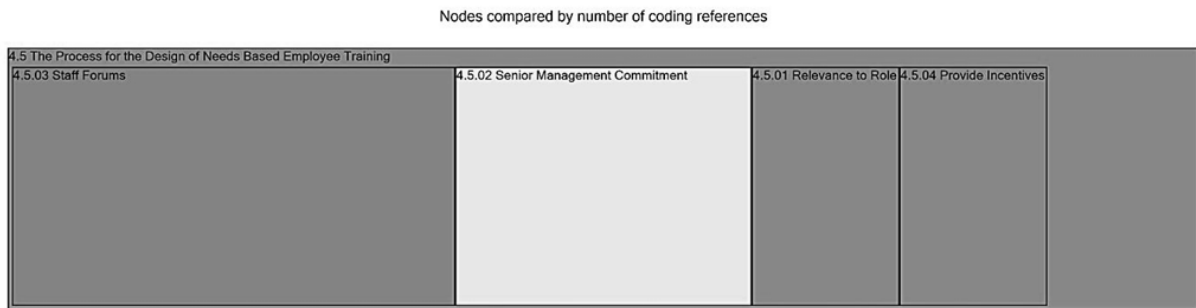
Figure 47: The Design Process of Needs Based Employee Training

✓ Staff forums: *"there is a staff survey as a platform to seek the viewpoint of members of staff at UX"* (CONV008), *"I would try to do some sort of brainstorming session"* (INT001);

"Through a staff forum, well that sort of thing, then probably yes but time is so precious that…I've been involved in a couple of staff forum things and we met once and it never happened again" (INT003);

✓ Senior management commitment: *"We also need to know that that's not at odds with top management and what they want. So there has to be a continuation right the way up the scale and that does not always happen. There is a sense of somehow we're above and beyond all that when you're up at the top management level. So vertically and horizontally it's got to be spread throughout the organisation"* (INT004).

Evidence from the data in this node suggests that the research participants are of the opinion that the most appropriate manner in which to assist UX staff to engage in training in ESD that would lead to action and change is by involving them through staff forums. UX does have a staff survey system in place (CONV008). However, from the responses of my research participants, one would conclude that it may be underutilised or not viewed as a valuable means to engage in identifying one's training needs regarding ESD. The possibility of exploring successful strategies adopted by Eco Schools through their Eco-Schools Committees and whether these could be adjusted and adopted in workplace settings is recommended. These committees are "the driving force behind the Eco-Schools process and will represent the ideas of the whole school" http://www.ecoschools.global/seven-steps/ (accessed on 12/10/15). They are led by students, and ensure regular and effective

communication throughout the entire school. They comprise students, teachers, head teacher, support staff, parents, governors and any interested and relevant members of the wider community.

Furthermore, senior management commitment was also identified as key to implementing ESD programmes leading to behavioural and institutional change. Research carried out at organisations and their commitment to sustainable development points to similar findings (Legis and Collerette, 2006; Herold and Fedor, 2008; Karp and Helgo, 2008 in Qian, 2013:78). Once again, the importance of the training programme being relevant to the role of UX staff was mentioned in this node too. Clearly, the relevance of the training is a recurring theme throughout the findings. An interesting response was one which listed the provision of incentives to employees as a way of drumming up motivation and enthusiasm. Again, this is not an uncommon tool used in various initiatives requiring behavioural change.

5.3.1.4 UX's commitment to ESD; The strands in ESD; and Constraints and Opportunities

Research Question 4
What do employees perceive as opportunities and constraints to ESD at the workplace to attain improved SD across the organisation?

In order to explore the perceptions held by the research participants about the commitment of UX to ESD and sustainable development in general, I included a question for the interviewees whereby they were asked to provide information on this theme.

- Node 1.1 UXs commitment to ESD:
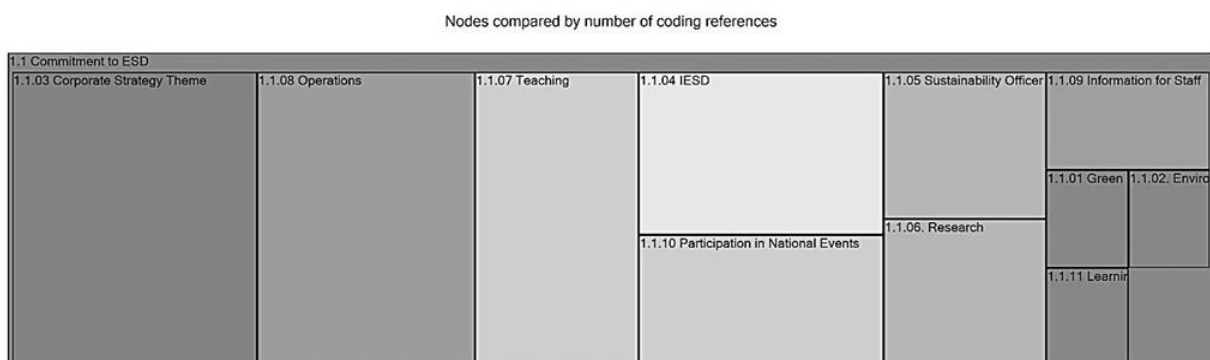
Figure 48: Respondents' Perception of UX's Commitment to ESD

Research participants attribute UX's commitment to sustainable development to the fact that it is a theme in the corporate strategy for the period within which this research study took place (UX Strategic Plan 2011-2015). This emerged very early on in the data collection phase of the study. Hence, as part of the reflexive process in my research, I felt it was necessary to carry out a basic content analysis of UX's corporate strategy document. This will be discussed in section 5.3.1.6 below. Another factor as to why they believe UX is actively working on sustainability issues is a result of the work and initiatives carried out by the sustainability team within the Estates department. The general sentiment among the respondents was that they felt reassured regarding UX's commitment to sustainability because a document makes reference to it and there is a team of people that organises sustainability related initiatives across campus. It was of concern to note that the participants holding such a perception did not appear to demonstrate a sense of ownership of the role UX ought to adopt towards sustainable development as they seemed to believe that someone else was taking care of that.

- ✓ Corporate strategy theme: "*Well UX is really committed towards environmental sustainability. If you see its strategic plan, we have one of the main themes for the University to be a top leader on environmental sustainability in the higher education sector of the UK. So it's one of the 4/5 key themes in the University's corporate strategy*" (INT001), and *"I know UX has a commitment to sustainability"* (INT005).

Interestingly, two interviewees gave insightful responses and almost expressed frustration that sustainable development is not embraced across the board at UX. Such on the ground realities are recorded in literature (Qian, 2013: 79 and Redmond and Walker, 2009:126) about organisations and their commitment to sustainability so it comes as no surprise to me that some of my research participants shared this information with me. *"The University as with all other organisations, seems to jump on the bandwagon of sustainability"* (INT003), and *"As an organisation overall I think it probably pays lip service to it but doesn't really fully integrate it"* (INT004).

Following from this point, I was keen to discover the opinions of the research participants on what UX would need to take into consideration before embarking on a

commitment to ESD and sustainable development. This data was derived from the interview question which was worded by using de Bono's CAF tool (Consider All Factors) as it prompts respondents to scan as widely and comprehensively as possible when providing their response. As can be seen in the tree map below which was generated from the NVivo node 2.1, the most common factors listed by the respondents were: (i) staff engagement; (ii) senior management commitment; and (iii) relevance to job role or personal lifestyle.

- Node 2.1 The strands in ESD:
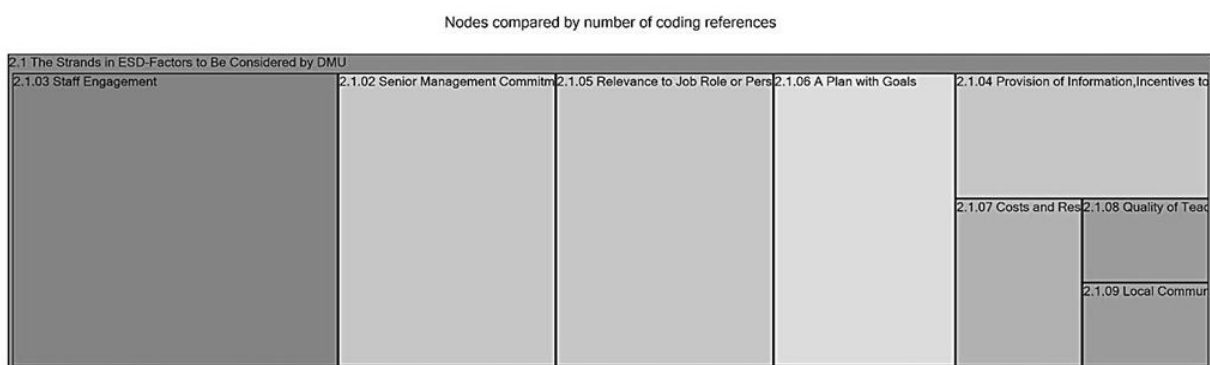
Figure 49: Factors to be Considered by UX Before Committing to ESD for Employees

✓ Staff engagement: *"we need staff engagement in the wider context at the University"* (INT001), *"the challenge is to engage them in a way where they are keen to get involved, to make it fun and make it not feel like one of those fairly useless empty gestures but something real"* (INT004), *"We need to engage more people in everyday activity somehow"* (INT006);

✓ Senior management commitment: *"we need top level commitment. The University senior leadership commitment is really important to drive any change so senior management and leadership commitment is key"* (INT001), *"if you seem to be imposing stuff from above, there's so many different ways in which you can get people's backs up and it becomes utterly counter-productive"* (INT004), *"a clear message from the top and secondly clear and sustained top-level involvement. So if they are genuinely saying we need to do this, it has to be more than just printing a poster and forgetting about it for a year"* (INT006);

✓ Relevance to job role or personal lifestyle: *"So making people aware and understand to make them realise why it is so important to achieve*

sustainability and what their role is" (INT001), *"something to relate it to the subject that is being taught in any particular module rather than leaving it up to the module leader by saying here is a new topic, dump it into your module. Well no, it doesn't work like that. You have to work at this and figure out its relevance or which pieces of it are relevant"* (INT003), *"I think there's far too many staff that see it as something that: 'has nothing to do with me, it doesn't affect me.' How do we help people understand that it matters to them personally?"* (INT006), *"the members of staff will have to keep in mind obviously that their daily duties, their daily work that they do, is not affected in any way by making that (ESD) commitment"* (INT007).

Respondents felt helpless and unable to take charge of how UX could engage in sustainable development across the entire organisation. This could potentially lead to feelings of inadequacy amongst employees, several of whom had already expressed concerns about their unrealistic work load. Indeed, it is unfortunate that adopting a sustainable lifestyle by making behavioural changes is seen as a burdensome initiative. Reflecting upon the data I gathered at UX and upon careful consideration of UNESCO's report, *Shaping the Future We Want* (2014), I believe that providing employees training on ESD with elements of thinking skills would give them the confidence needed not only to make small yet effective changes but also to become convinced of the benefits attached to making those changes. Their efforts are key to driving UX forward in its endeavours to attain the sustainability goals as set out in its documents. Indeed, UNESCO (ibid: 185) reports that "scaling up these efforts will require one of the most important success factors identified during the DESD, that of leadership. Put simply, leadership within and across education systems will be essential to sustain efforts and ensure ESD objectives are adopted and put into action". Thus the journey for UX will require leadership commitment to enable a sustained educational commitment across the board in all its learning and teaching, operations and staff development work.

- Node 2.2 Constraints and opportunities:

As a change agent with a keen interest in introducing ESD training programmes for employees, I felt it was necessary to explore what the research participants perceived as constraints and opportunities if UX were to roll out ESD training for its employees.

Nodes compared by number of coding references
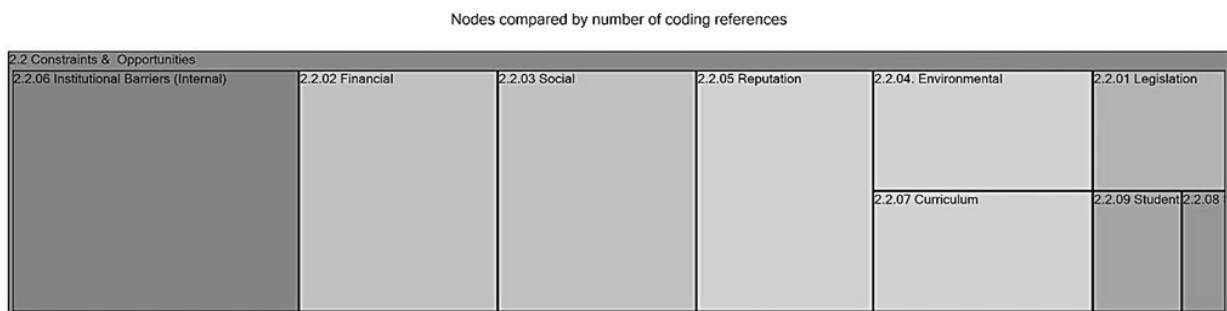
Figure 50: Respondents' Views on Constraints and Opportunities for UX

The respondents reported that the greatest barrier actually lies within the organisation itself due to lack of a collaborative and holistic approach. They expressed concern that ESD and sustainable development are not seen as the responsibility of all members of staff at UX. Their views concur with statements made by UNESCO in its report, *Shaping the Future We Want* (2014:185) when it states that "champions will still be needed, both institutional and individual, to bring together stakeholders in collaborative actions and to sustain efforts in the coming years". The evidence obtained from UX is also in line with findings from a study by Moore et al. (2005), in Qian (2013:79) that "lack of upper-level commitment to ESD impeded the timely allocation of resources for change and the creation of entire institutional change for sustainability". Indeed, my research participants were of the opinion that ensuring senior management commitment towards ESD and sustainable development would be another potential constraint. These are typical concerns amidst most organisations worldwide. Qian (2013:79) rightly points out that "bottom-up approach often limits the sustainability interest within people who initiate and directly engage with the change". Sustainable development and ESD are usually pushed into a little corner in an organisation with insufficient enabling powers and resources allocated to the team given the responsibility of sustainability within the organisation. It is perhaps for this reason that UNESCO's report (2014:85) places significant emphasis on capacity-building and training within business organisations

when it states that "the potential for global transformation resulting from an increase in sustainability knowledge and skills in this [businesses] sphere is considerable".

Interestingly, the respondents had an eclectic mix of opinions about the financial considerations, with some reporting financial savings as an opportunity and others lamenting that there exists the mentality at UX that the short-term financial investment would deter it from adopting any measures related to sustainable development. This is because they feel that employees and senior management may not have the ability to view the long-term benefits and financial savings made through the capital expenditure.

There seemed to be an agreement amongst the research participants that being seen as doing what is morally good for society is a good opportunity for UX. Another clear opportunity identified by the respondents was that any ESD and sustainable development initiatives would have a positive impact on UX's reputation and ranking in the university league tables.

It was disappointing to note that environmental considerations were greatly lacking amongst the responses given by UX employees participating in the research study. Any environmental considerations they mentioned were tied to the financial savings or reputation aspect. This suggests that the research participants do not perceive the value of the environment in its own right but rather attach a monetary value to it.

- ✓ Institutional barriers within UX: *"at this moment apart from Faculty of Technology I don't see other Faculties' involvement in this education for sustainable development. They don't know what it is"* (INT001), *"negative aspect would be I guess that it would be something else that I have to take into account when I'm doing my job"* (INT003), *"If there isn't a top-down (encouragement) message and people see it as 'I'm under stress, work wise and I'm being asked to alter my behaviour to something that is actually taking me more time for not as clear a result and my manager doesn't support it, then I'll just shift into my old habits'"* (INT006), *"the daily duties of members of staff could get affected by adopting these sort of sustainable strategies"* (INT007);

✓ Financial considerations: *"The major drivers are…financial savings"* (CONV008), *"instead of thinking actually this is a better way of doing it by investing an extra 10% now upfront but we're saving 20% later. That doesn't come into the calculations in an organisation. They see the expense of capital expenditure"* (INT004), *"it may be costing a day's time now to save a pound but if we change that over a period of 20 years and the ripple effect of my behaviour… it's accumulative"* (INT006);

✓ Social considerations: *"preparing for the next generation"* (INT002), *"Society would benefit eventually when the staff have been trained and taught the students and the students are out in the wider world"* (INT005), *"Reputation in the community. We are not isolated, we live in a community"* (INT006);

✓ Reputation of UX: *"To improve UX's ranking position in the Green League Table"* (CONV008).

5.3.1.5 Skills needed for a sustainable lifestyle; and Social Transformation and Institutional Change

Research Question 5
What skills (cognitive, practical, thinking, decision-making, problem-solving) are required by employees if they are to become more confident in implementing action strategies that will help them adopt a sustainable lifestyle?

- Node 4.2 Skills needed for a sustainable lifestyle:

Upon being asked to list skills that would enable them to lead a sustainable lifestyle, participants gave significantly varied responses from ability to adopt the new lifestyle to not feeling isolated when adopting sustainable practices; from stating that they already have all the skills required to arguing that it is not skills but resources that they need.
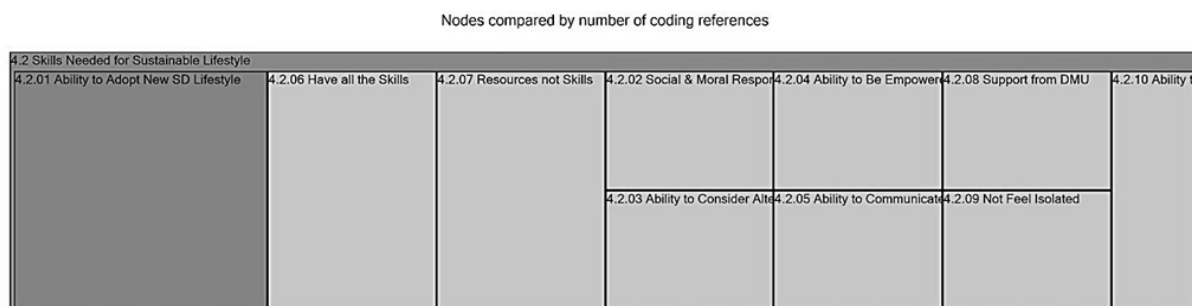
Figure 51: Skills Needed by Respondents to Lead a Sustainable Lifestyle

- ✓ Ability to adopt new sustainable lifestyle: *"to adopt in the new lifestyle because you know people even me included, I am not comfortable with change"* (INT001);
- ✓ Have all the skills: *"It's funny as I can't really think of any skills I don't have"* (INT005), *"I can't think of any skills that I would need to be honest"* (INT007);
- ✓ Resources not skills: *"I can think of resources that would help me in leading a more sustainable lifestyle, like more time or more money"* (INT005), *"Daily needs basically such as transportation"* (INT007).

I found the array of responses interesting because they gave a picture of how the UX employees participating in the study viewed themselves and their level of ability to lead a sustainable lifestyle. It also presented me with a picture of what personal barriers they encounter in their daily life when trying to make the necessary behavioural changes. This information is what should form the basis of a needs-based and context specific employee training programme in ESD. I would say that, from their responses, there was a low confidence in their ability to make changes prevalent amongst the UX staff interviewed. The infusion of thinking skills in an ESD training programme may have the potential of raising their self-confidence and providing them with the skills to take control of their decisions, actions and behaviour as opposed to merely going along with the flow without reflecting on the impact of their actions. Such a model for the process of designing ESD programmes for employees is supported by UNESCO (2014:185) when it highlights the need "to create the organizational climate necessary for change, to put the resources in place to secure change and to provide encouragement for all actors to experiment, take risks, learn and adapt in order to move societies towards sustainability".

- • Node 5.3 Social transformation and institutional change:

After seeking information about personal skills they would need, I proceeded to ask interviewees what elements they believe would be essential in an ESD training programme for it to achieve the desired goal of creating organisational change at UX. Two most common elements identified were to (i) ensure the programme would have a holistic and integrated approach; and to (ii) present and make change relevant. I believe this reinforces viewpoints expressed by the research participants throughout the entire study. They hold a broad view that ESD and sustainable development are

not truly an integral element of UX as an organisation and there exists a general lack of interest in them amongst employees. This reality is worrying not only because it reflects what is actually happening within the organisation, but also because gathering support to implement need-based training programmes in ESD at UX may be challenging and met with significant reluctance, resistance or disinterest. Yet, I am of the opinion that as a change agent, being equipped with these findings would provide me with the essential tools when embarking on such an initiative. Furthermore, any organisation attempting to adopt this approach for the design of employee training in ESD would have some insight into what to consider and take into account. The findings from my research study present what I perceive to be valuable information about the 'how' element of introducing needs-based and context-specific employee training in ESD within any organisation.
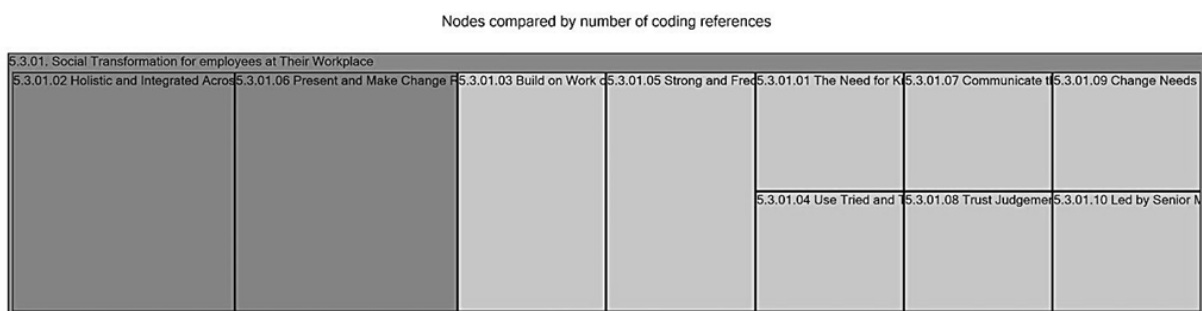
Figure 52: Elements in ESD That Would Lead to Institutional Change

✓ Holistic and integrated approach: *"It should be holistic and integrated. All departments and everyone should play their role"* (INT001), *"there is this lip service about sustainability and how it is right at the core of everything we do and look at all the sustainability we do across the whole University"* (INT004), *"we don't have total coverage by a way and particularly not in the academic community apparently which is of concern and worrying"* (INT006);

✓ Present and make change relevant: *"Make sure it's relevant - if your ideas don't look like they are relevant to the people who are listening then change your ideas or change the way you're trying to implement"* (INT003).

A key element in my research inquiry was to explore routes for the transfer of sustainable behaviour and practices of employees from their workplace to the community and within their personal life. The research participants identified three main points to be included in an ESD training programme for employees that would

enable them to make this transfer. These are (i) including messages and examples of sustainable development practices within the home; (ii) creating links about sustainable development between UX and its wider community; and (iii) making links between sustainable development practices at UX and at home.
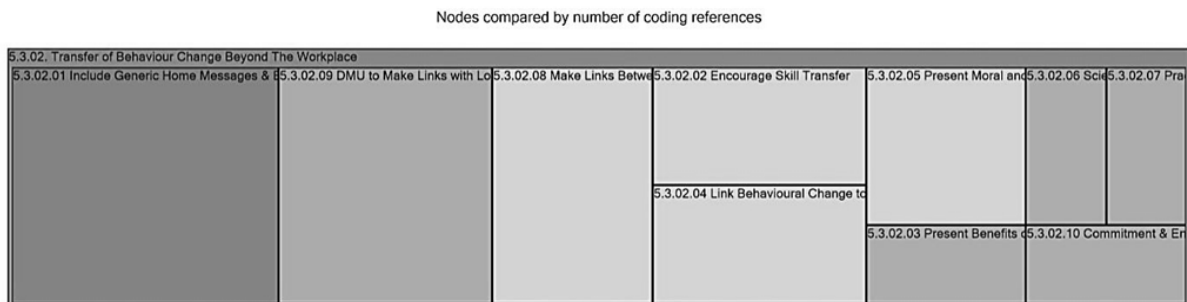
Figure 53: Elements in ESD for the Transfer of Behavioural Change Beyond the Work Place

- ✓ Include generic home messages and examples: *"teaching somebody about their work environment and how they change to adapt and become better within their work environment would never be specifically related to something that they could take home but actually if you build that within the module of the training programme that would support that"* (INT002), *"with individual staff it would be again, have some kind of session in the programme where how does it look like at home? Is there any way how you could do some of these things at home as well?"* (INT003), *"if you internalise the principles, you do take it home with you"* (INT004), *"examples that would include life outside work during the discussions within the training"* (INT005);
- ✓ UX to make links with local community: *"I consult mostly with City Council and Students' Unions"* (CONV008), *"you can also play a significant role within your community as well"* (INT001), *"So if the university is doing this as an organisation let's see how we can help to increase sustainability outside of our walls. Then that sort of shows the university taking the thing seriously and putting its money where its mouth is"* (INT003);
- ✓ Make links between sustainability at UX and at home: *"It might even specifically look at how you could apply that learning at home"* (INT002), *"You want to allow people to see that the things they do at the university, they can also do at home. So they can see that for themselves as then they're more likely to pick it up and run with it"* (INT003).

There appeared to be consensus on the relevance of linking any ESD training at UX to what employees could do outside the confines of their workplace. This is encouraging as it suggests that the research participants acknowledge, though perhaps not consciously, that ESD "empowers learners to take informed decisions and responsible actions for environmental integrity, economic viability and a just society, for present and future generations, while respecting cultural diversity" UNESCO (2014:12).

5.3.1.6 UX's commitment to ESD; Staff development programmes and initiatives on SD at UX

Research Question 6
In what ways will this investigation improve my role as a change agent in order to promote people-centred sustainable development?

- Node 1.1 UX's commitment to ESD:

These results have already been presented in section 5.3.1.4 above since the data from this node also provided insight to research question 4. Findings indicate that most of the research participants believe that UX is committed to promoting sustainability because it is one of the main themes in UX's corporate strategy called *Strategic Plan 2011-2015*. Only one or two questioned whether having sustainability mentioned in the corporate strategy does indeed reflect what was happening on the ground across the organisation. In my role as a change agent, from the conversations and interviews I carried out at UX, it would be safe to say that, other than the work being done by the sustainability team at the Estates department and the research and teaching carried out by the staff at the IESD, rigorous strategic commitment to sustainable development and ESD at UX is rather lacking. Such a scenario has been reported and highlighted in the literature reviewed and referred to in Chapter Two in such cases as Epstein (2008), Redmond and Walker (2009), Qian (2013), and0 Zibarras and Coan (2015). It appears to me that the value of the work by the sustainability team and the IESD is not fully and wholly recognised. Moreover, institutional support, particularly from senior management, needs to be seen and felt more strongly if UX is to honour its pledge to sustainability as stated in its very own corporate strategy. The latter dedicates three full pages (Appendix 5) to sustainability with a pledge that states: "We will make a significant contribution to global efforts to

achieve environmental sustainability" (UX Strategic Plan 2011-2015, 2011:29-31). However, I was keen to explore how such statements are being realised across the organisation. I used NVivo to carry out a simple content analysis of the major documents published by UX that would be able to shed light on the level of commitment stated in these publications. The results of the content analysis exercise were presented in section 4.6.6 of the previous chapter.

It is commendable that UX, as stated in its Environmental Report for 2012-2013, joined the Green Academy programme run by the Higher Education Academy (HEA) in February 2013 with significant work being done to embed sustainable development to a wide range of modules offered to students. However, this initiative does not target the employees themselves. UX appears to rely on Green Impact and more recently Smart Spaces schemes to promote sustainability with its employees. Yet such schemes are voluntary and dependent on teams to work together with no specific ESD training given to the employees as part of the process. Green Impact has an accreditation system based on a checklist for teams in order for them to work towards the Bronze, Silver or Gold Award status. ESD is only mentioned in UX's Environmental Report for 2012-2013 (Appendix 6) in the context of students' learning. The subsequent report for 2013-2014 gives more prominence to staff (and student) engagement with a target, stating that UX "will deliver at least one environmental behaviour change project per year for staff (Green Impact or similar) to 2016/2017" (UX Environmental Report 2013/2014, 2015:3). Yet, it omits ESD altogether. There is mention of teaching and research but it steers away from the term ESD notwithstanding the fact that this report was compiled within the UN decade of Education for Sustainable Development (2005-2014). On a more positive note, I was however encouraged to see that in UX's 2013/14 Environmental Report, the semantics are more in line with the principles of ESD when it makes reference to "environmental behaviour change".

It is acknowledged that the research sample for my study is small and does not necessarily reflect the views of all members of staff at UX. However, as discussed in detail in section 5.2.2 above, emerging views and ideas from my research participants indicated that they had become recurring and repetitive. Therefore, I can conclude that the research sample provided a sufficient representation of the realities

within the research context as they occurred at the time of my research study. As a result, on the basis of information obtained from my data sources through interviews and casual conversations, it is evidently clear that gaps exist between what is stated in the publications by UX and the viewpoints of the research participants. This may be attributed to complex factors. However, simply put, I believe that it is broadly due to (a) low employee engagement resulting in a lack of awareness of, not taking an interest in, and not taking ownership of, sustainability at UX; and/or (b) UX as an organisation only pays lip service to sustainability resulting in weak support for employee engagement in sustainability.

To readers of the documents reviewed as part of this research study, UX has a good track record in promoting sustainability in all its teaching, learning and operations. Yet the information captured from the research participants presents a significantly different reality. I would argue that if employees have not been given training in sustainable development, then it would be rather presumptuous to assume that the promotion of sustainability in a manner that creates behavioural and institutional change would be achieved solely through the endeavours of the teams at the Estates department and the IESD. That scenario presents a near to impossible task for these teams especially since a considerable part of their work focusses on students and the operational aspect for achieving sustainability targets such as carbon emissions reduction.

- Node 1.2 and 1.3 Staff development programmes and staff initiatives on SD at UX:

An action research project carried out at the University of Southampton on academic staff engagement in ESD at a higher education institution highlights the need for universities "to provide a clear vision and strategy in ESD and build sustainability awareness through clear dissemination and communication strategies and the creation of professional development programmes for staff" Cebrian, Grace and Humphris (2015:85). The starting point of my research enquiry at the selected research context, UX, depended on whether ESD training for employees was being offered and/or taking place at UX. During initial conversations I had at the outset of my data collection phase, as envisaged, I learnt that none are offered, thus rendering it possible for me to carry out my study with a set of employees from UX. Hence, in

order to verify this, I asked my research participants whether they knew of or were invited to any training on sustainable development. As can be seen from the table below, all nine data sources (seven interviews and two casual conversations) stated that they were not aware of any ESD training at UX for its members of staff with seven reporting that they were personally not offered such training. This scenario echoes similar findings by the UN Global Compact published in its *2013 Corporate Sustainability Report* which states that despite 65% of its signatories being committed to sustainability at CEO level, "only 35% are training managers to integrate sustainability into strategy and operations" (UNGC, 2013:7). It was interesting to note that four respondents claimed that any training that promotes sustainable development is done in a disjointed approach.
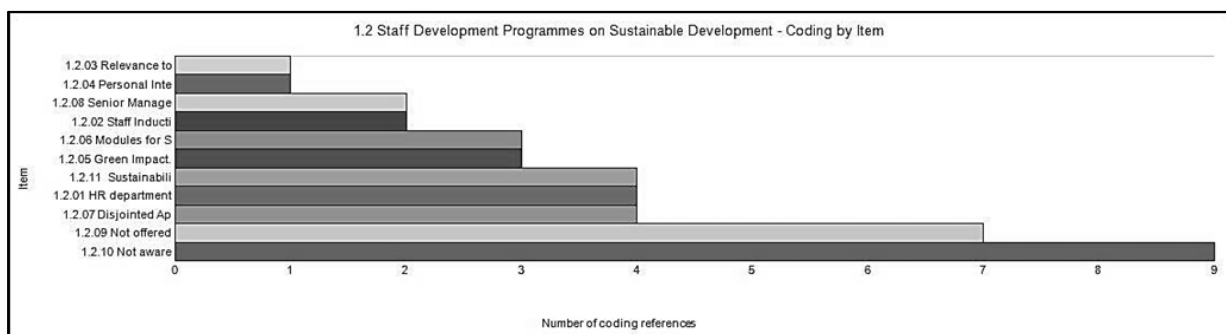
Figure 54: Provision of ESD for Staff at UX

I extended this theme to obtain data on initiatives for employees promoting sustainable development at UX. If no formal ESD training is provided at UX for its employees then it was hoped that some informal ESD was taking place through such initiatives and/or events. All seven interviewees were able to mention UX's participation in Green Impact which clearly indicates that this initiative is given effective prominence and marketing across the organisation. Nonetheless, from other responses elsewhere in the interviews, I was told that there are pockets of departments and buildings at UX that do not participate in Green Impact so coverage is still not at the desirable levels. Most interviewees lamented that any invitations to sustainable development initiatives were made through a blanket invitation via email. Some respondents also complained that, as employees, they feel they receive initiative overload and most times, due to time pressure or a belief that the initiative is not of relevance or interest, they would discard the invitation as soon as it reaches them.
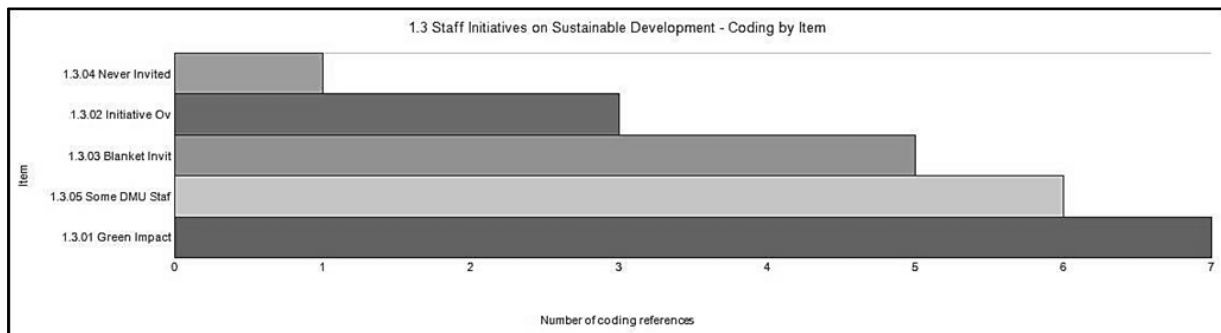
Figure 55: Provision of Initiatives on Sustainable Development for Staff at UX

Once again, this is alarming because opportunities to gather more support in inspiring employees to "act for sustainability" (UNESCO, 2014:12) are being missed. The literature reviewed indicates that these findings are prevalent in many organisations around the globe. It then follows that my research study supports Lenglet (2014:124) when he states that "more and sounder research is needed on how ESD-inspired content and learning methods can make a real difference in getting people to move onto paths of sustainability". More recent findings in the UNESCO report*, Shaping the Future We Want* (2014:151) claim experts have suggested that "on the basis of the last 10 years of work on private sector education, short experiential training events, which focus on systems thinking and practical decision-making, and which challenge participants from different sectors to co-create solutions to real problems, are most effective". Such findings suggest that there is a need and a demand for ESD in the work setting with a growing body of leadership teams and senior management teams in organisations recognising this need. Yet they are requesting "a greater focus on scaling up business action as it relates to their own companies or industries and greater experiential learning" (UNESCO, 2014:151).

This is in line with two key findings in my research study that ESD for employees requires senior management commitment and needs to be relevant and context specific. Furthermore, there is an increasing awareness that "technical 'know-how' will not be sufficient. Skills and capacities for whole-systems approaches, critical thinking and collaborative problem-solving will also be needed for private sector transformation" (ibid: 152). This gives strength to the work I have carried out with employees at UX. As part of my research study with the set of employees at UX, I have explored how thinking skills would enhance behavioural change if they are

infused into ESD for employees. It is against this backdrop that as a change agent I am eager to create behavioural change and promote sustainable development amongst employees through a process whereby the design of employee training in ESD would highlight the application of thinking skills (or soft skills). This approach has been documented in the FT Business Education (2013) in UNESCO (2014:152) when it reports "a growing consensus in private sector education community that there needs to be a shift from teaching frameworks and models to developing critical analysis and decision-making skills that will help managers deal with complexity and rapid change".

- Node 5.3 Social transformation and institutional change:

In section 5.3.1.5 above I have presented the data for this node as it also helped me to gain an understanding of what I needed in order to find answers to research question 5. The data obtained from the research participants on what they believed were necessary elements to be included in an ESD training programme for employees at UX has the potential of improving my role as a change agent. It has given me a better understanding of the needs of employees within the context of their workplace and what routes could be explored to assist in "transforming learning and training environments" by integrating sustainability principles into education and training settings in line with *Priority Action Area 2* in UNESCO's Roadmap for Implementing the Global Action Programme on ESD (UNESCO, 2014:15).

5.3.1.7 Empowerment skills; and The role of a change agent

One of my aims was to obtain the views of the research participants on the skills they felt would be required for UX staff to become sufficiently engaged in a process of change for sustainable development. The findings would help me improve my role as a change agent because they would provide me with points to reflect upon and take into account as an ESD practitioner.

- Node 5.1 Skills required for empowerment of staff:

It was interesting to note that the top three elements listed by interviewees were: (i) provide staff with knowledge and understanding of ESD principles; (ii) provide staff with motivation; and (iii) provide soft skills and thinking skills training to staff. *"Make*

employees aware of the issues on sustainable development by providing training" (CONV009), *"Motivation means 'I really want to do this' "* (INT002), and *"I think to have a thinking mind, the inquisitive mind not to just accept things. Not to be risk averse"* (INT006). Such findings are encouraging and point to the need and importance of providing training to employees if an organisation intends to drive sustainability forward. I believe that from the data gathered, there is sufficient evidence to say that if done through the right process, employee training in ESD is indeed possible and would contribute significantly towards an organisation's sustainability endeavours. This evidence is echoed in the UNESCO report, *Shaping the Future We Want* (2014:153) when it states that "Another type of education and training for the private sector is customized, in-house training. Such initiatives contribute considerably to ESD in the workplace, including training staff to implement sustainable business models in corporate environmental management, corporate social responsibility and support for local sustainable development initiatives".
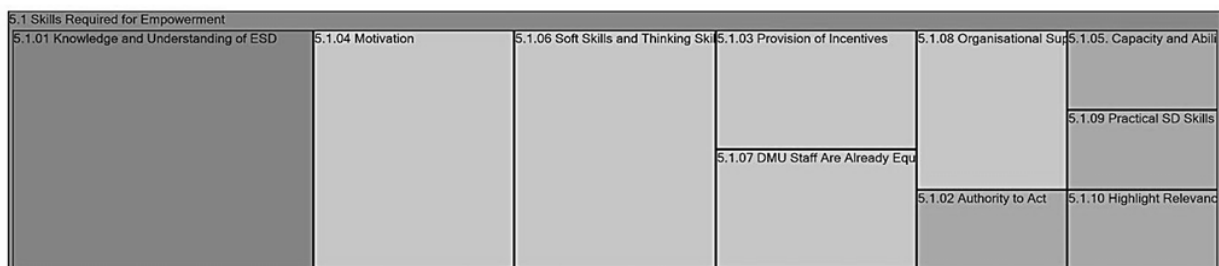
Figure 56: Skills Required by UX Staff to Become Engaged in Process of Change Towards Sustainable Development

- Node 5.2 The role of a change agent:

The data from the node below presents the predictions of the research respondents upon being asked about the consequences of staff engagement in the design of their own ESD training programmes. This interview question was worded by using another of de Bono's thinking tools called Consequence and Sequel (C&S) since it is a prime evaluation tool and directs us to "run things forward in our minds" (de Bono, 1997). The two most commonly cited consequences were positive ones: (i) Positive initiative and needs-based; and (ii) Higher buy-in and a sense of ownership. *"The consequences would be that through the engagement, through the workshops and feeding into the design, it would personalise the messages"* (INT002). INT005 was able to highlight the impact of such employee engagement in the design of ESD

training and link it to behavioural change by the employees attending the training: *"They would be more interesting for the people who have to take part in them and I think that the people who were involved would be more engaged in the process afterwards".* INT007 sums it up succinctly when saying: *"It would be more efficient because if I was asked how I should be trained I would tell them with this thing in mind by stating my training and learning needs. Then they can train me up more accurately rather than somebody just sitting in an office and deciding that. This would only be able to design a generic topic rather than a specific training programme. So if people were asked and their opinions were taken into account I think it would be more efficient and effective".*
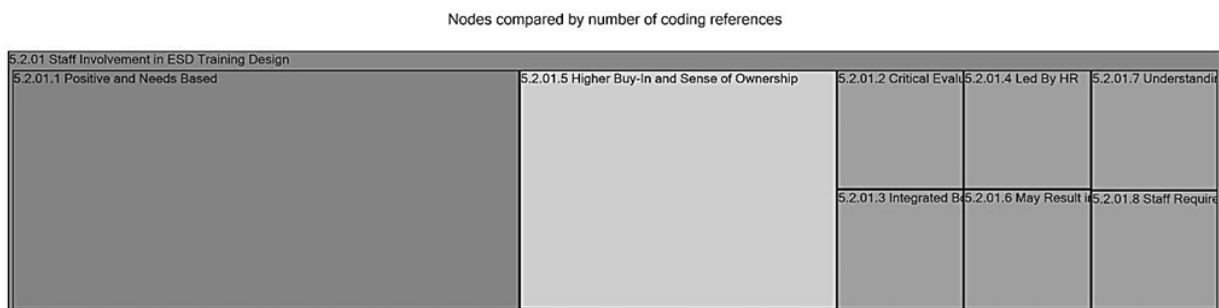
Figure 57: Consequences of Staff Involvement in the Design of Needs Based ESD for UX Staff

From the perspective of a change agent and ESD practitioner, it can be said that the findings presented and discussed above indicate that the reality at UX is not in line with, or working towards, objective 1 of the GAP programme (UNESCO, 2014:14) which states that it is "to reorient education and learning so that everyone has the opportunity to acquire the knowledge, skills, values and attitudes that empower them to contribute to sustainable development". This is because employees are not being provided with ESD training despite research participants highlighting its benefits to the employees and the organisation as a whole. UNESCO (2011: 8) points out that key sustainable development issues such as: climate change, disaster risk reduction, sustainable livelihoods, sustainable consumption and production, biodiversity and poverty reduction are to be integrated into teaching and learning. Yet it warns that as these issues are "characterized by uncertainty, complexity and a high degree of systemic interconnection, ESD requires participatory teaching and learning methods like critical thinking, imagining future scenarios and making decisions in a collaborative way in order to empower learners to take action for sustainable

development". The research carried out with the set of employees at UX to explore the process for such ESD learning and teaching to take place in an organisation is evidence to the dire need for employees to become empowered to participate and take action towards sustainable development. The respondents have voiced their opinions on the benefits of staff involvement in the design of needs-based ESD for employees; yet they are dubious about the level of senior management commitment to see any of these ESD initiatives through.

5.3.2 Unexpected Outcomes

In this section I will present a brief explanation of unexpected results in my research study. There were broadly three outcomes that I had not envisaged at the outset of my study and these are: (i) the great difficulty in gaining access to employees at UX to act as research participants; (ii) the employees' apparent lack of awareness of de Bono's thinking skills or thinking skills programmes in general; and (iii) the low level of confidence employees have in matters regarding their own training needs, particularly on sustainability.

The fact that I encountered problems in accessing employees who were willing or permitted to take part in my research interviews is worrying. All but two of my research participants held posts in middle management or formed part of the lecturing or research body at UX. Another was a PhD research student whilst the other worked at IESD where it was evident that there was support from the department to participate in my research study since it was related to a discipline that IESD actively engages in. This means that all my research participants held positions where they were able to manage their work time flexibly and could, therefore, accept to spend time to be interviewed as part of my research. Naturally, this raises concerns about accessibility to members of staff at UX in positions where they would require permission to be released from their work. I would have wished to obtain the views of employees from an array of positions as that would have given my findings more depth. Yet, employees that need permission or support from their line managers to be released for half an hour to participate in my research interview did not come forward. Neither did any of those in managerial positions, (not even those who form part of the Environment network) refer any members of staff that fall within

their responsibility despite several requests and suggestions I made to them to nominate employees that would be able to participate in my research study. If it is so difficult for the organisation as a whole and for line managers to release staff for a thirty minute research interview, it puts into doubt the organisation's level of commitment to engage with members of staff in varying roles and offer training programmes on thinking skills and ESD to them.

The second unexpected finding was the lack of awareness of thinking skills programmes and de Bono's work. The research participants in my study were not familiar with, or had not attended any thinking skills training. One or two had vaguely heard of de Bono's work and were aware of a couple of his books or of thinking skills programmes such as the Six Hats programme. It was, therefore, a challenge to proceed with the element in my enquiry where I wanted to explore the effectiveness of de Bono's thinking skills on behavioural and institutional change if they were to be infused in ESD training programmes for employees. In view of this, I amended this theme by broadening the code to include soft skills (such as decision-making and problem-solving skills) as it appeared to be a more familiar concept to the research participants. This change brought my research inquiry more in line with UNESCO's definition of ESD (UNESCO, 2011:8) when it says that since sustainable development issues are "characterized by uncertainty, complexity and a high degree of systemic interconnection, ESD requires participatory teaching and learning methods like critical thinking, imagining future scenarios and making decisions in a collaborative way in order to empower learners to take action for sustainable development".

Finally, I would not have envisaged that the employees would feel so helpless and/or uninterested in engaging in a process whereby they would be consulted and asked to identify their training needs as part of their professional development. I could almost sense the feeling of frustration about the endless number of initiatives and changes that are rolled out across the organisation in a top-down approach. Some research participants seemed to cope with this situation by accepting it as the norm. This is a coping mechanism on the part of employees. However, in the medium and long term it may have undesirable results because it could cause a decrease in motivation at the workplace. If an organisation is to drive sustainable development principles forward, it needs to have on board the support of as many members of staff as

possible. A strategy for employee engagement and training on sustainability serves as an enabling factor for the attainment of behavioural and institutional change and contributes considerably to the overall well-being of staff (a key element in education for sustainable development).

5.3.3 Deduction

Bell (2010:210) warns of two pitfalls "not to claim more for results than is warranted" and "not to attempt generalizations based on insufficient data". Bearing in mind that I carried out seven in-depth interviews and two casual conversations, it would be safe to say that it is a small-scale project. Therefore, I cannot but agree with Bell (ibid: 210) when she goes on to argue that making generalisations in small-scale studies is unlikely but relatability is possible. Indeed, this does not mean that the research study carries no value beyond the confines of the research context. As I highlighted in section 3.1.1, the topic under investigation is in itself embedded in one of the key principles of ESD which Higgitt (2009) describes as possessing "nuanced differences according to local contexts, priorities and approaches". It is therefore possible, within the remit of the topic under investigation, to be able to argue in favour of elements of generalisability of particular findings. It was my intention to seek a process for the design of ESD training for employees that is both flexible and adaptable. Consequently, I have argued in this chapter how the findings collated from the research I carried out at UX, despite being a small-scale study, bear a significance for other organisations. On this point and within the inquiry of my study, I extend Bell's sentiment (2010:210) that "well-prepared, small-scale studies may inform, illuminate and provide a basis for policy decisions within the institution" one step further by highlighting lessons to be learnt for those organisations keen on assisting their employees adopt more sustainable practices at work and in their personal lives. From the outset of my study, I stated that there is no set 'one size fits all' formula or model for ESD programmes with employees. However, the points to be considered during the design process that have emerged from my study can serve as guidelines for organisations when embarking on the design of needs based and context specific programmes.

5.3.4 Concluding Comments

In this section I will present a summary of my interpretation of the main research findings which have enabled me to gain an understanding of my research inquiry and the answers to my research questions. They are the product of themes that emerged from the data during the coding process thus forming the basis of the theory generated from the findings of my research study. This will be presented in section 5.4.1 below.

- Commitment to ESD, Development Programmes and Initiatives for Employees

Staff believe UX is committed to sustainibility because the theme is mentioned in the *Strategic Plan 2011-2015.*

None of the respondents were offered, and therefore have not participated in, any ESD training by UX.

Green Impact led by Estates department has good visibility as all respondents were aware of it; yet respondents reported that there are pockets at UX with no Green Impact engagement.

- Application of de Bono's thinking skills

No awareness of de Bono's work amongst research participants.

Participants are familiar with soft skills training, with some reporting that they have been offered some form of soft skills training at UX.

Most of the participants were unable to see the value of applying thinking skills to participation in the design of their own training (engagement and empowerment skills).

The majority of the participants reported that being equipped with thinking skills (or soft skills) would assist them in decisions and actions promoting sustainable development.

- Designing staff development programmes on sustainable development

> Participants believe that HR and Estates departments would be affected and ought to take the lead.

> Employees would feel uncomfortable, annoyed, forced and reluctant and resistant to ESD training.

> Respondents strongly believe that ESD programmes should be relevant to the audience, to the role held at UX and be needs-based.

> Participants reported that the key aims of ESD programmes would be to equip employees with understanding and knowledge on sustainability and to ensure that this translates into action and change.

> The design process for ESD training needs to be done by seeking input from staff through staff forums with senior management commitment.

- Points to consider before embarking on promoting ESD and sustainability at UX (Constraints and Opportunities; Financial, Social and Environmental Considerations)

> Staff engagement, senior management commitment and highlighting the relevance of sustainability to job role and personal lifetyle seen as key elements to consider.

> Institutional barriers identified as biggest constraint with some scepticism expressed about UX paying only lip-service to sustainability.

> Financial consideration seen as both a constraint and an opportunity.

> Social implications and the organisation's reputation through UX's commitment to sustainable development viewed positively by all participants.

- Skills for social transformation and institutional change that promote sustainable lifestyle

> Participants identified a mix of skills they require to be able to lead a sustainable lifestyle. One reported having all skills, with another stating that it was resources and not skills that are required.

> Participants believe that ESD programmes need to adopt a holistic and integrated approach and to present and make change relevant as two key elements that would lead to institutional change.

> For transfer of sustainable behaviour beyond the workplace, staff ESD programmes need to include generic home messages/examples whilst making links between sustainability at UX and its wider community and employees' home context.

- Researcher's role as a change agent

> The journey throughout my research study provided me with opportunities to reflect upon some pertinent questions I have had as an ESD practitioner.

> The experience has enabled me to explore the realities that exist within organisations in relation to the promotion of sustainable development.

> The study has given me a close up picture of the dynamics within an organisation and provided me with valuable insight into the viewpoints of employees at the research context.

> The research findings have given me sufficient understanding of the factors that need to be kept in mind when designing ESD training for employees.

> This will improve my ability to assist organisations take on board ESD for their employees by ensuring there is sufficient adaptability and flexibility for the programmes to be truly need-based and context-specific.

5.4 Generated Theory

In the final section of this chapter I will present the theories generated through the application of grounded theory during the coding and analysis of the data collated in the study.

5.4.1 Emergent Theory

If ESD training programmes are to be relevant to employees, then the latter need to be consulted as part of a needs assessment exercise as highlighted by Noe (2013) in section 2.3.2. A preferred medium would be through staff forums which many organisations have in place or through set ups similar to the Eco-Schools Councils. Employees do not always feel sufficiently empowered to recognise their role in this stage of their staff development training. Neither do they feel equipped with the competencies to make the necessary behavioural changes towards a more sustainable lifestyle. The exploratory work on the applicability of thinking programmes to ESD for employees has the potential to enhance employees' confidence and motivation for engagement. Yet, this would bring about the desired outcome only if the organisation has trained or plans to train its staff in thinking skills which is in line with UNESCO's description of ESD learning when it says that it enables learners to ask critical questions; to clarify one's own values; to envision more positive and sustainable futures; to think systemically; to respond through applied learning; and, to explore the dialectic between tradition and innovation (UNESCO, 2011a: 8). Still, it is clear that employees do recognise that being equipped with 'soft skills' or thinking skills would assist them in making the necessary changes in their decisions and actions thus leading a more sustainable lifestyle.

There needs to be a shift in mentality within organisations in relation to ownership and responsibility for driving sustainable development principles forward across the organisation. It appears that employees feel that the designated team or department is exclusively responsible for sustainability within their workplace. The same applies to staff development training. Organisations need to offer an environment whereby employees feel sufficiently confident to participate in the identification of their own training needs, engage effectively in the design of their training on sustainability and provide support to the designated teams or departments that would lead such a process in designing ESD for its employees.

Finally, the key emerging theory from the data within this study was that employees feel very strongly about training and initiatives that are imposed in a top-down approach and hold the view that this leads to employee resistance and reluctance to engage. Employees recognise the importance, effectiveness and benefits of a

needs-based context-specific approach to training coupled with sustained senior management commitment throughout. Therefore, the study findings suggest that if employees are given the skills and opportunity to have the confidence and motivation required, the chances of having a more engaged workforce would be higher. When such a theory is applied to ESD at the workplace, this concept would assist the organisation to meet the Priority Action Areas 1 (Advancing Policy) and 2 (Transforming Learning and Training Environments) of the UNESCO Roadmap for Implementing the Global Action Programme on ESD (UNESCO, 2014). It was therefore encouraging to note the results from this study found that respondents believe that having staff involved in the design of their own ESD programmes would have a positive impact as it would create an effective process for behavioural and institutional change. It is now a matter for senior management to ensure that it provides a learning culture within its organisation for all employees across the board. It will also need to show that it is giving ESD programmes for its staff the necessary commitment by making resources (human and financial) available. The figure below represents the recommended process in the design of employee training on sustainable development that would bring about effective action strategies for sustainable living amongst employees.
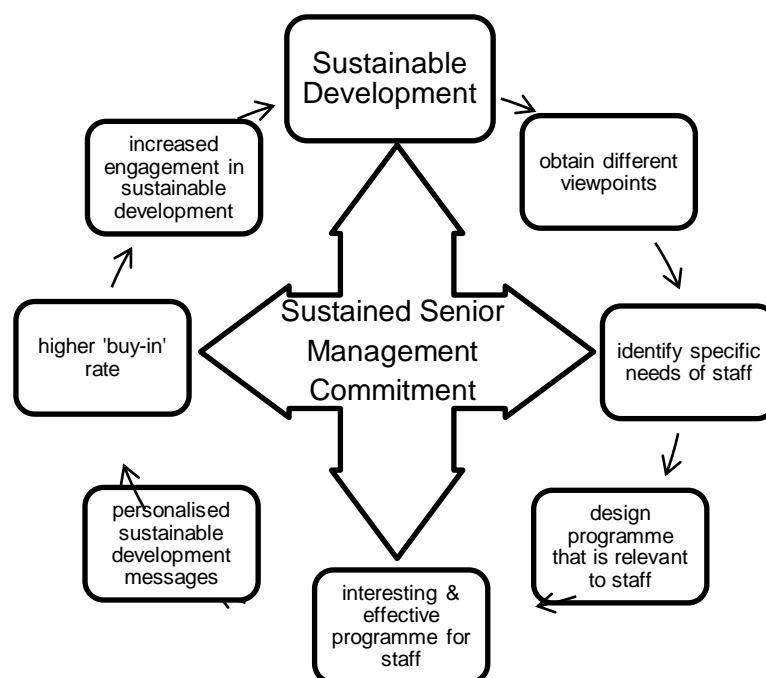
Figure 58: Suggested Design Process for ESD Programmes for Employees

5.4.2 Bringing the Study to a Close

This chapter has given a detailed analytical interpretation of the findings. The methods employed for the analysis of data and generation of theory have also been described. These were fed into the research questions that had formed the basis of my research inquiry. Reflections on how the study and findings have impacted upon my role as a change agent and ESD practitioner were also discussed in this chapter. The data led theories generated from the study have broadly shed light on my research questions and provided me with valuable experience and information on my research inquiry. Despite a few unexpected outcomes, I would argue that the findings have strengthened my capacity as an ESD practitioner and have opened up new opportunities on how I can assist in developing strategies that would lead to decisions and actions for sustainable living. Finally, my study has contributed to the field of research on ESD within organisations since, as UNESCO states in its report, *Shaping the Future We Want* (2014:185), "all efforts should be grounded in evidence that reorienting education, training and public awareness towards sustainable development will indeed contribute to achieving societal goals for sustainability".

The next chapter which is the concluding chapter of the research study includes reflections on the research journey, my role as a change agent, the significance of the research findings, list of recommendations as well as ideas for further research work. I will also present my final thoughts on the research questions and methodologies used in the study.

Conclusions

6.1 Introduction

In the concluding chapter to the write up of my research study I "draw together the threads of the research to arrive at some general conclusion and, perhaps to suggest some way forward" (Denscombe, 2010: 315). I agree with Denscombe (ibid) that the final chapter is a retrospective evaluation of the research and its contributions to the area under study on developing action strategies for employees through the design process of needs based and context specific ESD programmes. I have therefore included such an evaluation in sections 6.2 and 6.3 below. I close the chapter with my recommendations and what I have identified as new directions for further research and these are to be found in section 6.4.

As a result of this study and on the basis of my research findings, the key implications for developing ESD programmes for employees are:

Employees need more awareness of the benefits of thinking skills training in helping them to engage in identifying their own training needs. (section 5.3.1.1)

There exists an understanding that being equipped with soft skills would increase the likelihood of behavioural change amongst employees. (section 5.3.1.2)

ESD training programmes for employees should be needs based and relevant to their role within the organisation.(section 5.3.1.3)

ESD initiatives for employees must have sustained senior management commitment. (section 5.3.1.3)

ESD training programmes for employees should target behavioural and institutional change. (section 5.3.1.4)

There is scope for skill transfer beyond the workplace if home and community examples and topics are merged into ESD programmes for employees. (section 5.3.1.5)

Despite some conflicting views arising from capital expenditure for ESD initiatives within an organisation, in the long term, such initiatives would benefit the organisation's reputation and sustainability performance. (section 5.3.1.4)

ESD practitioners need to explore ways of working with HR in order to initiate a process whereby behaviouval and institutional change can take place effectively through a healthy learning environment. (section 5.3.1.3)

6.1.1 Structuring the Research Write Up

As a qualitative researcher, I am aware that the familiar structure and headings of writing up research might seem inappropriate and not a reflection of how my research actually evolved. Nevertheless, I have made an attempt at structuring my write up as closely as possible to the template offered by the conventions associated with writing up research: *Abstract*, *Introduction*, *Literature Review*, *Methodology*, *Findings*, *Analysis and Discussion*, and *Conclusions*. I have done so because as Denscombe (2010: 320) argues, it "gives some structure to the accounts and … is comfortably recognized by those coming from different traditions within the social sciences". In view of this, my research write up has addressed and shed light on the key issues as clearly as possible to the reader and it is structured in a logical format.

The nature of my research enquiry is a rather grey and messy area particularly because it is largely an exploratory exercise to find ways how to introduce ESD for employees. I was reluctant to propose a fixed and regimented template of a training programme for employees. Whilst this would have possibly led to a tighter and neater research study, it would have defeated the purpose of my study: to identify a design process that is needs based and context specific. Hence, the process I have explored and proposed through my research findings is flexible and adaptable. This is in keeping with Lenglet's assertion (2014: 124) that "ESD is likely to be transformed in the process is not only a risk it should take, but also a logical consequence of what ESD stands for, namely transformative education". In view of this, it was challenging to present my research in a write up that was structured sufficiently logically for the reader not to become lost in the messy exploration of my research enquiry. Notwithstanding this, I followed Denscombe's (2010) recommendations and did my utmost to give structure to my write up. This apparent paradox in my research enquiry and write up appears to match my own personality since I believe my mind is busy, creative and vibrant while I am able to put structure and order to my thinking and actions. I am yet to discover whether my training in de Bono's thinking skills has had an influence on this or whether it is my years of experience of supervising and examining undergraduates' and post graduates' research work that led me to acquire the need to impose structure upon my own research write up. Dadds and Hart (2001:166) describe this personalised uniqueness to research when they say:

> "We had understood for many years that …*what* practitioners chose to research was important to their sense of engagement and purpose. But we had understood far less well that *how* practitioners chose to research, and their sense of control over this, could be equally important to their motivation, their sense of identity within the research and their research outcomes."

6.2 Location of Findings

In this section I will provide a brief discussion of the appropriateness of my research questions, the strengths and weaknesses of the selected paradigm together with the methods I employed.

6.2.1 Research Questions

The final set of research questions I have used for the research study is:

(i) How can the use of de Bono thinking skills lead to employee participation during the course design in a manner that facilitates their own training programme?

(ii) How can the application of thinking skills to the design of employee programmes in Education for Sustainable Development bring about employee empowerment in order to induce positive behavioural changes necessary in achieving an improved quality of life?

(iii) What form should employee programmes in Education for Sustainable Development take if they are to assist employees lead a sustainable lifestyle?

(iv) What do employees perceive as opportunities and constraints to ESD at the workplace to attain improved SD across the organisation?

(v) What skills (cognitive, practical, thinking, decision-making, problem-solving) are required by employees if they are to become more confident in implementing action strategies that will help them adopt a sustainable lifestyle?

(vi) In what ways will this investigation improve my role as a change agent in order to promote people-centred sustainable development?

At every stage of my research, I reflected upon the wording and implications of each of the above questions in order to ensure that they would assist me in my exploratory exercise of the research enquiry. The research took place over a relatively long period of time because it was necessary for me to take several short periods of study breaks due to family commitments. Furthermore, as I have explained in section 1.4, in 2009 I relocated from Malta, my home country, to the UK. Apart from the natural upheaval inherent in relocating from one's own country to a new country, I also needed to address issues that this new setting would present in relation to my research study. At the time of drafting my research proposal, I was significantly active in the teaching of de Bono's thinking skills in Malta. This is because there were various initiatives, largely funded by the Edward de Bono Foundation (Malta), to disseminate de Bono's work in his own home country. Hence, as a practising de Bono trainer who had already trialled the use of some of his thinking tools in a few

ESD training programmes, exploring the possibility of infusing some thinking skills into ESD programmes for employees seemed to be the natural choice for me. This is what had led me to draft the first two research questions of my study. In the UK, and also over the course of my studies, I came to realise that the popularity of de Bono's thinking programmes seemed to have dwindled so that when I conducted my interviews with the research participants at UX, I discovered that I needed to make minor changes to the wording of two of the interview questions. I extended thinking skills to soft skills, decision-making skills and problem-solving skills because they were terms that the employees I interviewed at UX were more familiar with than de Bono's specific thinking programmes. Nonetheless, the findings of my research study suggest that equipping employees with thinking skills would indeed give them the confidence to participate in the design of their own training on sustainability as well as the motivation to make changes to their lifestyle to be able to have a lower impact on the environment. In view of this, I believe that whilst the first two research questions may have been worded more broadly to allow for the inclusion of all forms of soft skills, the research questions still remain valid as routes towards gaining an insight into the topic under investigation in my research, to explore the design of ESD programmes for employees.

Research questions (iii) and (v) formed the basis of my investigation since they led me to collect valuable data from my research participants about their own views, needs and beliefs regarding my research topic. The findings give clear pointers as to what employees believe should be the factors to be considered when designing ESD for UX staff, what the aims of such training ought to be, who would be involved and affected if such training takes place at UX and the specific skills they felt they needed in order to live a more sustainable lifestyle. These two research questions provided me with the information I needed as part of my exploratory work to find a flexible and adaptable design process for ESD training programmes for employees. The research findings demonstrate that employees do have valid and interesting viewpoints about their own training needs in sustainability, and, indeed, it would be a pity for the organisation not to provide a platform for the communication of employees' opinions and suggestions. The findings clearly highlight the importance of involving employees in the design of their ESD training as this would lead to a feeling of ownership,

increased uptake and better chances of employees making real changes in their daily decisions, actions and behaviour that would promote sustainable development.

I added the fourth research question after I had some initial informal conversations and meetings with members of staff at UX. This was because it became clear to me at this stage to seek the viewpoints of employees at UX about what they would perceive as opportunities and constraints were UX to introduce need based employee training on sustainable development. Hence, the findings to research question (iv) helped me to gain a broader understanding of the issues at play within UX as seen by the research participants. It gave me the contextual background to UX as seen by the set of employees participating in my research study as well as sufficient data that I could use to compare and contrast with the simple content analysis I carried out on two main documents published by UX on environment and sustainability.

Research question (vi) specifically deals with my research work and how it could improve my capacity to be a change agent. The findings from the study indicate that working closely with employees in order to equip them with the necessary skills, confidence and motivation to become sufficiently engaged in the identification of their own training needs for sustainable development is a key element to the success of ESD programmes for employees. Furthermore, the reflectivity and reflexivity adopted throughout my research study guided me in gaining a better insight into how my role as a change agent can be strengthened to be more effective in the work I carry out as an ESD practitioner. Research question (vi) enabled me to constantly keep in mind what I set out to investigate when I undertook this part of the study, why I wished to investigate it, how I gathered the data, what I learnt along my research journey, my ability to influence other people's learning and ways to bring the experience of my research study into my new educational practices as an ESD practitioner (McNiff and Whitehead, 2010:228-229).

6.2.2 Chosen Paradigm and Methods

As I explained in section 1.3.1, I opted for qualitative research because it best fits the nature of my research enquiry as well as my own personality and research preferences. I wanted my research study to be a personal, almost intimate experience with my research context due to a keen interest in gaining in-depth

information about employees' views on identifying their own training needs, about becoming party to the design of their own training on ESD and their opinion on the organisation they worked for and its commitment to sustainability and training programmes for employees. Since I have been an ESD practitioner for a number of years, and have designed and conducted training programmes for various target groups, I had a strong desire to find ways how I could learn from my research journey in order to improve my own role as a change agent and improve my practice in the field of ESD. In view of this, the constructivist and interpretivist paradigms suited my field of enquiry best because they provided the platform needed to engage in a continuous cycle of reflectivity and reflexivity. Throughout my research study, I regularly looked back at my research questions because they provided me with guidance and direction particularly during the design of my interview questions and the coding and analysis of the data. In my professional role as an assistant lecturer at the Centre for Environmental Education and Research (CEER) at the University of Malta and before that as an Environmental Education Officer at WasteServ Malta Ltd., it became apparent that there was a significant gap in ESD for adults at their place of work. I designed several programmes for employees in these professional roles yet I wanted to gain a better understanding of how I could improve my practice possibly by infusing thinking skills into the ESD programmes. Therefore, as part of the research study, a review of the literature on ESD, thinking skills and employee training was undertaken. From the literature reviewed, it was confirmed that work in ESD with employees is negligible and sporadic at best. Most times it is carried out through a green accreditation scheme in environmental management where the primary focus would be to improve the environmental performance of the organisation and not to address employees and behavioural change through training programmes. Indeed, taking educators as an example of employees, a recent study on the resources available and perceptions of performance on delivery of environmental sustainability and social responsibility within Higher Education and Further Education providers in the UK, *Sustainability In Education 2015* by the EAUC/NUS/UCU/AoC/CDN (2015) found that Estates and Facilities teams are "most likely to lead on environmental sustainability and social responsibility" with ESD being embedded into another institutional plan. It also found that ESD is mostly included in the institutions' carbon reduction strategies as well as their academic strategy.

Therefore, the employees as a target group for ESD are lost in the accreditation process, carbon reduction projects or in the academic curriculum of the organisation.

Against this vacuum of activity in ESD for employees, I embarked on a rather messy piece of research. Nonetheless, it was necessary to present the findings in a cohesive and organised manner in the hope that I could make sense of the data. However, at no point did I want to impose my own research themes and codes to the extent that they would drown into oblivion the valuable data my research participants provided me with during the data collection stage. This study was about employees and for the benefit of employees. Hence, to me it was imperative to allow the data to shape my coding and analysis. The option that would best suit this scenario was to use QDAS (NVivo) as the software facilitates the data to be coded rigorously yet flexibly enough to allow the data from the research context to shape the themes and thus generate theory. NVivo, therefore, helped me to adopt grounded theory to my research study. This process has been described at length in Chapters Four and Five where I also gave a summary of the nature of grounded theory and its many facets. As stated earlier in the write up, it would have been helpful if I had been able to attend training on using NVivo since the books and online tutorials and guides were not sufficient for me to become confident in the use of all the features I would have wished to use for my study. Yet, I am satisfied that I did make use of software for my data coding and analysis as it has helped me, not only in my own research study, but also by giving me new skills which I can explore and use in my professional capacity as an assistant lecturer. The application of grounded theory to support my data coding and analysis through the use of NVivo was beneficial. I believe it was a good choice because it provided the vehicle necessary for the views and ideas of my research participants (the data) to shape and generate theory about the process for designing employee training in ESD.

I relied mostly on in-depth interviews for data collection which I supported with casual conversations, basic content analysis of two documents published by UX and some observation work at UX. These data collection methods were sufficient because they offered triangulation whereby I was able to cross-reference information obtained from the employees to what I noted through my own observations and from the content analysis. However, if I had more time available, I would have wished to carry out more observation work at UX in order to note the incidental behaviour of employees

as they went about their work day. This would have meant that I either had to shadow employees or spend many hours at UX carrying out incidental observations. I was not in favour of shadowing employees through what is commonly referred to as participant observation because I suspect that, once employees are aware that they are being observed, then, there is a high risk that their actions would be altered to match my expectations. Secondly, as Denscombe rightly points out (2010:197), "observing is far from straightforward…acutely sensitive to the possibility that researchers' perceptions of situations might be influenced by personal factors and that the data collected could thus be unreliable". This would not have given me a true picture of the reality and hence led me to rule out such observations. However, carrying out discreet observations of employees in public areas of UX would have been time-consuming but very insightful as I could have obtained a snap shot of the reality as it occurred albeit value-laden due to my own perception of situations and behaviours observed.

In retrospect, I believe that the paradigm, methodologies and methods I employed do justice to my research study and more importantly to my research participants and my role as a change agent. I had set out to obtain the views of a group of employees on the issues under study and of their work setting. The transcripts of the in-depth interviews I conducted were both rich and comprehensive and provided me with the data I needed to be able to find answers to my research questions. I can conclude that I have learnt a great deal about the methodologies chosen and how they assisted me in my role as a change agent and an ESD practitioner. In the next section I will give a summary of my final reflections on my research journey by taking a look back at my starting point and what I have attained by carrying out this piece of work.

6.3 Reflections on my Research Journey

Throughout the course of writing up my research I have often stated that as a qualitative researcher, my own identity, beliefs and values play a role in the production and analysis of the data hence my "research agenda has been shaped by personal experiences and social backgrounds" (Denscombe, 2010:302). For example, it is certain that, if I had not been a de Bono thinking skills trainer, I would not have felt the need to explore how thinking skills could be infused into ESD

training programmes as a possible route to need based programmes. Similarly, the experience I have gained in the past years as an ESD practitioner, through my professional roles at WasteServ Malta Ltd. and later at the University of Malta, guided me towards the research enquiry on employee training. Furthermore, it was my own professional role of designing and running programmes for target groups that gave me the burning desire to find ways how I can serve as a change agent. I wanted to find ways how employees could make changes in their behaviour in a manner that would be simple yet effective. Awareness of sustainability issues is high thanks to the media. Yet, I wanted to explore how I could translate that awareness into action. Therefore, the reflexive account I have given is a reflection of my own identity as a researcher. Moreover, in order to ensure openness and reliability, I found the use of NVivo software helpful as it helped to maintain a degree of objectivity. For example, when the data was being coded with NVivo, it immediately became evident that the research participants were not familiar with de Bono's thinking skills programmes. Nonetheless, I have presented the data and given my own interpretation of this finding despite the fact that it did not match my broad research enquiry. I have also presented my own explanation as to why the data gave such a result which I linked to my research journey that included relocating from Malta to the UK.

My role as a change agent and the significance of my findings to ESD and employee training are presented in the subsequent sections.

6.3.1 My Role As A Change Agent

I concur with Bryman (2004:500) when he says that in postmodernism the reflexivity element in social research has created "a greater awareness and acknowledgement of the role of the researcher as part and parcel of the construction of knowledge".

It was during the beginnings of the UN DESD that I began my research journey. I was living in my home country and actively working in the environment sector. I had the research experience of my own Master training in Environmental Education which I pursued at Nottingham Trent University, UK and was also a certified de Bono thinking skills trainer. It was the early stages of my academic career and I was gradually gaining experience in supervising undergraduate students' research in environmental education and ESD. I worked under the expert guidance of my boss who is Director at CEER, Prof. Paul Pace, and gained valuable experience in the academia.

Furthermore, through my voluntary work with Friends of the Earth (Malta) and my professional role as an Environmental Education Officer at WasteServ Malta Ltd. where I worked before I took up the full-time post at CEER, I had often designed and delivered training to adult audiences, mostly employees on various sustainable development issues such as waste management, sustainable tourism and resource management.

As a result of engaging with my audiences, I developed the enthusiasm and passion to help people make small yet effective changes to their day to day lifestyle that would assist them in having a less negative impact on the environment. It led me to acquire a thirst for knowledge, to seek answers to the many reflective and analytical questions that arose from these experiences. As has been discussed in detail in Chapter Two, a review of the literature on ESD to obtain information about ESD for employees and how to engage employees in the design of their own training programme on sustainable development highlighted the gap in knowledge on this issue and led to the research enquiry of my study. I wanted to help employees change their lives and wanted to explore how this could be done.

My research journey has given me the information and knowledge I was seeking in order to improve my role as a change agent. For example, I have gained a deeper understanding into the views of employees on ESD training and the interconnectedness between the ability of an organisation to offer a learning environment for its members of staff and employee engagement. It has been an exploratory exercise to design needs based training programmes for employees on ESD. It is about ESD that is situated within the professional lives of people, namely, employees. I selected employees because existing research suggests that organisations be they a plc, a higher education institution or part of the public sector, would increase their ability to attain the sustainability targets expected of them with the "creation of professional development for staff" (Cebrian et al., 2015: 85). Jackson et al. (2012:430) argue that in organisations "training programs may be most effective during the early phases of pursuing environmental sustainability, and then become less important after a solid base of knowledge has been built up…". I do not agree with Kulik and Roberson (2008) as cited by Jackson et al. (2012:430), that "programs seldom succeed in creating organizational change". The findings of my research study indicate that when employee training on ESD is designed to meet the

needs of the employees and is relevant to the employees and to the organisation, then employees interviewed in my study believe that such programmes would lead to behavioural and organisational change because the employees would be able to take ownership of the content of the training programme as they formed part of its design.

Following my research study, I am now more confident about setting up initiatives within organisations for the introduction of needs based and context specific ESD training programmes for employees. The findings of my research have highlighted what I would need to keep in mind when making proposals to organisations because I have obtained from the set of employees at UX, the knowledge of what their views and needs are. The focus of my proposal would be the process of engaging employees in the design of the training. Therefore, the process employed would be the same in any organisation. Yet the actual training programme would be specific and bespoke to an organisation as it would reflect both the needs of its employees and the setting of the organisation.

6.3.2 Significance of My Research Findings

A change in employees' behaviour is beneficial to the future of our planet, to their own life and community as well as to the corporate needs of their organisation. Routes to creating a change in employee behaviour are varied but when it comes to assisting employees change to more sustainable and environmental behaviour, existing literature and research indicate that the most common routes are through environmental management schemes or through awareness-raising and training by human resources departments. My research enquiry has thus highlighted the gap in the contribution ESD can offer in developing action strategies for sustainable living amongst employees. Furthermore, my research creates a distinction between employee programmes on ESD and study modules for students attending higher education institutions. My research findings demonstrate that planning modules for students requires a very different process from that of designing employee training. The latter requires employee involvement as it has been shown through my findings that the content of such programmes needs to be relevant to employees and to their role within their organisation whilst the design of study modules for higher education students is a pedagogic process which befits the academic programmes offered to students.

➢ Environmental Management: Most initiatives on creating behavioural change amongst employees have made use of environmental management tools. For example, Baumgartner and Winter (2014:167) developed a management game called *Sustainability Manager* to "train employees and to develop sustainability-related competencies". It is a business simulation game where players have to take environmental management decisions such as those relating to eco-efficiency and raw materials sourcing amongst others.

➢ Human Resource Management and Development: Others such as Jackson et al. (2012:430) appeal to human resources (HR) management and development personnel to take on this role when they say that: "Now the time has come for HRM and HRD practitioners and scholars alike to demonstrate that they can contribute to the success of environmental sustainability initiatives in the workplace". Whilst in most organisations, as my research study findings have shown, training initiatives are left in the hands of the HR departments, I do not think that ESD programmes ought to be entirely their responsibility. They need the support of ESD practitioners to assist them in the design process of the training programmes. In fact Lenglet (2014:124) makes this point quite clearly by stating that "more and sounder research is needed on how ESD-inspired content and learning methods can make a real difference in getting people to move onto paths of sustainability".

➢ Education and Training for Employees: My research findings offer a platform for further debate on the need for ESD practitioners to find ways of engaging employees in a manner that leads to a change in their behaviour. The findings have given support to claims made by Jackson et al, 2011, in Zibarras and Coan (2015: 2125) that "environmental training may be unsuccessful if there is an inadequate needs analysis [and] poor trainee readiness..". My research study implies that ESD practitioners may need to work closely with HR departments within organisations if they are to make attempts at finding routes to a design process for ESD programmes to take place within organisations. Results from Zibarras and Coan's survey (2015) on current HRM practices used to promote pro-environmental behaviour in a sample of 214 UK organisations found that internal awareness-raising campaigns were among the most prevalent methods used by organisations whilst education and training ranked significantly lower. They claim that "despite its popularity by

organizations, the effectiveness of the awareness-raising approach in terms of actual environmental behaviour change is questionable" Zibarras and Coan (2015: 2134). Statements and recommendations made by these authors in their paper that was published during the last stage of my own research study strengthen the significance of my research findings. Based on my research findings, I fully agree with Zibarras and Coan) when they argue that

"despite the potential costs, organizations may need to involve employees in formal education programs aimed at developing and encouraging pro-environmental behavior; it is through providing education and training that employees can learn to enact environmental changes and become aware of the organization's efforts toward sustainability."

Zibarras and Coan (2015: 2134)

I have cited their statement in full not only because it is the most recent literature I have reviewed for the purposes of my study, but also because it summarises the need for and significance of my own research enquiry and brings to the fore the importance of my research as a contribution to ESD in a highly under researched area. The figure below encapsulates the 'how' element of ESD programmes for employees. It: (a) takes into account the challenges facing organisations; (b) suggests the three components needed for an ESD training programme for employees; and (c) identifies four key factors that would contribute significantly to successful progress towards attaining the sustainability goals of the organisation.
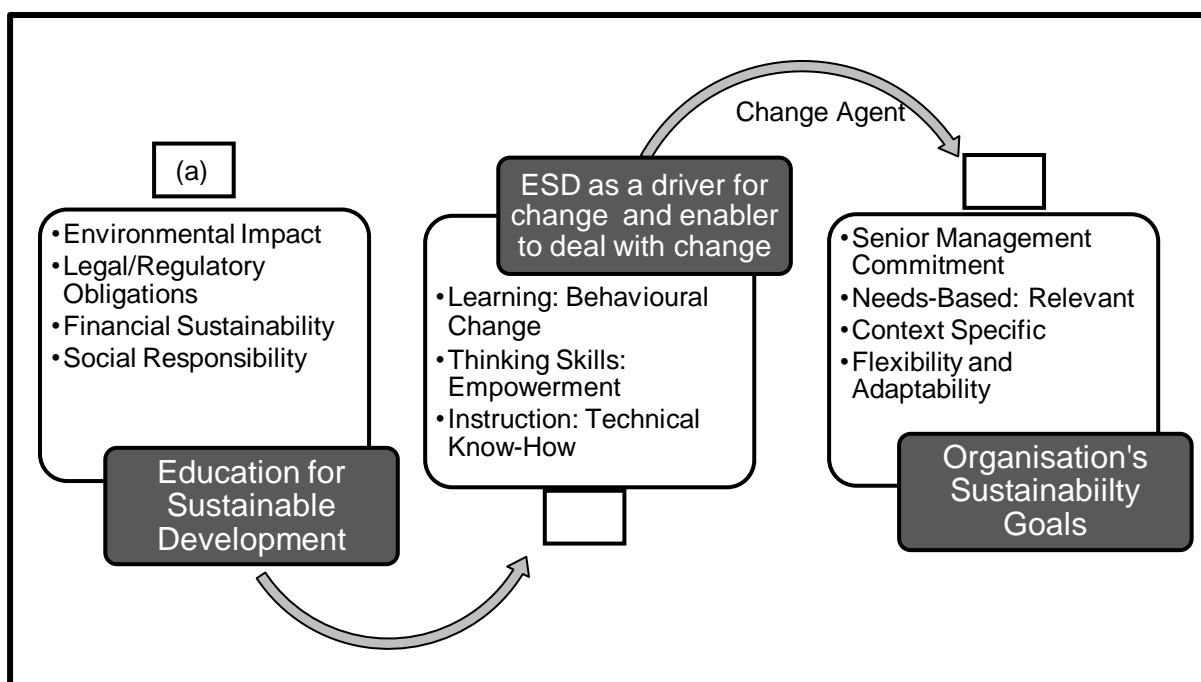

Figure 59: The Role of ESD in Employee Learning and Training

6.3.2.1 Academic Curriculum and Higher Education Providers

As I have emphasised throughout my write up, the focus of my research study is on ESD for a specific target group: employees. However, if one were to take academics as a set of employees, then my research enquiry and the related findings make it abundantly clear as to the need to address ESD for employees. Academics and educators in UK higher education providers are being offered guidance by the Higher Education Academy (Education for Sustainable Development: Guidance for UK Higher Education Providers, June 2014:1) to "incorporate education for sustainable development within the curricula". The guidance "is intended for educators working with students to foster their knowledge, understanding and skill in the area of sustainable development… [whereby] educators are encouraged to use it as a framework within their own disciplinary context…" (ibid: 4). My findings suggest that this approach runs the risk of failure. Those interviewed in my study that had a teaching and research role at UX expressed frustration at this concept whereby they are expected to redesign their academic programmes and make room for ESD. Unless employees, in this case educators in higher education institutions, are given the opportunity to be a part of a needs based and context specific training programme on ESD, how are they expected to feel the need or be motivated or have the skills to make the changes in the academic programmes they offer to their students?

A prevalent constraint to introducing ESD across the organisation that was identified by my research participants at UX was work overload. Members of staff already feel they are struggling to cope with their current work load and are unable to see how employees would be able to find time to engage in ESD. This was one reason why I undertook this exploratory exercise to find ways how employees become part of ESD training and make changes to their behaviour in order to live a more sustainable lifestyle. The research findings suggest quite strongly that employees believe that for this to occur, training must be needs based, context specific and action oriented. Furthermore, my study confirms that such a process must be supported by senior management.

6.3.3 Limitations and Constraints

No research study takes place without having to encounter limitations and constraints. In several sections of the write up, particularly in Chapters Three and Five, reference is made to the limitations and constraints I came across throughout the entire research process, namely (a) sample size; (b) generalisability; and (c) unexpected outcomes.

6.3.3.1 Sample Size

Section 3.6.2 presents the difficulties encountered in accessing research participants to collect data which is a frequently problematic point for social researchers resulting in a small sample size. However, in section 5.2.2 arguments are put forward to highlight the fact that since the interviews carried out were rich and voluminous, I experienced what is termed as redundancy of data through the law of diminishing return. This raises the argument that despite having a small number of research participants, the richness and depth of the data collected was adequate for the purposes of seeking answers to the research questions of the study.

6.3.3.2 Generalisability and Relatability

In section 5.3.3, a significant point is made about the relatability value of small scale projects which in the case of this study carries additional value because the process involved in implementing ESD programmes in employee training can be adapted and adopted in other organisations external to the research context.

6.3.3.3 Unexpected Outcomes

I discussed the unexpected outcomes of the research journey undertaken for the purposes of this study in section 5.3.2. These were broadly concerning the challenges I came across in gaining access to research participants that would be willing or allowed to come forward to participate in the interview; the lack of awareness on de Bono's work in the field of thinking skills amongst the participants at the research context; and the apparent lack of confidence or feeling of disengagement by the research participants on matters related to employee training and sustainable development.

6.4 Recommendations and Areas for Further Research

This section includes a list of recommendations that I believe would assist organisations should they embark on a training programme on sustainable development for employees as part of their overall sustainability strategy. I also highlight areas for further research.

6.4.1 Recommendations

The implications and recommendations on developing action strategies for sustainable living amongst employees that can be drawn from this research study are:

1. Initiate rigorous and consistent training for all employees in soft skills, though thinking skills training, is preferable.

2. Adopt a participative approach enabling employees to identify their own training needs and engage in the design of their training programmes. This can be done by introducing a scheme to enable employees to identify their own training needs and participate in the design of their training and staff development. Such a scheme could be spearheaded by the HR and Staff Development Department with the support of the expertise held at the IESD.

3. Revamp or market the staff survey scheme amongst UX staff and tap into it as a vehicle to engage with employees in order to assist them to list their training needs on ESD and consult with employees throughout the design process of the training programme to ensure it is based on relevance to UX staff and context.

4. Infuse thinking skills in ESD training programmes.

5. Senior management need to be seen as being committed to sustainable development at UX and ought to ensure that it is a strong and sustained commitment.

6. Publicise information and initiatives on sustainable development amongst UX staff effectively and efficiently through staff forums, staff café sessions and team meetings within every department across the organisation.

7. Phase in a compulsory ESD staff training session for all members of staff, the content of which takes into account the specific needs and context of target groups.

8. ESD training needs to place a strong focus on the ease and simplicity of taking charge of one's decisions, actions and behaviours in a manner that identifies those that can be altered or changed to lead a more sustainable lifestyle.

9. Draw up a strategy for employee engagement and training on sustainability that is infused in the corporate strategy of the organisation supported by a system for periodic review.

6.4.2 Further Research

The research study was conducted with a small set of employees at University X in the UK, and is therefore not representative of employees as a whole. However, as I have argued in Section 5.3.3, it should be sufficient to shed light on the process required by practitioners when designing ESD programmes for employees. Nonetheless, through the study I have been able to identify possibilities for further research. These are listed below:

- It would be interesting to trial the needs-based process in different organisations through comparative research on how public and private sector organisations adopt this process to give a deeper insight to organisations wishing to embrace the concept of ESD for their employees.
- Another area of future research would be an analysis of the financial, social and environmental impacts the implementation of a needs-based programme has within the organisation and its immediate community.
- I carried out my study in my capacity as an ESD practitioner but one that did not form part of the organisation where I collected the data. A further study from an insider-researcher through the participatory action research paradigm may flag up information that I was unable to collate through my own study.

6.5 A Few Final Thoughts

I believe that I have made a sufficiently strong case for the pressing need to introduce ESD in organisations as a route to:

- Facilitating behavioural change amongst employees.

- Instilling effective thinking skills practices in employees.

- Establishing a learning environment in organisations.

- Instigating institutional change and social transformation.

- Meeting the environmental legal and regulatory obligations of organisations.

- Ensuring the overall sustainability (financial, social and environmental) of organisations.

Ultimately I hope that my work is a contribution to creating a society that is sufficiently confident and empowered to take informed decisions and responsible actions for environmental integrity, economic viability and a just society for present and future generations while respecting cultural diversity (UNESCO, 2014).

I look forward to using the skills I have gained from my research study in order to be a change agent through my work as an ESD practitioner. It has helped me to improve my practice by discovering routes to implementing ESD across organisations.

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Appendix 1

Participation Information Letters - Interviews

Participant Information Sheet for Employees at University X, as part of Doctoral Research Being Conducted by Alexandra Mifsud at London South Bank University (UREC no: 1353)

__Research Study: Developing Action Strategies for Sustainable Living Amongst Employees__

You are being invited to take part in a research study by Alexandra Mifsud, a PhD candidate at London South Bank University. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully. Talk to others about the study if you wish.

Ask me if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

The aim of this study is to assist employees acquire cognitive and practical skills that will help them to improve their quality of life in relation to sustainable development at work. Employees within organisations are frequently not considered as a specific target group in education for sustainable development campaigns and initiatives. This research study aims to provide a valid contribution to education for sustainable development in organisations by exploring routes to a needs-based training programme for employees that would bring about (i) behavioural change; (ii) improved sustainability performance, and (iii) financial savings across the organisation.

In total, between 12 and 15 people will be interviewed with a further 3-4 people being involved in casual conversations.

It is up to you to decide whether or not to take part. If you do, you will be given this information sheet to keep and be asked to sign a consent form. You are still free to withdraw anytime up to the submission of the dissertation and without giving a reason. A decision to withdraw, or a decision not to take part, will not affect my programme of study.

If you are willing to participate, you will be invited to attend for an interview at UX campus lasting approximately 45 – 60 minutes at a mutually agreeable date and time. This study is planned to last five months. During the interview, the researcher will explore with you the relationship of UX with sustainability; employee training and development as well as thinking processes, behavioural change and social transformation at the workplace. For ease of later analysis, the researcher will record the conversation with your permission as well as take notes. If you do not wish to be recorded but are still willing to participate, the researcher will take notes only.

It is not anticipated that you will be at any disadvantage or suffer any risk from this study. The information you share with the researcher will assist the researcher gain a better understanding in the design of education for sustainable development training programmes. Some individuals may gain some benefit from having the opportunity to discuss this topic with a receptive listener.

You are free to withdraw from the study and not have your information included, at any time up to the time of completion of the dissertation. However, after that time, it would be impossible for the researcher to comply.

The interview recordings and all information received from you will be handled in a confidential manner and stored in a locked filing cabinet and on a password protected computer belonging to the researcher in an environment locked when not occupied. Only the researcher and supervisor will have direct access to the information collected from the interviews and observations. The interview recording will be immediately given a code thus completely eliminating any reference to you by name. Interview recordings will be transcribed between January and February 2014 and the transcripts will be stored on the password protected computer belonging to the researcher until December 2014. It is envisaged that this information will be held only by the researcher and her supervisor at London South Bank until December 2014. No other member of staff at UX will have access to the data collected as part of this research however the research findings will be collectively communicated to UX upon completion of the study. These would have no reference to individual research participants.

This study is being completed as part of a PhD Education for Sustainable Development at London South Bank University. It has been reviewed and ethically approved by the London South Bank University Research Ethics Committee (UREC no.1353).

If you have a concern about any aspect of this study, you should ask to speak with the researcher who will do her best to answer your questions, Alexandra Mifsud on alexandra.mifsud@um.edu.mt. If you wish any further information regarding this study or have any complaints about the way you have been dealt with during the study or other concerns you can contact Prof. Ros Wade on wader@lsbu.ac.uk who is the Academic Supervisor for this study. Finally, if you remain unhappy and wish to complain formally, you can contact the Chair of the University Research Ethics Committee at London South Bank University on ethics@lsbu.ac.uk. Details can be obtained from the university website: http://www.lsbu.ac.uk/rbdo/external/index.shtml

Thank You

Participation Information Letters – Casual Conversations

Participant Information Sheet for Employees at University X, as part of Doctoral Research Being Conducted by Alexandra Mifsud at London South Bank University (UREC no: 1353)

Research Study: Developing Action Strategies for Sustainable Living Amongst Employees

You are being invited to take part in a research study by Alexandra Mifsud, a PhD candidate at London South Bank University. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully. Talk to others about the study if you wish.

Ask me if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

The aim of this study is to assist employees acquire cognitive and practical skills that will help them to improve their quality of life in relation to sustainable development at work. Employees within organisations are frequently not considered as a specific target group in education for sustainable development campaigns and initiatives. This research study aims to provide a valid contribution to education for sustainable development in organisations by exploring routes to a needs-based training programme for employees that would bring about (i) behavioural change; (ii) improved sustainability performance, and (iii) financial savings across the organisation.

In total, between 12 and 15 people will be interviewed with a further 3-4 people being involved in casual conversations.

It is up to you to decide whether or not to take part. If you do, you will be given this information sheet to keep and be asked to sign a consent form. You are still free to withdraw anytime up to the submission of the dissertation and without giving a reason. A decision to withdraw, or a decision not to take part, will not affect my programme of study.

If you are willing to participate, you will be invited to engage in casual conversations with the researcher during the data collection phase of the research study. This will be during the

months of November and December 2013 with a possibility of a further casual conversation in January 2013. These conversations will take place at UX campus lasting approximately 15- 30 minutes at a mutually agreeable date and time. This research study is planned to last five months. During these casual conversations the researcher will explore with you the relationship of UX with sustainability; employee training and development as well as thinking processes, behavioural change and social transformation at the workplace. For ease of later analysis, the researcher will take down notes but will not audio record the conversation.

It is not anticipated that you will be at any disadvantage or suffer any risk from this study. The information you share with the researcher will assist the researcher gain a better understanding in the design of education for sustainable development training programmes. Some individuals may gain some benefit from having the opportunity to discuss this topic with a receptive listener.

You are free to withdraw from the study and not have your information included, at any time up to the time of completion of the dissertation. However, after that time, it would be impossible for the researcher to comply.

All information received from you will be handled in a confidential manner and stored in a locked filing cabinet and on a password protected computer belonging to the researcher in an environment locked when not occupied. Only the researcher and supervisor will have direct access to the information collected from the casual conversations and observations. Notes taken by the researcher during these casual conversations will immediately be given a code thus completely eliminating any reference to you by name. It is envisaged that this information will be held only by the researcher and her supervisor at London South Bank until December 2014. No other member of staff at UX will have access to the data collected as part of this research however the research findings will be collectively communicated to UX upon completion of the study. These would have no reference to individual research participants.

This study is being completed as part of a PhD Education for Sustainable Development at London South Bank University. It has been reviewed and ethically approved by the London

South Bank University Research Ethics Committee (UREC no.1353).

If you have a concern about any aspect of this study, you should ask to speak with the researcher who will do her best to answer your questions, Alexandra Mifsud on alexandra.mifsud@um.edu.mt. If you wish any further information regarding this study or have any complaints about the way you have been dealt with during the study or other concerns you can contact Prof. Ros Wade on wader@lsbu.ac.uk who is the Academic Supervisor for this study. Finally, if you remain unhappy and wish to complain formally, you can contact the Chair of the University Research Ethics Committee at London South Bank University on ethics@lsbu.ac.uk. Details can be obtained from the university website: http://www.lsbu.ac.uk/rbdo/external/index.shtml

Thank You

Appendix 2

Written Consent Form - Interviews

Title of study: *Developing Action Strategies for Sustainable Living Amongst Employees*

Name of Participant:

_____

- I have read the attached information sheet on the research in which I have been asked to participate and have been given a copy to keep. I have had the opportunity to discuss the details and ask questions about this information.

- The Researcher has explained the nature and purpose of the research and I believe that I understand what is being proposed.

- I understand that my personal involvement and my particular data from this study will remain strictly confidential. Only researchers involved in the study will have access.

- I have been informed about what the data collected will be used for, to whom it may be disclosed, and how long it will be retained.

- I have received satisfactory answers to all of my questions.

- I hereby fully and freely consent to participate in the study which has been fully explained to me.

- I hereby consent to the audio recording of the interview.

- I understand that I am free to withdraw from the study at any time, without giving a reason for withdrawing or any penalty being incurred.

Participant's Name: (Block Capitals)   ....

Participant's Signature: ....

As the Researcher responsible for this study I confirm that I have explained to the participant named above the nature and purpose of the research to be undertaken.

Researcher's Name: (Block Capitals)   ....
Researcher's Signature: ....

Written Consent Form – Casual Conversations

Title of study: *Developing Action Strategies for Sustainable Living Amongst Employees*

Name of Participant:

_____

- I have read the attached information sheet on the research in which I have been asked to participate and have been given a copy to keep. I have had the opportunity to discuss the details and ask questions about this information.

- The Researcher has explained the nature and purpose of the research and I believe that I understand what is being proposed.

- I understand that my personal involvement and my particular data from this study will remain strictly confidential. Only researchers involved in the study will have access.

- I have been informed about what the data collected will be used for, to whom it may be disclosed, and how long it will be retained.

- I have received satisfactory answers to all of my questions.

- I hereby fully and freely consent to participate in the study which has been fully explained to me.

- I hereby consent to the reproduction of casual conversations (where applicable).

- I understand that I am free to withdraw from the study at any time, without giving a reason for withdrawing or any penalty being incurred.

Participant's Name: (Block Capitals)   ....

Participant's Signature: ....

As the Researcher responsible for this study I confirm that I have explained to the participant named above the nature and purpose of the research to be undertaken.

Researcher's Name: (Block Capitals)   ....

Researcher's Signature: ....

Appendix 3

Interview   Name:
    Code:

Demographics

Gender: Male/Female

Age Group: 18-29   30-45   46-59   60-75

Position:

Dept/Section:

Number of Years Working at UX:

Resides locally: Yes/No

Theme 1 – Type of Organisation

1a. What do you know about UX's commitment (if any) to ESD?

1b. Were you ever offered training in ESD through Staff Development Programmes or through any other means?

1c. Do you know about any ESD training for UX staff?

1d. Were you ever invited to participate in any staff initiatives (competitions, fairs, etc) on sustainable development?

1e. Have you ever heard of any sustainable development initiatives for UX staff?

Theme 2 – Characteristics of ESD

2a. From your experience at UX what factors would need to be considered when an organisation (such as UX) decides to commit to ESD? CAF

2b. Can you list any pluses and minuses (Constraints and Opportunities: Financial, Social and Environmental Considerations) UX would need to address before embarking on such a path towards SD? P.M.I.

Theme 3 – DeBono's Thinking Skills Programmes

3a. Are you aware of any thinking skills/problem-solving/decision-making training for UX staff? (i) If so, were you invited to attend? (ii) did you attend any?

3b. If UX staff are equipped with such skills, do you think it would influence their role in (i) their involvement in designing training programmes (having their say through staff forum), and (ii) leading a more sustainable lifestyle (at UX and elsewhere)?

Theme 4 – Employee Training

4a. Should UX organise ESD Programmes for members of staff, (i) list the people involved/affected? And (ii) how would they feel (what would their position be on the matter)? O.P.V.

4b. What factors should be kept in mind when designing ESD Programmes for UX staff? CAF

4c. Can you list 3 main aims/goals/objectives you consider key when designing ESD Programmes for UX staff? A.G.O.

4d. What do you think are the skills you require that would enable you to lead a (more) sustainable lifestyle? Can you prioritise the 3 most important skills? FIP

Theme 5 – Behavioural Change; Social Transformation; Institutional Change

5a. List the three skills you consider most important for UX staff to acquire for them to become sufficiently engaged in a process of change for sustainable development (empowerment). FIP

5b. What would the consequences be of having UX staff involved in the design of ESD programmes? C&S

5c. In your opinion how can UX embark on creating institutional change? (what would be required for such a process to take place?)

5d. List three key elements that ESD programmes should have for UX staff to be able to extend the behavioural change towards sustainable development beyond the UX work setting. FIP

5e. Can you identify alternatives to ESD for UX staff that would successfully bring about staff behavioural changes and an institutional change for the attainment of sustainable development goals? A.P.C.

De Bono's thinking tools:
CAF – Consider all Factors
P.M.I. – Plus, Minus, Interesting
O.P.V. – Other People's Views
A.G.O. – Aims, Goals and Objectives
FIP – First Important Priorities
C&S – Consequence & Sequel
A.P.C. – Alternatives, Possibilities, Choices

Appendix 4

Developing Action Strategies for Sustainable Living Amongst Employees

Alexandra Mifsud

Abstract

Employees are frequently not considered as a specific target group in education for sustainable development campaigns. Adults at their place of work are the decision makers and problem solvers of the present generation. It is these decisions and actions that will impact the quality of life of present and future generations as well as the sustainability of our planet. This paper presents the work in progress of research taking place with members of staff at a University in the UK. It aims to provide a valid contribution to education for sustainable development in organisations by exploring routes to a needs-based training programme for employees that would bring about (i) behavioural change; (ii) improved sustainability performance and (iii) financial savings across the organisation. The paper will put forward an example of the 'how' element, or rather the process required by practitioners to design education for sustainable training programmes that are relevant to different audiences. The emphasis in the process will therefore need to be its adaptability in that it possesses elements that would render it possible to be used for employee training in other work contexts and flexibility to make it work and fit around the day to day demands and challenges of any given organisation. Finally the paper will demonstrate that such action strategies need to be attractive and user-friendly for practitioners to believe that they can adopt the model and make it their own (or rather make it that of their target groups).

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1   Introduction

The key questions at the outset of this research study were: (i) how can the use of de Bono thinking skills lead to employee participation during the course design in a manner that facilitates their own training programme?; (ii) how can the application of thinking skills to the design of employee programmes in education for sustainable development bring about employee empowerment in order to induce positive behavioural changes necessary in achieving an improved quality of life?; and (iii) what form should employee programmes in education for sustainable development take if it is to assist employees lead a sustainable lifestyle? Herman B. "Dutch" Leonard in Epstein (2008), refers to two forms of corporate social responsibility programmes. Those that talk a lot but "don't actually do very much or generate much impact" and those that are engaged in "socially responsible activities being carried out on a material scale and significant results are actually being achieved". Like Leonard, it appears to the author that there is "still far too much of the former and not nearly enough of the latter" (ibid). This ongoing research study explores the level of contribution education for sustainable development (ESD) training programmes for employees within an organisation could possibly have to create a shift for more corporations forming part of the latter of the two described above. The sustainable development factors that organisations are expected to take into account when drafting their corporate plans are many. Whether these factors are regarded as constraints or challenges depends on the adaptability, flexibility and commitment of the organisation and its work force.

1.1   Education for Sustainable Development Within Organisations

Businesses and organisations operate on models that, at best, acknowledge the need to improve their environmental performance as part of their compliance to regulatory and legal measures. However, the spirit of sustainable development in the Brundtland report suggests that they ought to be more "flexible and responsive, more diverse and devolved organisational forms than those dominant at the present stage in industrial society." Roome and Oates, in Huckle and Sterling (1996). Hence there is requirement for a learning framework that is (a) able to be sensitive to the ever changing needs of society and the environment and; (b) equipped with the skills to respond appropriately to these needs. Here is the challenge for education in business management and employee training and development. All members within an organisation must share the vision for a sustainable future alongside working on improving environmental performance in the present.

1.2 Thinking Skills

This study includes experimental work on the implementation of de Bono thinking programmes both in its methodology as well as in the process that may be adopted in the design of ESD programmes for employees. The author is of the opinion that there is significant relevance between thinking and sustainable development because as Morris et al. (2009), state "Our contention is that learners cannot deal with the wicked problems of sustainability without learning to think and act systematically." However, whilst there is ample discourse on systems thinking and ESD, there appears to be none about the specific implementation of the worldwide acclaimed thinking programmes by de Bono in the field of ESD. It is for this reason that this study investigates the concept further. The emphasis on thinking processes has in fact been highlighted by Cloud when discussing the UN Decade for Sustainable Development (2005-2014) in Cloud et al. (2009), whereby he suggests that "one of the greatest opportunities that EFS can offer to EE that will strengthen its capacity over the next 10 years is the contribution of the tools, concepts, archetypes, and "habits of mind" of systems thinking and system dynamics education-a core content area of EFS."

Hence, the overall aim of this research study is to assist employees acquire cognitive and practical skills that will help them to improve their quality of life in relation to sustainable development. The subsidiary aims are: (i) to provide the author with an opportunity to participate in dialogue with the research participants that would bring to the fore their expectations and needs regarding their participation in a course in ESD; (ii) to assist research participants move from dialogue to action by devising a formula for a course design that would serve as the basis for the process involved in the development of employee training on ESD; and (iii) to improve the author's own skills as a change agent through the experience of engaging in an interactive and dialogical research.

2 Employee Training and Sustainable Development at the Workplace: Constraints and Opportunities

This paper discusses the enquiry currently underway in order to explore whether it would be beneficial for organisations to invest in training and development of their own employees on matters relating to sustainable development and if so, what would the best approach be.

2.1 Legal Obligations and Reporting

Most organisations use performance based tools such as the ISO 14,000 series and the EU Ecolabel which are based on environmental management principles. Improving the environmental performance of an organisation does not necessarily bring about an increase in the level of environmental literacy of its employees.

Neither does it empower the employees to become proactive in working towards sustainable living. There is little or no room for social transformation. Furthermore, organisations are bound by national and international environmental legislation. For example, the European environmental policy (Article 174 of the Treaty on European Union and of the Treaty establishing the European Community, 2006 C321 *El* 9) provides the basis for a legal framework for

- "preserving, protecting and improving the quality of the environment,
- protecting human health,
- prudent and rational utilisation of natural resources,
- promoting measures at international level to deal with regional or worldwide environmental problems."

One of the instruments within this general framework is a piece of specific legislation on sustainable development with a first draft document in May 2001 'A Sustainable Europe for a Better World: A European Union Strategy for Sustainable Development' (Commission proposal to the Gothenburg European Council) (CaM (2001) 264 final-not published in the Official Journal). In December 2005 the European Commission presented the review of the Sustainable Development Strategy-A platform for action [CaM (2005) 658 final-not published in the Official Journal] (http://europa.eu/legislation_summaries/environmentlsustainable_developmentll28117_en.htm, accessed on *27/0312014).*

Environmental legislation may be regarded as a minefield for organisations and many of them have addressed the matter by outsourcing the task for legal compliance requirements to specialist service providers or have engaged staff in house. Whilst legislation is an essential tool that assists countries on their journey towards meeting sustainable development goals, it is often implemented using a top-down approach in organisational structures with staff merely being instructed to change their workflows or work practices with very little environmental knowledge being passed on in the process. The author is of the opinion that this is potentially seen as something that employees have to do because they have been ordered to do it. If that is the case, then whilst legislation is helping organisations improve their sustainable development performance, little is being achieved in raising the environmental literacy of the employees or creating a true institutional change. There appears to be a gap in creating a sense of ownership and relevance of initiatives taking place within organisations that would sufficiently bring about behavioural and institutional change leading to social transformation.

2.2   Maintaining Financial Sustainability

Compliance to environmental legislation poses potential financial challenges to organisations as many fear significant capital outlay or productivity losses. Addressing financial challenges and opportunities arising from working towards sustainable development is key. The conventional argument that environmental

protection comes as an extra financial and productivity burden for companies has been challenged in recent years. Indeed, some analysts argue that "improving a company's environmental performance can be associated with better economic performance for a variety of reasons." Ambec and Lanoie in Jackson et al. (2012). These reasons include:

1. Environmental products may allow a firm to reach new customers;
2. Environmental innovation may reduce operational costs;
3. Adopting a sustainable development plan may stimulate a change towards increased performance in the firm;
4. Improved sustainability performance increases the likelihood of accessing financial capital and grants;
5. Better sustain ability performance may improve a firm's access to human capital.

(adapted from Ambec and Lanoie in Jackson et al., 2012)

It is case studies of successful implementation of sustainability initiatives as documented in Jackson in Jackson et al. (2012) that could offer the confidence in other industries to shift their organisation towards sustainability. Investing in staff development programmes on sustainable development may well be instrumental in attaining success.

2.3   Social Responsibility of Organisations

Businesses are becoming increasingly aware of their impact on the environment and society leading them to take responsibility of managing sustainability. This is sometimes referred to as the 'triple bottom line' or 'people, planet, and profits'. Trends that provide a good impetus for businesses to shift their mindset towards the 'triple bottom line' include green consumerism, socially responsible investing and employees wishing to work for green companies. Whilst these trends do exist they are still not strong enough to encourage some sectors within industry to make the change. However, they are trends that are likely to become important in the future as the level of society's awareness and knowledge increases. One may argue that the key to creating a shift towards sustainability amongst organisations is to embark on education campaigns aimed at raising the awareness and knowledge of citizens. Simply put, if citizens' environmental literacy increases then they will strengthen the green trends thus providing industry the confidence to change their own sustainability performance.

2.4   Education for Sustainable Development for Employees

Literature reviewed in this study highlights that significant research has been carried out on ESD in the formal education sector. Fien (1995, 1996, 2002), Huckle and Sterling (1996), Haigh (2009), and Blewitt and Cullingford (2004), amongst others. Not only is research in the informal and non-formal educational settings lacking,

similarly so are ESD programmes not taking place sufficiently in these settings. They could serve as an ideal platform to target key players in the attainment of sustainable development. These include adults at their place of work where they are the decision makers and problem solvers of the present generation. It is these decisions and actions that will impact both the quality of life of present and future generations as well as the sustainability of our planet. The fact that employees are present in an organised structure at their place of work, providing ESD programmes in a bottom-up approach would not pose insurmountable difficulties (or one would think!). Nonetheless, the main challenge in the provision of employee training remains a logistical one: managing employees' time for training in a manner that would not disrupt the work output of the organisation. This study looks at the barriers that might exist which would prevent an organisation from engaging with their work force in offering training programmes in ESD. Moreover, it is hoped that based on the findings, a model for the manner in which employee empowerment can effectively take place through the design and implementation of ESD programmes can be presented. This model would include sufficient room for flexibility and adaptability so that it would serve as a framework for other organisations to use with their own employees in their endeavours to assist in attaining a sustainable lifestyle for all. The focus will therefore be on the *process* and not the *product* since as rightly put in the UNESCO Concept statement, 2004 as cited by Higgitt (2009):

> There is no universal model of education for sustainable development. While there will be overall agreement on the concept, there will be nuanced differences according to local contexts, priorities and approaches .... [these] must therefore be locally defined to meet the local environmental, social and economic conditions in culturally appropriate ways.

The author believes that this central characteristic of ESD is paradoxically its strength and its weakness. The fact that no set model has been put forward in any prescriptive manner has left many practitioners in the field and the general public grappling with the 'how' element of ESD. Yet, the absence of a pre-set universal model is what enables practitioners to become intrinsically involved with their respective target groups making ESD relevant to them. This study aims to put forward an example of the process required by practitioners when designing ESD training programmes relevant for employees. The emphasis in the process therefore needs to be its adaptability and flexibility. It needs to be attractive and user-friendly for practitioners to feel confident in adopting the model and making it their own (or rather that of their target groups).

3   Methodology and Study Design

3.1   Research Paradigm and Methodology

It was determined that this research best fits within the ontological position of constructionism as it "asserts that social phenomena and their meanings are continually being accomplished by social factors .. .in constant state of revision."

Bryman (2004). As a social researcher, the author is aware that personal values and beliefs can "intrude at any or all of a number of points in the process of social research: choice of research area; formulation of research question; choice of method; formulation of research design and data collection techniques ... " ibid (2004). In fact the author's own experiences of working at grass root level with environmental NGOs as well as the involvement in de Bono thinking programmes bore a strong influence on the choice of the research both in the content and methodology adopted. Furthermore, social constructionist grounded theory provides a framework for researchers to be reflexive about how "their prior interpretative frames, biographies and interests, as well as the research context, their relationship with research participants, concrete field experiences, and modes of generating and recording empirical materials" Charmaz (2006), influence their analysis. The author is influenced by the paradigm of critical educational research since "its intentions are transformative: to transform society and individuals to social democracy" Cohen et al. (2007). Upon examining the definition for action research by McNiff and Whitehead (2010), it became clear that the aims of this study would best be met through educational improvement particularly the nature of processes of improvement where the researcher has "the capacity to influence the future through acting intentionally in the now .... [the researcher has] the responsibility of ensuring that we act well, to create the kind of future we wish to live in." Through the application of de Bono's thinking tools the author attempts to devise a process for the design of educational programmes amongst employees that would bring about employee empowerment. This is being done through action research whereby the author explores the process for social and institutional transformation within the organisation because "the community and researcher together produce critical knowledge aimed at social transformation" and "theory and practice are integrated", Anderson and Herr (2005).

3.2   Research Context and Design

The study is with a set of employees at University X (UX) in Leicester, UK. Despite having the full support of its Environmental and Sustainability Officer who introduced the study to UX's Environmental Champions Network, the response has been limited. To date it is only employees holding a post that allows them to potentially manage their time in a flexible manner have come forward to be interviewed. This highlights the intrinsic problem that exists in institutions and organisations: accessing employees especially those within the lower ranking posts. It could also suggest that ESD and sustainability in general is not met with much enthusiasm by individuals in a work place setting even when the organisation, as is the case with UX boasts of becoming "a leader in the field" in its sustainability strategy https:/ /www.UX.ac. uklabout -UX/sustainability /sustainability-strategy. aspx (accessed on 19/03/2014).

3.3   Triangulation and Sampling

For the purposes of this study *data triangulation* was adopted since it uses a variety of data sources such as "interviewing people in different status positions or with different points of view", Patton (2002). Indeed data is being collected through interviews and casual conversations with employees occupying different roles and from various departments at UX to obtain a multi-faceted perspective on the area being investigated. *Methodological triangulation* using multiple data collection methods to study a single problem, namely documents, interviews, casual conversations and observations has also been adopted. Since accessing research participants for data collection was a major difficulty it was decided to opt for *opportunistic sampling* which "takes advantage of opportunities that open up", Miles and Huberman (1994). This was supported by the *snowball sampling* technique whereby other research participants were contacted through suggestions made by the first interviewees.

3.4   Interviews

A number of the interview questions were designed by using de Bono's thinking tools. The Direct Attention Thinking Tools recently renamed Power of Perception ᴛᴍ Tools were selected as being most appropriate for the design and analysis of the interview questions since the tools enable both the employees and the author to have a broad and inclusive viewpoint; assist in creating a framework for defining a situation with an improved ability to consider consequences before any action is taken, de Bono Consulting, 2009. The interview questions fed into the five main themes of the study as can be seen in Table 1.

Furthermore, the data collected falls under the categories: (i) level of awareness and understanding of sustainable development issues; (ii) relevance between the context of the participants' workplace and sustainable development; (iii) needs of the workplace as a commercial entity; and (iv) individual needs of participants in terms of thinking processes that would lead to empowerment and sustainable living.

4   Preliminary Results

The members of staff at UX that have participated in the data collection for this study are not representative of the organisational structure of UX. This is because it has proven challenging to find members of staff occupying lower level posts able to participate in the research. Nonetheless it is hoped that with some further perseverance the study will obtain the views of staff within such categories. That said this observation raises concerns about accessibility to all members of staff. If it is so difficult for the organisation to release them for a thirty minute research interview, it puts into doubt the organisation's commitment to engage with lower level members of staff and offer training programmes on thinking skills and ESD to them.

Developing Action Strategies for Sustainable Living ... 239

Table 1 Themes

Themes of the study	
Type of organisation	Commitment to ESD
	Staff development programmes
	Staff initiatives
Characteristics of ESD	The strands in ESD
	Constraints and opportunities
	• Legislation
	• Financial, social, environmental considerations
DeBono's thinking skills programmes	Thinking skills
	deBono's thinking programmes
	Applicability of deBono's thinking programmes to
	• The design of employee training
	·ESD
	• A sustainable lifestyle
Employee training	Staff development programmes for SD
	Skills for sustainable lifestyle
	Design process of needs based employee training
Behavioural change, social transformation, institutional change	Empowerment skills
	The role of a change agent
	Social transformation and institutional change
	• Employees
	• Transfer of behaviour changes beyond the workplace

4.1 Commitment to ESD; Staff Development Programmes; and Staff Initiatives

The responses from the respondents so far indicate that they are aware of UX's commitment to sustainable development with some referring to the university's sustainability strategy. However, apart from the work done at the Institute of

Energy and Sustainable Development, it appears that the respondents are not aware of or see little need for UX's education and learning role in sustainable development. None of the respondents were offered, and therefore have not participated in any ESD training by UX. The initiatives predominantly led by the Environmental and Sustainability Officer at UX such as the Green Impact and Smart Spaces have good visibility as all respondents know that they exist with some being heavily involved in them.

4.2   Strands in ESD: Constraints and Opportunities, Financial, Social and Environmental Considerations

In order to explore the process ESD practitioners may need to follow when designing staff training programmes, it was necessary to obtain UX staff views on what they perceive as key factors to be considered together with any constraints (Tables 2, 3).

On the other hand, the respondents were of the opinion that by introducing ESD UX would benefit from several opportunities (Table 4).

Table 2 Key factors to be considered before UX commits to ESD

Clear aims on what is to be achieved

Understanding and commitment from the senior management

An assessment of the existing knowledge, skills and attitudes of staff

An assessment of the process, costs and resources required for delivery of ESD training

High level of staff engagement and motivation

Table 3 Constraints

Resistance from members of staff

Lack of commitment by departments and faculties across UX

Time and financial limitations

Difficulty in selling the concept that ESD ought to be a priority for all across the organisation

Table 4 Opportunities

Giving UX a better public profile

Contributing to creating a more sustainable society

Improving its position in the university league tables

Increasing awareness on sustainable development issues

Achieving a more efficient and healthier work environment for UX staff and students

4.3   Applicability of DeBono's Thinking Programmes to the Design of Employee Training; and to a Sustainable Lifestyle

If ESD training programmes are to be relevant to employees then the latter need to be consulted upon as part of a needs assessment exercise. Informal conversations between the researcher and UX members of staff suggest that employees do not always feel sufficiently empowered to recognise their role in this stage of their staff development training. Neither do they feel equipped with the competencies to make the necessary behavioural changes towards a more sustainable lifestyle. This study has therefore carried out some exploratory work on the applicability of thinking programmes to ESD for employees. Respondents gave mixed responses about training in thinking skills or other 'soft skills' with most stating that they do not know of and have not been offered any such training at UX. The respondents are of the view that equipping employees with 'soft skills' has the potential to assisting them to lead a more sustainable lifestyle with one respondent suggesting that this is because the 'soft skills' lead to more responsible decisions. Whilst another believes that it would help staff to carry out their role at UX better and more in line with sustainable development goals of the organisation. Most were able to see the relevance between 'soft skills' training, employee engagement and empowerment yet one respondent believes that UX staff are already equipped with the skills to design training.

4.4   ESD for Employees; Skills Needed for Sustainable Lifestyle; and the Design Process of Needs-Based ESD Employee Training

It was necessary to obtain the views of UX staff on the process they perceive as key when embarking on ESD for employees. Interestingly not all respondents are of the opinion that ESD training would involve employees across the entire organisation. Respondents believe that the senior management team, Human Resources (HR) department, Institute for Energy and Sustainable Development (IESD), Estates department and the Environmental Champions Network would play a major role. The respondents did comment that some of the people involved may offer a degree of resistance and/or feel aggravated, whilst others may receive the initiative positively or simply view it as their role (particularly the HR and IESD teams). Upon being asked to identify the factors that should be kept in mind when designing ESD for UX staff, the respondents listed (Table 5).

The findings highlight that UX staff consider the following aims should drive ESD programmes for employees across UX (Table 6).

The respondents identified that for them to lead a more sustainable lifestyle they would benefit from (i) stronger ability to make and maintain behavioural changes by exploring alternative ways of doing things; (ii) improved thinking; (iii) more

Table 5 Key design factors for ESD programmes for employees

Ensuring that the training leads to tangible changes in behaviour
Relevance to the role members of staff play within the organisation
Time, funds and expertise available for ESD initiatives


Table 6 Aims of ESD programmes at UX

Assessing existing knowledge of UX staff and building upon it
Assisting staff in identifying the need to lead a sustainable lifestyle
Establishing and maintaining employee motivation and engagement
Creating an impact
Obtaining support from senior management
Ensuring the training time is kept to a minimum and is enjoyable

support both in knowledge, funds and time; and (iv) better skills on how to engage effectively with other colleagues in order to communicate sustainable development issues.

4.5 Social Transformation and Institutional Change; Transfer of Behaviour Changes Beyond the Workplace

Since this study explores ways of how ESD supported by thinking skills can potentially bring about behavioural and institutional changes necessary for the attainment of sustainable development, it was important to seek the opinion of UX staff on the skills that would assist in this process. Awareness; knowledge and understanding; motivation; change of outlook and being given the authority to make the changes were identified as being key skills that staff should acquire in order for them to become sufficiently engaged in a process of change to sustainable development. The study also found that providing incentives and allocating time would increase staff motivation and engagement. It was encouraging to note respondents believe that having staff involved in the design of their own ESD programmes would have a positive impact as it would create an effective process for behavioural and institutional change (Fig. 1).

The study revealed that for the changes in behaviour for sustainable development to be extended beyond the workplace setting it is necessary that the ESD programmes for staff infuse ethical responsibility and commitment by assisting them to internalise the principles of sustainable development. It was suggested that this could be done by exploring the differences between the work and home setting and through examples from outside the work environment as tasks or case studies forming part of the staff training module. Sharing the organisation's vision on sustainable development was another key element that would assist in the process of institutional change and social transformation.
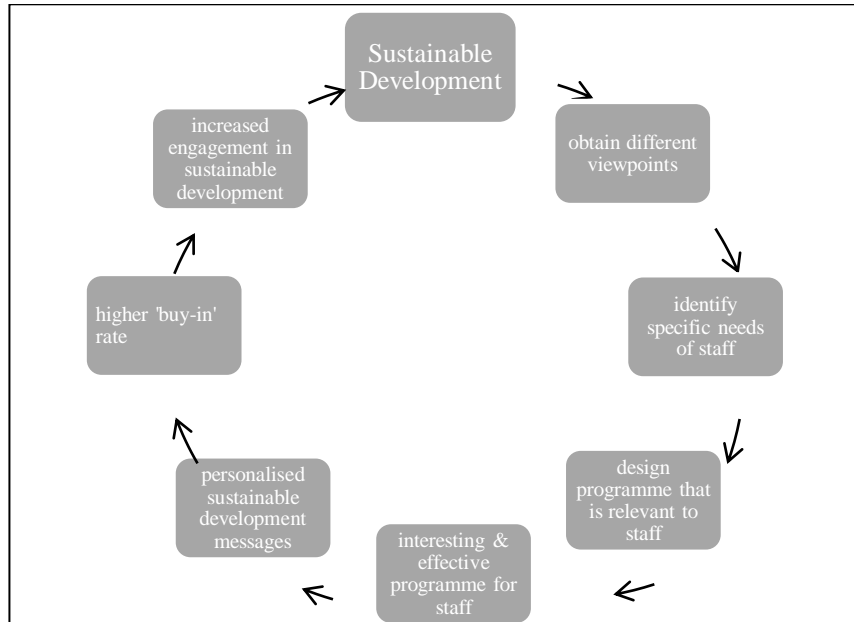
Fig. 1 Suggested process offering adaptability and flexibility in the design of ESD employee programmes

5   Conclusions

The results obtained point towards sufficient scope to integrate thinking skills in the process of designing ESD programmes for employees. There is strong evidence that a needs-based approach is regarded as bringing about higher success rate both in attaining sustainable development goals for the organisation and instigating behavioural and institutional change. Embarking on a process for the design of ESD programmes for employees does indeed present constraints and challenges. The study reveals that lack of commitment from senior management, resistance to change by employees coupled with financial and time constraints are the major challenges that could hinder ESD programmes for employees. Yet organisations may already have a network such as the Environmental Champions Network at UX which could be used to infuse the needs-based approach in order to seek viewpoints of employees to tailor-make the ESD programmes. This is not far from the Sustainability Strategy at UX:

Teaching - Inspiring Sustainability: To help staff and students become responsible 'global' citizens in the face of the environmental challenges ahead of them.

Research - Thinking Sustainability: To develop ground-breaking and interdisciplinary research that advances knowledge on sustainability and establishes UX as a leader in this sector.

Built Environment - Being Sustainability: To reduce our environmental impact and be an exemplar of best practice.

Health and Well-Being - Living Sustainability: To ensure UX is a healthy, creative and inspiring 'space' to study and work.

Community Engagement - Leading Sustainability: To establish UX as a beacon of best practice, a centre of research excellence for sustainability and an ambassador locally, regionally and beyond." Adapted from

https:llwww.UX.ac.uklabout-UXlsustainability/sustainability-strategy.aspx. (accessed on 15/03/2014).

Unfortunately, the preliminary results in this study reveal some of the above aims are not being met. This appears to be particularly the case when equipping staff with the necessary skills, competencies and motivation to make behavioural changes for a more sustainable lifestyle. From the various informal conversations held at UX it emerged that much focus is placed on reducing the organisation's environmental impact through rigorous monitoring of energy use and carbon footprint. This is commendable and ought to be given further support and recognition. Yet there is clearly a lack of vision on ESD for employees. If the organisation is to create an impact on sustainable development then it requires a workforce that is driven by ethical responsibility towards the planet and its people. The study indicates that investment in employee training would be one of the leading factors contributing to an effective social transformation process.

5.1   Limitations of This Study

This paper forms part of a doctoral research being undertaken by the author. It is therefore limited in scope as not all the data from interviews and casual conversations with employees has been collated and analysed. Whilst significant content analysis of literature has been reviewed, the need to review further literature as the doctoral research develops may arise at a later stage after the writing of this paper. Nonetheless, from the content analysis and data collected to date, it is encouraging to see that the niche initially identified by the author at the outset of the research does indeed exist. It is evident from the work carried out thus far that there is a gap in work on ESD through the application of thinking skills amongst employees. The author is of the opinion that on full completion of the doctoral research, there will still be potential areas for future research work in the area. These are highlighted in the following section.

5.2   Future Work

This paper is based on research work currently taking place with a small set of employees at University X in the UK. It is therefore not representative of employees as a whole however it should be sufficient to shed light on the process required by practitioners when designing ESD programmes for

employees. It would be interesting to trial out the needs-based process in different organisations through comparative research on how public and private sector organisations adopt this process to give a deeper insight to organisations wishing to embrace the concept of ESD for their employees. Another area of future research would be an analysis of the financial, social and environmental impacts the implementation of a needs-based programme has within the organisation and its immediate community.

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Appendix 5

We will make a significant contribution to global efforts to achieve environmental sustainability

[blank] University is sector leading in its approach to addressing the sustainability of its campus. It has been able to respond well to HEFCE challenges to reduce energy consumption and to operate more sustainably.

Examples of our successes include achievement of Building Research Establishment Environmental Assessment Method (BREEAM) construction standards, transition to 'green cleaning' on campus, negotiation of utility contracts and the most extensive building monitoring in the sector. The university also has authoritative academic expertise in energy and sustainable development that is widely sought by business and industry. This combination of knowledge and expertise in sustainability management is rare and provides a unique foundation for approaching the significant challenges in managing our resources that we have in common with other universities and large organisations. We anticipate that, in the coming years, utility costs, transport logistics and government pressure will have substantial bearing on how we operate the campus and work in a sustainable way. Hence, we believe it essential to remain a leading practitioner.

However, we aim to do more than respond to regulation and compliance agendas concerning our estate and the way we live and work on campus. We believe that we should become known for embodying sustainability and for preparing our students to embrace sustainability in their lives. It is our ambition not only to draw upon the significant research and technological expertise of academics and professional staff within the university, but become one that is recognised by others for implementing changes that emerge from its own research findings and professional practice. This will require capacity building in our staff, our leaders and our students to equip them with the knowledge as to how their actions can make a difference. Our commitment to teaching our students about sustainability and preparing them to operate sustainably throughout their lives will be a distinct part of the future student experience. Introducing sustainability to curricula, and providing students with opportunities to lead and contribute to our carbon management agenda, will be a distinct 'offer' in the higher education sector.

Please see the following pages for our plans.

29

Our plans to achieve environmental sustainability

1 Teaching about sustainability and helping staff and students become responsible 'global' citizens in the face of the environmental challenges ahead of them		
Our strategy will be...	**We will do this by...**	**Key external measures of our success**
■ Inspiring our students and staff to understand environmental issues and embrace sustainability in their lives ■ Embedding education for sustainable development into the university's Teaching, Learning and Assessment Strategy	■ Creating new interdisciplinary and innovative courses that equip, train and inspire our students to become responsible global citizens and face the global and environmental challenges ahead of them ■ Reviewing the current levels of environmental and sustainability teaching and learning within the university and report on an annual basis ■ Providing training and development opportunities to staff on environmental and sustainability issues	■ National Student Survey result: overall satisfaction with course

2 Developing groundbreaking and interdisciplinary research that advances knowledge on sustainability, and establishes the university as a leader in the higher education sector		
■ Embedding sustainability into research proposals, as appropriate ■ Positioning the university as an international centre of expertise in sustainable development ■ Collaborating with other universities to deliver large-scale sustainability projects	■ Enhancing the current levels of environmental and sustainability research within the university's reporting on an annual basis ■ Pursuing funding opportunities for research in sustainability fields ■ Promoting sustainability networking opportunities across the university to develop research opportunities ■ Establishing partnerships to secure funding for sustainability research	■ Research income per academic FTE ■ Total value of externally sponsored research ■ Percentage ratio of research grants and contracts to total income ■ QR funding (latest value)

3 Embracing sustainability in all our activities by reducing the environmental impact of the university's operations and activities		
■ Reducing the environmental impact of the university, including the impact of the services and products we provide ■ Reducing the university's contribution to climate change by reducing our greenhouse gas emissions ■ Reducing the impact of business operations by moving towards a paperless environment for processes	■ Producing an environmental strategy with exacting targets for waste, energy use, sustainable procurement, transport, carbon emissions, water use, biodiversity, sustainable food, construction and refurbishment and community involvement ■ Implementing an environmental management system for the whole university and gaining external accreditation ■ Implementing our Carbon Management Plan and reducing Scope 1, 2 and 3 emissions ■ Preparing for impacts of climate change ■ Conducting a feasibility study and implementing renewable energy technologies in the city campus	■ National energy emissions (kg CO_2) per student FTE ■ Water consumption per student FTE m^3

30
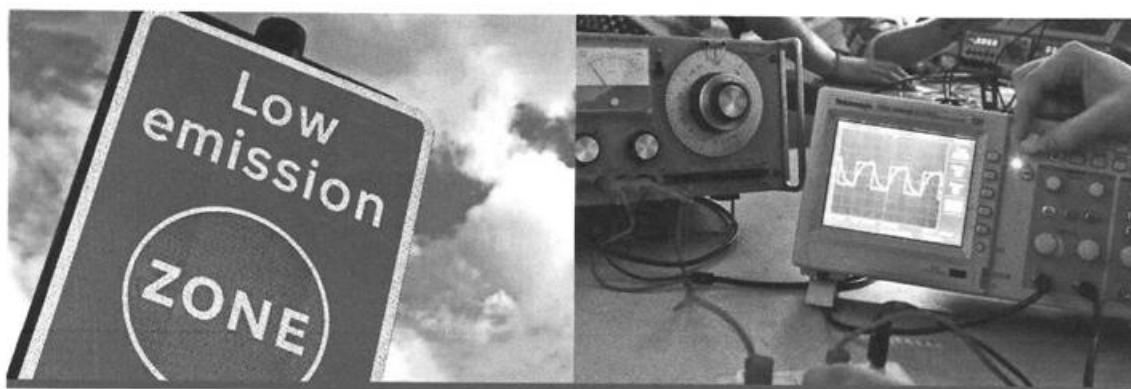
4	Demonstrating leadership in sustainability by communicating and promoting engagement with our sustainability message within the university, and locally, regionally, nationally and internationally
Our strategy will be...	**We will do this by...**
■ Leading sustainability and establishing ourselves as a beacon of best practice and innovation	■ Maximising the impact of our sector-leading technologies through changes to the way individuals and teams travel to and work at the university
■ Developing a communication plan to communicate our sustainability messages within the campus, the city and the community (locally, regionally and nationally), and engaging in sustainability activities	■ Working with the ▬▬▬ Partnership and other national and international partnerships
	■ Achieving national and international recognition for the university's sustainable development work
■ Reporting on our corporate social responsibility performance through external benchmarking programmes on sustainability	■ Participating in sustainability and corporate social responsibility performance benchmarking programmes for the higher education sector and business sectors and publicly reporting results
■ Building on our success in the 2011 Green League Table, and addressing areas for improvement (ethical investment, curricula, food, and energy)	■ Drawing on performance management for sustainability of faculties and professional service departments

5	Embedding responsibility for sustainability throughout our management and governance practices
■ Embedding sustainability responsibilities at senior management level and Board of Governors	■ Embedding sustainability within managers' portfolios and areas of responsibility for all senior managers
■ Embedding sustainability into the university's strategic documents such as risk management process and financial reports	■ Inducting governors and executive board members on sustainability and their role/responsibilities
	■ Integrating carbon budgeting into the university's operating procedures
■ Benchmarking faculties and departments on their carbon emissions	

6	Ensuring the university is a healthy, creative and inspiring 'space' to study and work
■ Adopting an integrated approach to health and wellbeing promotions to staff	■ Promoting healthy lifestyle choices to staff and students such as walking, cycling and healthy eating through promotional campaigns
■ Developing an integrated approach with ▬▬▬ Students' Union to ensure the health and wellbeing of students	■ Identifying funding, training opportunities for the Mile^2 project and providing training for staff and students
■ Working with staff, students and the Mile^2 project to address wellbeing	■ Engaging with local and national partners to develop new approaches in enhancing health and wellbeing

31

Appendix 6

Introduction

▬▬▬▬▬▬▬▬ Environmental Policy was revised and adopted by the Executive Board in January 2012.

The policy sets out the university's overarching commitments to environmental management and the steps it will take to reduce its environmental impact and improve its environmental performance. This commitment was further strengthened through the inclusion of sustainability as one of the university's six key themes.

The policy includes commitments across a range of environmental issues including education for sustainable development, climate change and engaging with staff and students on environmental issues.

The policy provides the structure within which targets and actions plans can be developed and implemented to meet the commitments of the policy and thereby improve environmental performance.

The aim of this report is to provide information on the progress against these overarching commitments for the period of 2012/13.

The report covers environmental policy and performance for the academic year 2012/13. This report is part of the annual reporting framework around environmental and sustainability issues at ▬▬ and covers many of the sustainability related aims within the university's Strategic Plan.

The report covers performance at ▬▬ in the following areas:-

- Energy and water
- Waste and recycling
- Staff and student travel
- Business travel
- Carbon emissions
- Sustainable procurement
- Staff and student engagement
- Biodiversity
- Sustainable construction
- Education for sustainable development

Each section contains relevant data on environmental performance for 2012/13 with a compendium of data in the final section of the report.

Comments and feedback on this report can be sent to the report's lead author ▬▬▬, Environmental & Sustainability Officer at ▬▬ (▬▬@▬▬uk).

Sustainable Development Task Force

The Sustainable Development Task Force comprises faculty and departmental heads, Estates personnel, researchers and representatives from the student union ▭ and was created in October 2007.

The aim of the Sustainable Development Task Force is to oversee the implementation of the university's Sustainability Strategy. This strategy covers five keys areas of:-

- Teaching

- Research

- Built environment

- Health and well-being and

- Community engagement

Information about the university's Sustainability Strategy can be found on its website http://www▭ac.uk/about▭sustainability/sustainability-strategy.aspx

The Sustainable Development Task Force members are:-

Pro▭ ▭opment
▭ ▭rganisational Development

▭mercial Services
▭ustainable Development
▭ Sciences
▭ Law
▭dia Services

▭le Development
▭ Directorate
▭h

T▭ ▭w

Energy

Energy use across the campus increased in 2012/13 for the first time in three years. The downward trend in energy consumption was interrupted by an extremely cold winter which saw greater demand for heating in buildings. This has resulted in increases in gas and electricity use for 2012/13, a situation that has been experienced across the HE sector.

Gas consumption increased by 23% and electricity use increased by 10% compared to the previous year of 2011/12. This is also the first reporting year when the new Queen Elizabeth II Diamond Jubilee Leisure Centre has been fully open. The new building provides an exciting new facility for staff, students and the local community but has increased gas consumption across the campus by approximately 10%. Leisure centres with swimming pools are traditionally large users of energy which is required to heat the pool and large users of water.

Recent energy related projects have included the installation of photovoltaic panels (PV) to generate electricity which were installed at the end of 2012/13. The total installation will provide the university with over 90,000 kWh of electricity each year, enough for 27 homes, and save thousands of pounds in energy costs. The installations will also reduce the university's carbon footprint by around 50 tonnes per year. The panels have been installed on Hugh Aston, Gateway House and Edith Murphy buildings. As part of the installation a display board has been placed in each reception area which shows how much electricity is currently being generated and how much has been generated since the panels were installed.

The photovoltaics join a suite of other renewable energy technologies, which include biomass heating, solar thermal water heating and ground and air source heat pumps that contribute to the university's energy needs. The renewable energy technologies are also used as a learning resource to demonstrate to students the different technologies that exist.

The amount of energy generated from renewable sources on campus is 211 megawatt hours (MWh) for 2012/13. The recent installation of the PV panels at the end of 2012/13 will help to increase energy generation from renewables in the next few years. For example PV panels in Hugh Aston will generate approximately 3% of the buildings electricity use.

Future plans and projects for reducing energy use are detailed within the university's Carbon Management Plan and include the installation of PC switch off software and investigating the installation of further renewable energy technologies.
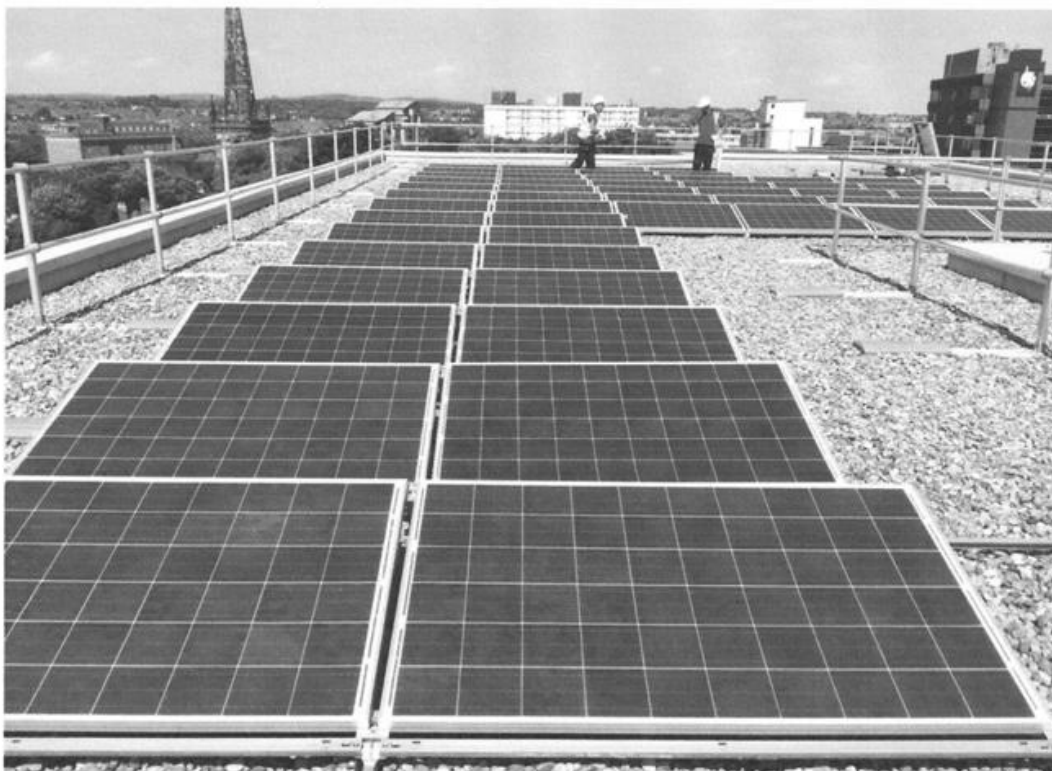
Water Use

Water use on campus has risen in 2012/13 when compared to 2011/12.

The increase in water consumption is due to changes to ▢ buildings including the introduction of the new Queen Elizabeth II Diamond Jubilee ▢ Centre which provides an exciting new facility to staff, students and the local community. The facility includes a gym, sports hall and a 25 metre swimming pool.

Consumption of water for 2012/13 is comparable with 2011/12 when figures for the leisure centre are removed. This suggests that water consumption has remained relatively constant from 2011/12 to 2012/13 apart from the introduction of new buildings.

Communicating Energy and Water Consumption at ▢ with Smartspaces

During 2012/13 ▢ was also part of the smartspaces project which has the potential to save up to 10% of energy use in 25 public buildings across the city of Leicester – including local schools and leisure centres.

Electricity, gas and water consumption will be electronically monitored in 20 council buildings as well as five buildings on the ▢ campus. This information will then be illustrated via easy -to-understand illustrations on a new website www.smartspaces ▢ u.ac.uk

Good performance is reflected as a happy, green face. Poor performance is reflected as a sad, red face. Yellow faces represent neutral performance.

Energy use less than expected | Energy use in line with expected | Energy use higher than expected
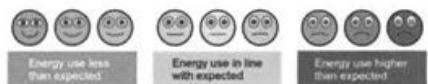
Building users will then be encouraged to find ways to reduce their energy wastage and get their usage back in the green. ▢ r is one of 11 pilot sites across 8 European countries aiming to save energy through visualising and communicating energy use.

The system has been developed in consultation with staff and students at ▢ and staff at ▢ City Council. The pilot phase of the project will run until November 2014.
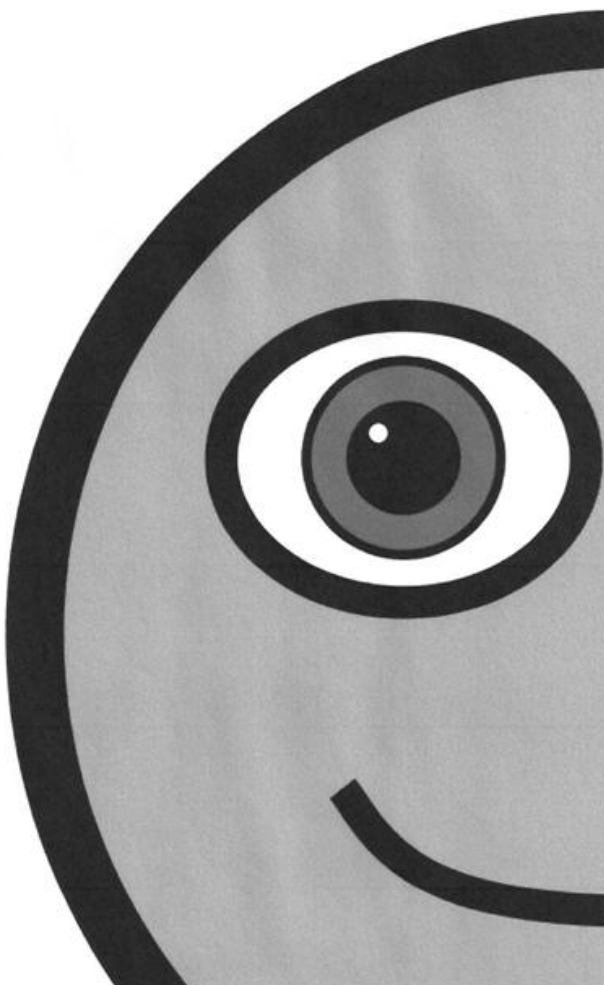
Waste and Recycling

Our performance in relation to waste and recycling shows positive results with a continual drop in the amount of waste sent to landfill.

The amount of waste that is recycled is still high and has been increasing for the past three years. The range of materials that can be recycled at ▇ continues to expand. This has recently been expanded to include spectacles following a suggestion from a member of staff and there are now facilities to recycle textiles on the campus. The recycling facilities have also been extended to include the food court area of the campus centre although this is experiencing some problems with contamination. The figures provided at the back of this report for non residential estate are calculated from figures and reports from our waste and recycling contractors.

The university continues to make good use of the Estates and Commercial Services furniture store whereby unwanted furniture is reused and re-homed to extend its useful life. The furniture store has re-used over 10 tonnes of furniture that would otherwise be disposed of. This reduces waste but also reduces costs.

The waste that is generated and collected from the ▇ owned halls of residence is collected by ▇ City Council and their waste contractor team. Unfortunately as a result we are unable to obtain figures from the city council in relation to the amount of waste that is generated or the amount of waste that is recycled.

As a result of the lack of accurate data for the halls of residence figures in relation to residential properties are based on estimates using national datasets. The national datasets are produced by the Department for Environment, Food and Rural Affairs (Defra) and show the average amount of waste per person and the amount of waste recycled per person for England. This calculation methodology is in line with the recent guidance from the Higher Education Funding Council for England (HEFCE) on measuring carbon emissions from waste for residential properties.

Staff & Student Travel

Progress continues to be made in encouraging staff and students to adopt more environmentally friendly forms of commuting to ▬. The headline target of maintaining single occupancy commuting car journeys amongst staff below 45% was not met but the figure for 2012/13 is symptomatic of the fluctuations within the annual survey results. The survey figures suggest that single occupancy car use for students is at 10% which is the lowest level since records began.

Data in relation to commuting patterns is collected through the annual travel survey which provides a snapshot of commuting behaviours amongst both staff and students at ▬. The results of the 2013 survey show increases amongst those staff who walk/run to work. The results for cyclists is slightly lower than last year but are still way above the national average figure of 3% for cyclists.

Staff and student are encouraged to use public transport through the negotiation of discounts with local and national operators and through the work of SmartGo ▬ which has representatives from the two universities, High Cross and other large employers in the city.

Staff and students are encouraged to use walking and cycling through the use of promotional items such as high visibility clothing, secure cycle parking, cycle lock loans, puncture repairs kits and the provision of changing and shower facilities across the campus.

The implementation of future initiatives and measures to reduce single occupancy car journeys is dictated by the University's Travel Plan which is reviewed on an annual basis and implemented by the Travel Plan Group which is chaired by the Transport Co-ordinator.

Business Travel

The figures for business travel which are shown towards the end of this report have been calculated using the procurement spend value in each of the categories listed below.

The figures reported as tonnes of greenhouse gas emissions (tCO_2e) show that emissions from national rail travel have stayed relatively constant over the three year reporting period while international rail travel has increased.

The area of the largest increase in emissions is from air travel which has continued to increase over the past three years. This increase is in both short haul and long haul travel.

This is no doubt a reflection on the university's increased global reach and the focus on recruiting more international students as set out in the university's International Strategy which seeks to double the number of international (non EU) students between 2010 and 2014. While this increase is dramatic the contribution of air travel to the university total carbon footprint is small at approximately 10%.

Fuel used in ▢ owned vehicles has increased very slightly in 2012/13 compared to the previous year.

This is expected to reduce following the acquisition of an electric vehicle by Estates & Commercial Services. The introduction of this vehicle has been so successful that a second electric vehicle has been procured.

Carbon emissions

▭ has taken a comprehensive approach to measuring and reporting its carbon (greenhouse gas) emissions as set out in its Carbon Management Plan. The plan sets a carbon reduction target of 43% by 2020 based on 2005 levels for emissions from energy use and ▭ owned vehicles (known as scope 1 & 2 sources). This equates to a reduction of emissions to 7,511 tonnes CO_2 by 2020.

The university has also agreed interim reduction targets for 2012/13 and 2017/18. The carbon emissions for 2012/13 were below the first interim reduction target for 2012.
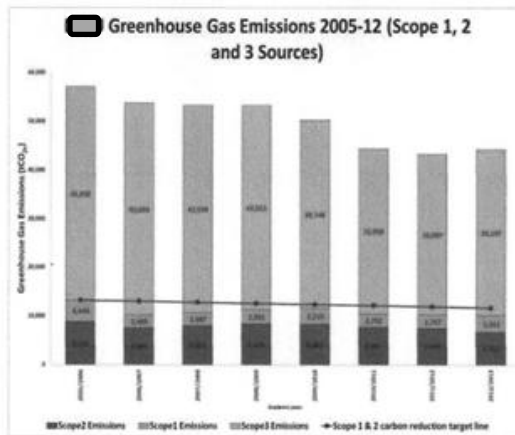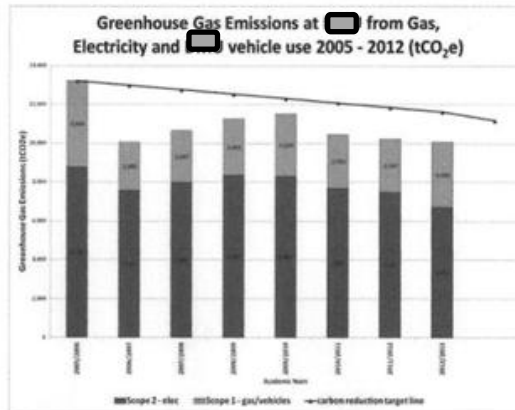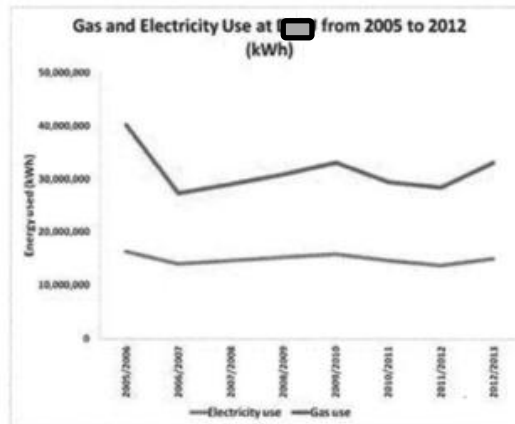
The university also measures and reports emissions from water use, waste production, international and UK based student travel, staff and student commuting, business travel and emissions from procurement activities. These emission sources are collectively known as scope 3 sources and represent approximately 75% of the university total carbon footprint.

As previously stated in this report energy use had been reducing in previous years but has increased in 2012/13 due in part to the extremely cold winter. This increase in energy consumption as a result of the cold weather is not reflected in the carbon emissions for 2012/13. These emissions are slightly lower than 2011/12.

This decrease is due to a decrease in the carbon intensity of electricity supplied through the national grid. Grid electricity comes from a number of different energy sources such as gas, oil, coal and renewables. The different mix of fuels contributes to the carbon intensity of the electricity supplied.

Overall the university's total carbon emissions have increased in 2012/13 with increases in emissions from scope 1 & 2 sources (primarily energy use) and emissions from scope 3 sources. Within those scope 3 sources emissions have risen slightly from business travel and from procurement. The procurement related emissions are as a result of increased expenditure on information and communications technologies which has resulted in increased emissions from this procurement related area.

Future developments in this area include the development and agreement of scope 3 reduction targets for the institutions. Work is currently taking place to establish some emission scenarios for the different scope 3 sources to ensure that carbon reduction targets take into account potential forthcoming changes in emissions.

Gas and Electricity Use at ▭ from 2005 to 2012 (kWh)

Greenhouse Gas Emissions at ▭ from Gas, Electricity and ▭ vehicle use 2005 - 2012 (tCO₂e)

▭ Greenhouse Gas Emissions 2005-12 (Scope 1, 2 and 3 Sources)

Sustainable Procurement

Sustainable procurement has been included in the major contracts and agreements that the university makes. Through mechanisms such as Pre Qualification Questionnaire (PQQ) and contract specification stipulations have been made to ensure that contractors working on behalf of the university have high environmental credentials and that they use products and services which have a lower impact upon the environment where possible.

The university has a sustainable procurement policy which sets out what it aims to achieve through activities including contracts specifications and through working with suppliers.

The university is a Fairtrade University which is a standard awarded by the Fairtrade Foundation where universities can demonstrate that certain criteria have been met. These criteria include selling Fairtrade products through its outlets and providing fairtrade products for its management meetings. The university works closely with its catering contractor, ▇▇▇▇▇, to promote Fairtrade and Fairtrade products including ensuring that all tea and coffee provided by Chartwells for catered meetings and events is Fairtrade by default.

Sustainable procurement is also evident in the provision of food at ▇▇. The university's catering contractor ▇▇▇▇, has been proactive in the area of sustainable food procurement. The organisation uses Fairtrade tea and coffee in its catering provision as standard, ensures its fish is from sustainable sources, procures free range fresh eggs, purchases 'Red Tractor' meat from UK farms and uses seasonal vegetables in its menus. This work is supported by the university's Sustainable Food Policy.

Sustainable procurement is an essential part of the university's work on sustainable construction. The sourcing of products is a key element of the Building Research Establishment Environmental Assessment Method (BREEAM) process which assesses buildings on their environmental and ecological credentials. The university aims for the Excellence standard in its buildings where possible.

Where possible the university ensures that its contractors source products which have been produced in a sustainable way and have a low environmental impact and the university encourages its suppliers to adopt sustainable practices such as environmental management systems.
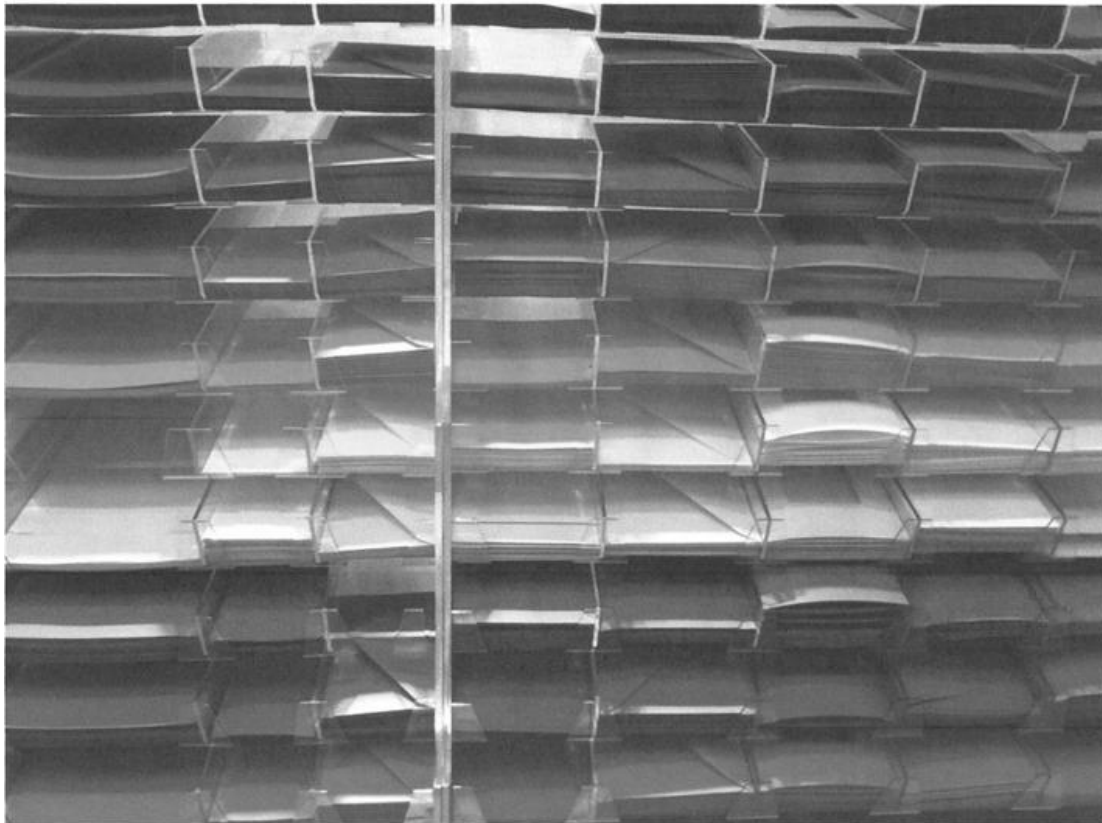
Staff and Student engagement

Staff and student engagement is an important issue in relation to environmental issues. Without this important element the work that has been undertaken to provide the structure for positive environmental behaviours to take place i.e. providing a recycling scheme, these actions may not take place.

▭ runs two staff and student environmental engagement projects in the shape of Green Impact (GI) and Student Switch Off (SSO) for staff and students respectively. Both projects are supported nationally by the NUS but delivered within ▭ by the Estates and Commercial Services Directorate.

GI is a scheme to encourage greener habits in the workplace by providing a competitive element to environmental issues. Teams across ▭ are encouraged to complete a series of simple environmental activities which are individually scored.

Depending on the number of activities completed and points scored teams are awarded Bronze, Bronze +, Silver or Gold awards. The teams are then awarded their prizes at a special awards ceremony.

Students at ▭ are trained as either Green Impact Project Assistants (GIPAs) to assist the staff teams in implementing their environmental activities or as environmental auditors who audit each GI team to check that the environmental activities have been completed to the required standard.

In 2012/13 there were 12 Green Impact teams taking part in the project with 2 GIPAs supporting two of those teams. The provision of GIPAs for Green Impact will be increased for 2013/14.

Green Impact is also being implemented at the ▭ charity ▭ by students from the Faculty of Business & Law BusinessWorks programme.

This is the first year that BusinessWorks students have worked with ▭ on the programme and it is anticipated that this will continue to 2013/14.

The ▭ have also taken part in Green Impact Students Union and have successfully achieved the Silver standard.

SSO encourages students to save energy in halls through the use of incentives and social media. Students in ▭ halls are encouraged to save energy through simple energy saving tips sent via email. Students who then post pictures of themselves doing these energy saving tips on a specially created Facebook page can win prizes.

The SSO project currently runs in Bede and New Wharf halls. The Estates and Commercially Services Directorate are currently in contact with private hall providers to encourage them to take part in 2013/14.

Biodiversity

The university recently adopted a Biodiversity Policy which seeks to improve existing wildlife habitats and create new habitats where possible. The Estates and Commercial Services Directorate manage the existing green space across the campus and seek to apply sustainability principles where possible.

Currently green waste is composted or chipped and re-used on site as a mulch to suppress weeds.

A phase 2 habitat survey has been completed to highlight any areas of the campus that need managing to enhance biodiversity and nesting boxes have been erected on a number of buildings to encourage Peregrine Falcons to nest.

Biodiversity is addressed for new developments through the adoption of the Building Research Establishment Environmental Assessment Method (BREEAM) rating for buildings.

Part of the BREEAM assessment includes ecology and looks to ensure that this is included as part of new developments. The new Fletcher development aims to achieve BREEAM Excellent.
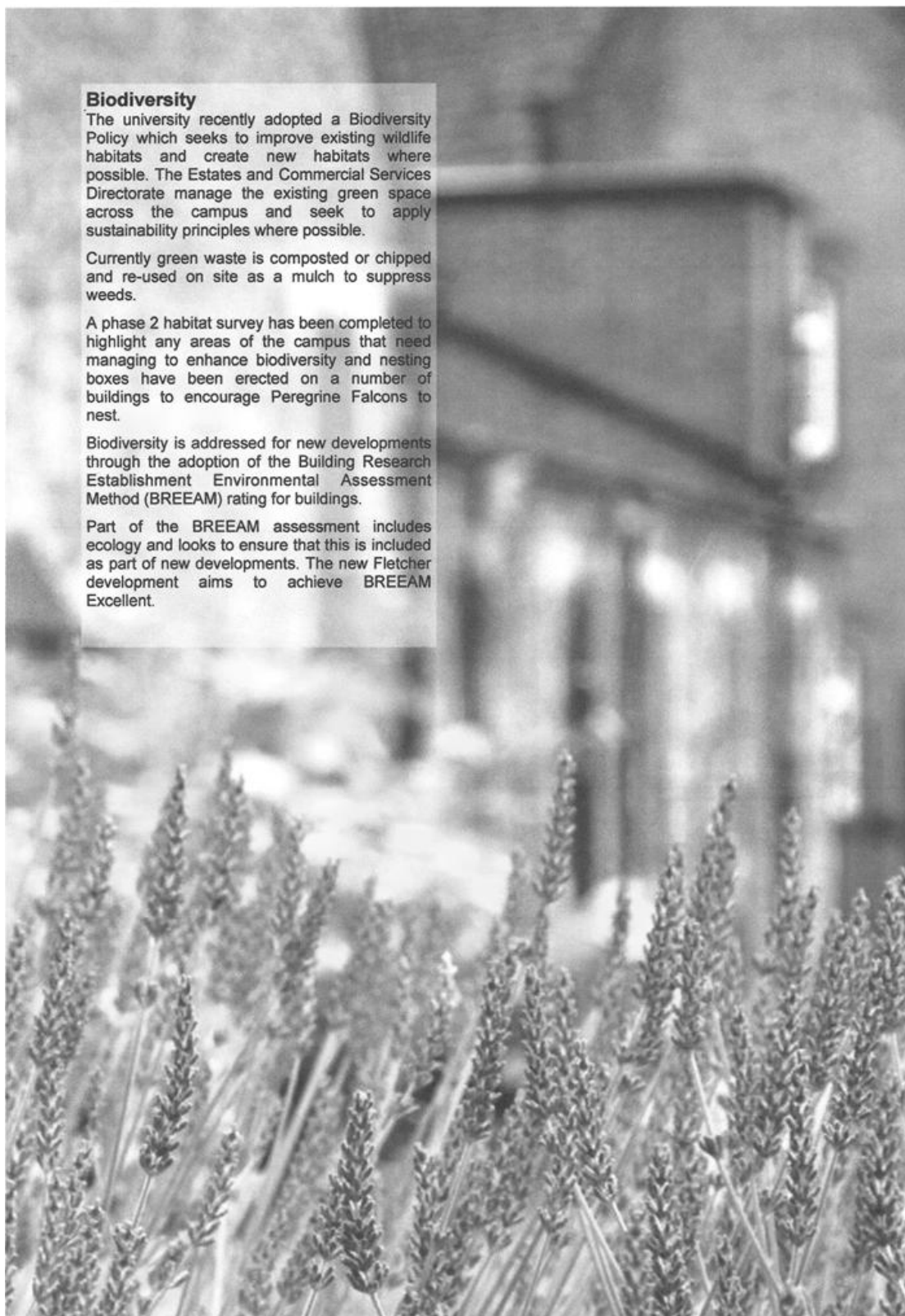
Sustainable Construction

Sustainable construction at ▭ is mainly guided by the university's energy policy which states that in new build and refurbishment projects, the Estates Department will implement the design that provides the most beneficial life cycle costs and which aspire to obtaining an outstanding standard in the BREEAM (Building Research Establishment Environmental Assessment Method) rating system taking all material factors and constraints into account. Recent new building projects such as Hugh Aston have achieved the highest BREEAM rating available at the time of construction.

BREEAM sets the standard for best practice in sustainable building design, construction and operation. The BREEAM has become one of the most comprehensive and widely recognised measures of a building's environmental performance. It encourages designers, clients and others to think about low carbon and low impact design, minimising the energy demands created by a building before considering energy efficiency and low carbon technologies.

A BREEAM assessment uses recognised measures of performance, which are set against established benchmarks. These measures of performance are used to evaluate a building's specification, design, construction and use. The assessment criteria range from energy to ecology. They include aspects related to energy and water use, the internal environment of the building (health and well-being), pollution, transport, materials, waste, ecology and the management processes of erecting and managing the building.

Refurbishment projects also include environmental and sustainability measures. The recent refurbishment of Edith Murphy included improved insulation, new glazed windows and the installation of air source heat pumps. This has reduced energy use within the building by over 25%.

The new Queen Elizabeth II ▭ Centre also contains a series of environmental measures including natural ventilation, high levels of insulation and the provision of air source heat pumps.

Education for Sustainable Development

'Education for Sustainable Development means including key sustainable development issues into teaching and learning; for example, climate change, disaster risk reduction, biodiversity, poverty reduction, and sustainable consumption. It also requires participatory teaching and learning methods that motivate and empower learners to change their behaviour and take action for sustainable development' – UNESCO

▭ has already made a series of commitments in relation to Education for Sustainable Development through its Strategic Plan, its Environmental Policy and in its University Teaching, Learning Assessment Strategy (ULTAS).

To further strengthen this commitment the university joined the Green Academy programme run by the Higher Education Academy (HEA) in February 2013. The Green Academy programme supports institutions that wish to enhance education for sustainable development within their organisations.

▭ was one of only 10 higher education institutions (HEIs) to take part in the second Green Academy programme. The Green Academy team at ▭ consisted of representatives from Faculty of Technology, Academic Quality, ▅▅▅▅▅▅ Union and Estates & Commercial Services.

The Green Academy team at ▭ developed an implementation plan which was structured around five work packages, to be delivered within the current ULTAS timeframe (2012-2015) and comprised of the following aims:

- An on-line module on 'leadership for a global environment' that all students can study utilising MOOC (massive on-line open source course) principles.
- An increase in formal curriculum around sustainable development
- A University-wide certificate for students around 'leadership for a global environment' that will recognize the completion of the on-line module PLUS practical activities, for example, volunteering, being an environmental champion and working with international students.

The DMU Green Academy team will continue to implement the three year plan and will provide updates on progress through the Sustainable Development Task Force on a regular basis.

The aim of the Green Academy programme is to build upon the areas of good practice at ▭ on education for sustainable development. Sustainability already features in architectural design, engineering and within fashion and textiles. There is also a very strong post graduate study into sustainable development through Masters degrees including Climate Change and Sustainable Development; Energy and Sustainable Building Design; Environmental Quality Management and Architecture and Sustainability.

Monitoring of the extent to which Education for Sustainable Development is currently being implemented across ▭ is achieved through a search of course and modules descriptions which is completed by colleagues in Academic Quality. The search using a list of key environmental and sustainability words to highlight where sustainability and environmental issues are being covered in the syllabus.

The search criteria used the key words of 'environmental', 'corporate social responsibility', 'globalisation', 'ethical', 'fair trade', 'climate change', 'carbon', 'social', 'exclusion', 'equality' or 'diversity' in the learning outcomes. For the most recent year of 2012/13 a more comprehensive search took place. A total of 146 programmes (out of 642 – so 22%) were found to contain one of more of the key words (with 8222 students enrolled on these programmes). The search also highlighted 86 specific modules (out of 4906) that contained one or more of these keywords in their learning outcomes (with 2076 students enrolled on these modules).

Environmental Performance 2012/2013

The following are a series of environmental performance indicators for 2012/13. The data is the majority of cases is shown for 2012/13 and the proceeding three years. Where graphs have been used to represent the data the time period covers eight years.

The first data table provides some general information about ▭ to offer some context for the environmental performance figures. For example if the gross internal area of the university were to increase or decrease dramatically from one year to the next this may have an effect upon energy use and carbon emissions. In a similar way an increase in students may have an effect on waste production and recycling rates.

General

Indicators/Metrics	2009/10	2010/11	2011/12	2012/13
Income/Turnover	£149.88M	£149.43M	£146.99M	£152.66M
Student numbers	22,457	22,411	22,192	20,473
Staff numbers	3,350	3,083	2,950	2,871
Gross Internal Area (GIA) (m²)	167,583	157,713	151,669	163,224

Energy

Indicators/Metrics	2009/10	2010/11	2011/12	2012/13
Energy use (MWh)	33,135	29,452	28,489	33,209
Electricity use (MWh)	15,820	14,652	13,713	15,064
Gas use (MWh)	17,315	14,800	14,776	18,145
Water use (m³)	58,977	60,565	71,131	77,256
Energy generated from renewables - heat only (MWh)	149	379	223	211
Fuel used in DMU vehicles (litres)	4,772	4,399	4,408	5025
Residential & non residential GIA with Display Energy Certificate rating A - C	44,339	68,566	79,220	86,695
% residential & non residential GIA with Display Energy Certificate rating A - C	26%	43%	52%	57%

Water consumption at ▭ 2005 - 2012 (m3)

Gas and Electricity Use at ▭ from 2005 to 2012 (MWh)
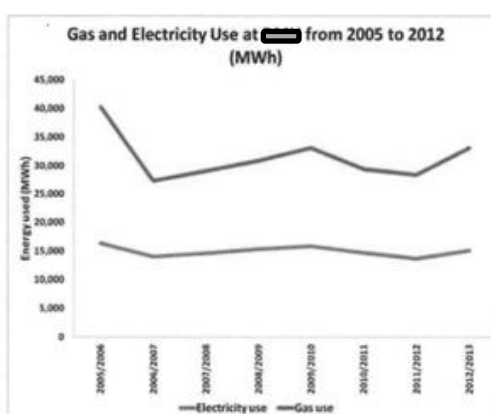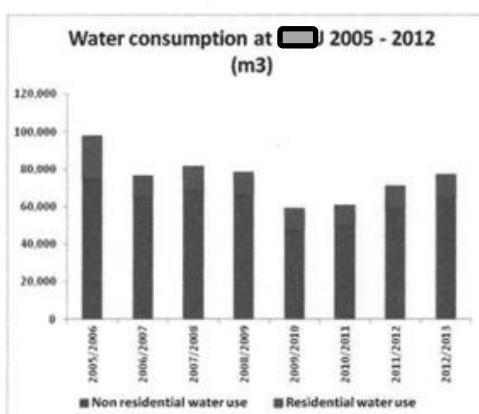
Environmental Performance 2012/2013

Transport

Indicators/Metrics	2009/10	2010/11	2011/12	2012/13
% Single occupancy car use (staff)	47%	45%	42%	47%
% Single occupancy car use (students)	13%	13%	15%	10%
% Staff travel by public transport	21%	20%	20%	19%
% Staff travel by cycling	9%	9%	11%	9%
% Staff travel by walking/running	13%	13%	14%	15%

Staff modal travel choices at ▭ 2013, by %

Student modal travel choices at ▭ 2013, by %
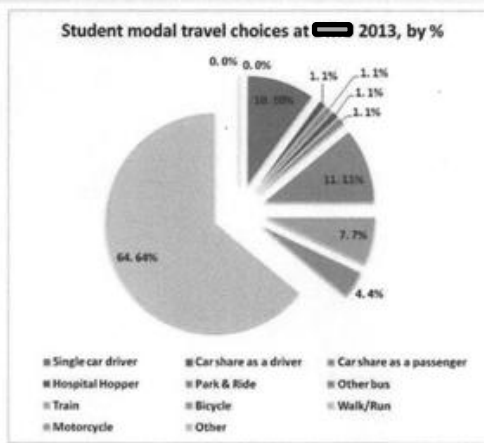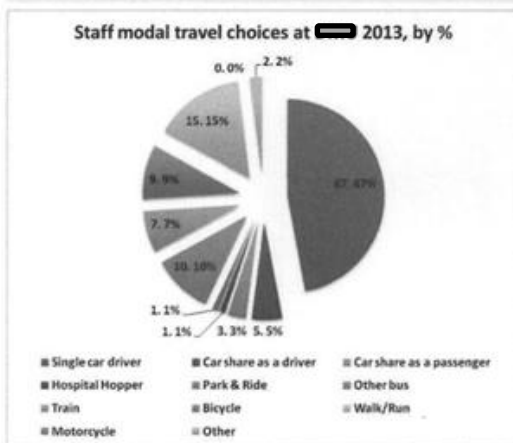
Waste and Recycling

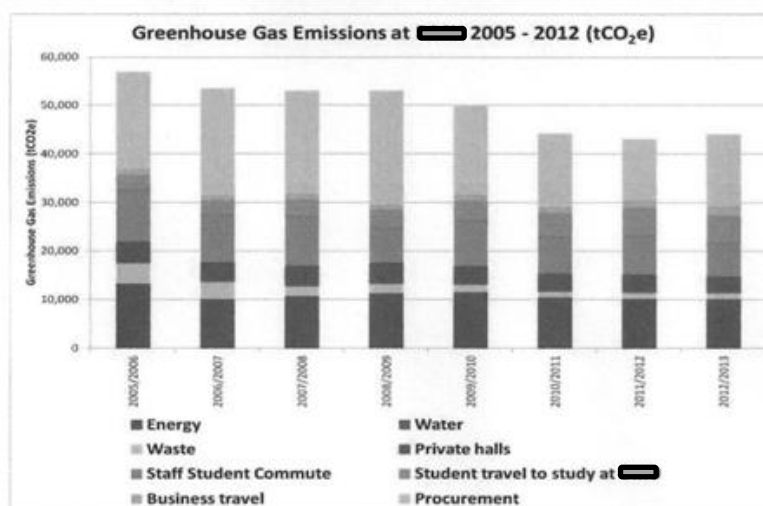| Indicators/Metrics	2009/10	2010/11	2011/12	2012/13
Total Waste produced - non residential (tonnes)	809	634	663	612
Waste recycled - non residential (tonnes)	363	257	326	366
Waste to landfill - non residential (tonnes)	447	378	337	246
Total Waste produced - residential (tonnes)	234	234	234	234
Waste recycled - residential (tonnes)	56	56	56	56
Waste to landfill -residential (tonnes)	177	177	177	177

Waste recycled and waste to landfill at ▭ from 2005 - 2012 (tonnes)
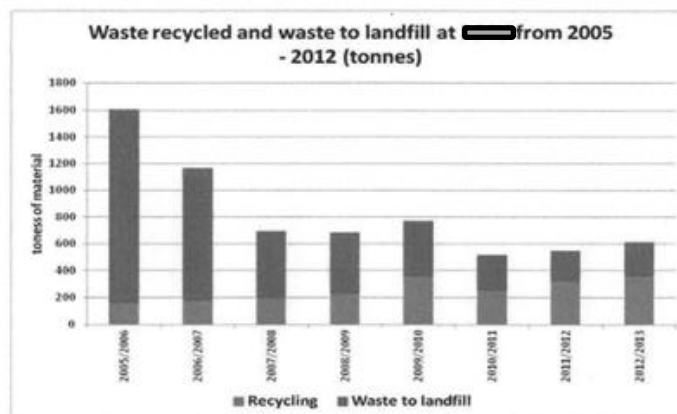
Environmental Performance 2012/2013

Greenhouse Gas Emissions

Indicators/Metrics	2009/10	2010/11	2011/12	2012/13
Emissions from energy & ▭ owned vehicles(scope 1 & 2) (tCO$_2$e)	11,519	10,439	10,224	10,064
Emissions from staff & student commute (scope 3) (tCO$_2$e)	9,412	7,556	8,120	6,919
Emissions business travel (scope 3) (tCO$_2$e)	1,088	1,250	1,620	1,935
Emissions from waste & water (scope 3) (tCO$_2$e)	1,523	1,186	1,174	1,222
Emissions from international & UK student travel (scope 3) (tCO$_2$e)	4,032	4,789	5,588	5,525
Emissions from procurement activities (tCO$_2$e)	18,596	15,180	12,662	14,981
Emissions from all scope 3 sources (tCO$_2$e)	38,609	33,807	33,065	34,197
Total Emissions - scope 1, 2 & 3 sources (tCO$_2$e)	50,128	44,246	43,289	44,261

Business Travel

Indicators/Metrics	2009/10	2010/11	2011/12	2012/13
Air travel (tCO$_2$e)	745	908	1,249	1.603
Rail travel (tCO$_2$e)	203	200	187	156
Maritime (tCO$_2$e)	0	0	0	0
Road travel (tCO$_2$e)	140	143	184	176

Education for Sustainable Development

Indicators/Metrics	2010/11	2011/12	2012/13
Number of modules with sustainability key words	99	105	86

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