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Perceptions and understanding of Education for Sustainable Development and Global Citizenship (ESDGC) by teachers and teacher trainees and the opportunities and challenges of integrating ESDGC into early childhood learning within the Foundation Phase

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Abstract

ESDGC is a statutory component of the Welsh primary school curriculum and is influenced by the ethos of Education for Sustainable Development (ESD) and international and national policy to create a more sustainable society. This research presents and extensive review of literature linked to Sustainable Development, ESD, ESDGC development in Wales and the relevance to young children.

The primary research presented involved conducting questionnaires and structured interviews with teachers, 3rd year teacher trainees and ESDGC experts from organisations with ESDGC expertise. There was also a snapshot made of resources for teachers on the websites of ESDGC linked organisations. The data collected was on the whole qualitative and was an exploratory interpretive study to understand how teacher and trainees interpreted ESDGC, how they included this in their teaching and learning and the benefits and challenges they associated with this agenda. Teachers and organisational experts also provided insights into the specific issues encountered when engaging young children and the Foundation Phase with ESDGC.

On the whole teacher and trainees were positive regarding ESDGC and several participants highlighted the holistic interconnected nature of the subject. However there was a tendency in some of the trainees' answers to highlight environmental management rather the social and economic aspects of ESDGC.

Key issues highlighted in the research were the teachers and trainees requirement for more resourcing and training within ESDGC. Concerns were also highlighted about having sufficient time to include ESDGC within the school curriculum and recognising where to include ESDGC issues. Some participants also were concerned that this area of work may be too complicated or sensitive for young children.

Experts questioned saw strong links between ESDGC and young children's learning, and some focused on the importance of outdoor learning which was also prominent in teachers' answers. Some experts highlighted the benefits of sharing good practice and being able to learn from early childhood teachers about delivering ESDGC with younger children

The research recommends that experts, trainees and teachers would benefit from opportunities to share their knowledge and understanding of ESDGC and early childhood pedagogy with a view to being mutually beneficial.

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Chapter 1 Introduction and Literature Review

1.1 Introduction

Increased media attention on environmental problems in the 1970s and 1980s alongside growing concerns about climate change served to heighten societies awareness and concern that humans were damaging natural resources which could ultimately damage society and the economic structures they were dependent on (Davis, 2010; Tinney, 2010). Global poverty and inequality between the developed and developing world also highlighted the injustice and lack of human rights faced by a significant proportion of the world's people, especially in relation to basic human needs for clean water, food and shelter (Tinney, 2010). It was within this context that Sustainable Development (SD) became the focus of global, national and local agendas from the 1970s onwards and was seen as means to alleviate the numerous environmental, economic and social problems facing society (Davis, 2010).

The SD agenda continues to be a significant influence across different sectors (UNICEF, 2013; Davis, 2010; Tinney, 2010). One important aspect of SD philosophy has been a recognition that education and children play a key part in changing people's behaviour in order to allow for a society and environment which is capable of sustaining life now and in the future. Education for Sustainable Development (ESD) is an internationally driven agenda to facilitate all members of society's engagement with SD and is based on a strong set of pedagogical and philosophical principles explored later in Chapter 1.

In Wales the Education for Sustainable Development and Global Citizenship (ESDGC) policy in Wales has been the Welsh response to the global agenda (Bennell, 2011; Bennell and Norcliffe, 2009; DELLS, 2006; DCELLS, 2008a) where it is compulsory for all maintained education settings to include ESDGC within their work with all age groups including young children. On an international level authors such as Elliott and Davis (2009) and Davis (2009), have however highlighted that ESD has been overlooked or ignored within early childhood despite both sharing similar principles and philosophies in terms of pedagogy, rights and values (Hagglund and Pramling-Samuelsson, 2009; Davis et al, 2009). Davis (1998:143 in Appendix A, Page 1) highlights 'a few big questions about the future' and makes a strong case that SD is a crucial issue for young children and the future health and well-being of wider society.

In Wales the current ESDGC curriculum was introduced in 2006 (DELLS, 2006) and the Foundation Phase Framework was rolled out for all school children between 3.5 and 7 years in 2008 (DCELLS, 2008c) and thus it is timely to consider whether ESDGC is being integrated effectively into early years education in Welsh schools. This research thesis will therefore present the findings of an exploratory study investigating how teachers and teacher trainees in the South West Wales region interpret and view ESDGC. Current teachers' views on engaging ESDGC within the Foundation Phase will be evaluated, as well as the views of representatives from ESDGC linked organisations delivering ESDGC with young children. The web material and resources available for teachers to support ESDGC with young children of Foundation Phase age will also be evaluated. The research adopts an interpretive approach involving questionnaires, structured interviews and web analysis and these methods as well as the research approach are outlined in depth in Chapter 2.

The research aims are:-

1. Exploration and evaluation of ESD research literature in order to better understand its philosophies and principles and to highlight the links and relevance to early childhood learning internationally and in Wales.
2. Current teachers in South West Wales' interpretation, understanding and experiences of ESDGC with particular reference to working with young children within the Foundation Phase.
3. Primary Teacher Trainees interpretation and understanding of the concept of ESDGC and their experience of this agenda during their training.
4. Exploration of the views and work undertaken by personnel working for organisations that support the delivery of the ESDGC curriculum and evaluating their interpretation of this agenda and its importance and relevance to young children.
5. Identifying and evaluating of web material documentation and resources provided by organisations that could support the delivery of ESDGC with young children.

The remainder of Chapter 1 will present a literature review which will fulfil the criteria in research aim 1 (above). Chapter 2 presents the methodology and ethical framework used to complete aims 2-5 (above). Chapter 3 presents the results and discussion generated from the qualitative and quantitative data collected and Chapter 4 highlights the key conclusions and recommendations of the research undertaken.

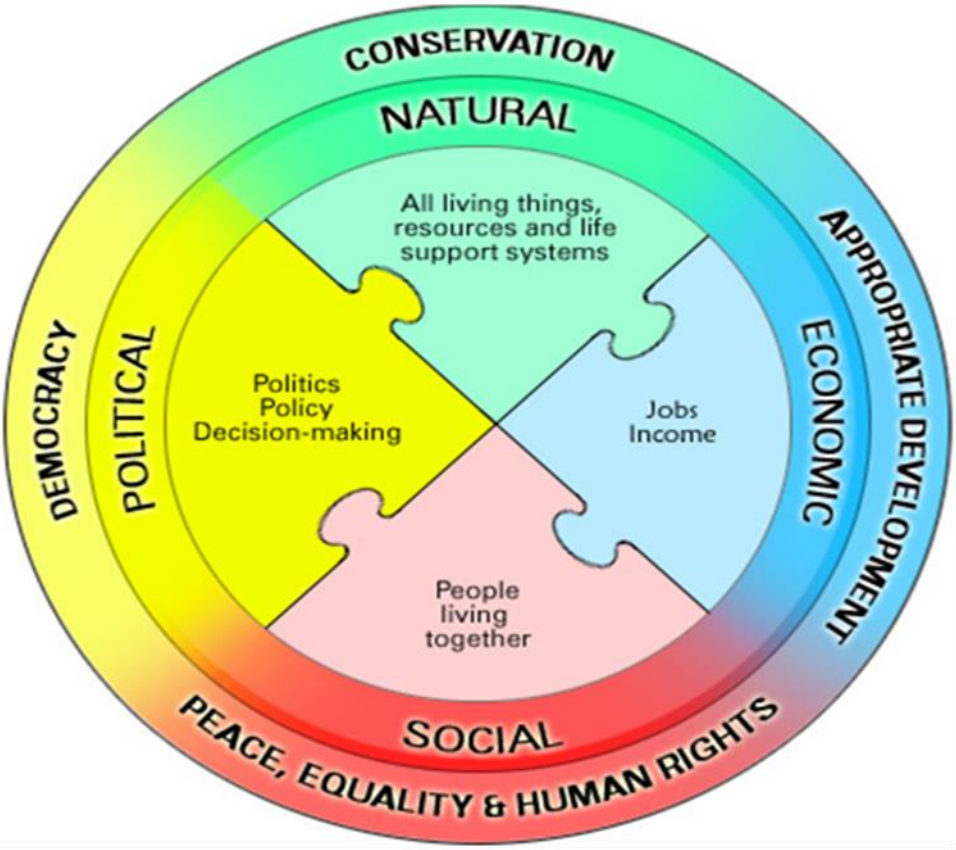
1.2 Literature Review

1.2.2 Context of SD

One of the common definitions of SD is 'development which meets the needs of the present without compromising the ability of future generations to meet their own needs' (WCED, 1987: 5).

This definition was published in the United Nations *Our Common Future* report (WCED, 1987) which recognised the need for all nations of the world to think beyond their own needs and plan to use resources sustainably. It also highlighted that the problems facing human beings were interconnected and often human driven. To solve such problems active participation by all levels of society would be required and SD would be achieved by recognising that environmental, social and economic development were not isolated but needed to be considered as the key pillars of sustainability (UNICEF, 2013; UNESCO, 2010) (see Diagram 1).

Diagram 1 highlighting the interconnected nature of SD
Diagram taken from UNESCO, 2010



SD is therefore a global agenda (UNEP, 1972) and is influenced by both non-government and government concerns for the wellbeing of the Earth's human and non-human inhabitants now and into the future, while still providing for social and economic development (UNCED, 1992). Detailed discussion of the historic development of SD is beyond the brief of this thesis; however Appendix B highlights some of SD agenda's key milestones.

In 1992 the United Nations Conference on Environment and Development (UNCED, 1992) created Agenda 21 to support SD's delivery. Agenda 21 was a global agenda which recognised that all nations, whether poor or rich, needed to work together to solve the problems facing the Earth and its inhabitants. More importantly Agenda 21 recognised that

local action was required as a starting off point to change growing inequality and environmental problems globally. It provided strategies to ensure SD and indicated that all sectors of society (including children) would need to be engaged in this agenda.

Despite Agenda 21 promoting the development of SD strategies internationally (including the UK who were the first to ratify their *Sustainable Development: The UK Strategy* (HMSO, 1994)) concerns remain that the problems facing the Earth have not been tackled effectively. The Johannesburg World Summit on SD (WSSD, 2002) highlighted that 10 years on from publishing Agenda 21 global inequality and poverty were increasing, and environmental issues such as climate change would have a proportionally bigger impact in developing than developed countries, critics suggesting that the environmental focus of SD had led to humanitarian issues such as poverty being ignored. 20 years on from the publication of Agenda 21 the United Nations Summit on SD (UNCSD, 2012) also restated that 'Eradicating poverty is the greatest global challenge facing the world today and an indispensable requirement for sustainable development' (UNCED, 2012:2-3).

From a theoretical perspective several authors have also questioned the usefulness of a concept such as SD which can mean 'all things to all people' depending on their own views of the world (Whitehead, 2007; Nicol, 2003; Huckle and Sterling, 1996; Adams, 1995; O'Riordan, 1981). SD can be viewed as an anthropocentric concept where human wellbeing is considered more important than the natural environment's wellbeing (Whitehead, 2007; Pepper, 1996; Adams, 1995; O'Riordan, 1981). Human society, is not interested in 'Saving the Planet' but concerned with saving itself, and the practical implementation of SD is often a token measure (Tinney, 2010), only capable of benefiting human society in the short term. Technocentricism suggests that the Earth's problems can be solved by scientific and technological advancement rather than reducing economic development where Western society remains overwhelmingly 'technocentric accommodationist' with people willing to make small changes to their behaviour and lifestyle and use technology in order to sustain the earth, but fall short of any revolutionary changes to capitalist systems (O'Riordan, 1981).

In contrast authors such as Nicol (2003) O'Riordan (1989) and Naess (1988) discuss ecocentric / deep ecology viewpoints where non-human nature is valued intrinsically and beyond its instrumental value to human beings and where society would use suitable

technology, reject consumerism and live in harmony with their ecosystem. These viewpoints are often linked to strong sustainability which would require radical and revolutionary changes to mainstream western society (Whitehead, 2007; Nicol, 2003; Pepper, 1996; Adams, 1995; Orr, 1992; O'Riordan, 1981). However authors such as Pepper (1994) note that such ecocentric viewpoints can ignore inequality issues such as poverty and that not all human beings have the same impact on their environment (Martínez-Alier, 2002) where environmental injustice means the poorest people bear the brunt of environmental problems (Adger et al., 2006).

1.2.3 ESD

Despite concern regarding the meaning and progress of SD noted in section 1.2, education has been considered as key to achieving SD (UNICEF, 2013; Sterling, 2001; Huckle and Sterling, 1996). As stated in Agenda 21 (UNCED, 1992 cited in Fien and Tilbury, 1998)

> Education is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues…. It is critical for achieving environmental and ethical awareness, values and attitudes, skills and behaviour consistent with sustainable development and for effective public participation in decision making.
>
> (UNCED, 1992 cited in Fien and Tilbury, 1998: (web based article no page)

This commitment to education has been reaffirmed by UNCSD (2012: 44) and 2005-2014 was named the Decade for Education for SD (UNESCO, 2005) and UNESCO's (2009:2) Bonn Declaration stated the importance of investing in ESD and highlighted the importance of equality, human wellbeing the needs of the poor and environmental protection and conservation.

1.2.4 The Principles of ESD

Delivering ESD effectively is therefore difficult, firstly because of the contested nature of SD which can be at odds with mainstream Western society values (Nolet, 2009; Orr, 2004). Secondly, ESD requires the integration of diverse disciplines in order to understand the interrelationships between human society, the ecosystem, economic and political structures (Smyth, 2006; Foster**,** 2001; Sterling, 2001; Fien and Tilbury, 1998; Huckle and Sterling, 1996; Sauve, 1996; Symons, 1996). ESD therefore brings together several disciplines including environmental studies, peace studies, futures education, world studies, development

studies, anti-racist education, human rights education and global citizenship thus developing a holistic view of the individuals place in the world. (Bennell and Norcliffe, 2009; Sterling, 2001; Fien and Tilbury, 1998; Symons, 1996; Huckle and Sterling, 1996). Thirdly ESD is a transformative agenda (Frisk and Larson, 2011; Nolet, 2009; Sterling, 2001) based on changing values and behaviours and is more than learning knowledge about sustainability but also promotes the need to change society (Bennell and Norcliffe, 2009; Nolet, 2009). Sterling (2001) and Foster (2001) suggest a need for a paradigm shift in education where learners are given the opportunity to question the norms of society and to think creatively and critically about their world and their relationship to it. Implicit in such ideas is that education can only develop sustainable learners and society where education itself is sustainable (Fien, 2004; Sterling, 2001).

Elliot and Davies (2009) note that the road to ESD pedagogically can be traced to Environmental Education (EE) as outlined in the Tblisi Declaration (UNESCO/ UNEP, 1978 cite in Fien and Tilbury, 1996) which was a response to global environmental and humanitarian concerns highlighted in UNEP, 1972 (see Appendix A, Page 2).

The Tblisi principles reflect the notion of the interconnectedness of environment, society and economy at the heart of SD and an acknowledgment that this interconnectedness cannot be explored by ecology and natural science alone but must be interdisciplinary. For example, if people only understand the chemistry of climate change but ignore the underlying economic and political structures that keep human society reliant on using fossil fuels and thus producing greenhouse gases, then it will be difficult to consider realistic solutions (Tinney, 2010). Neither can it be an academic pursuit simply learning about sustainability. Learners are part of the problems faced by humanity, they are everybody's problems and thus they must engage with real scenarios that allow them to question, problem solve and think creatively and critically about complicated issues that may have more than one solution. There is also an acknowledgement that links between local, national and international perspectives reminiscent of Agenda 21's Think Global Act Local Agenda (UNCED, 1992) support a connection with caring for the environment. For most learners and particularly young children it is very difficult to think abstractly about distant problems without a personal context. Cleaning up a local park or pond, planting trees or writing to a pen pal from another country may be a better way to start engaging with global problems than simply hearing or watching a film about, pollution, rain forest destruction or global poverty (Tinney,

2010). Despite the strong parallels with ESD, EE has been criticised for emphasizing the environment at the expense of social and economic issues in practice (Elliot and Davis, 2009). ESD philosophy and principles have therefore since its inception underlined the interdisciplinary focus of ESD (Huckle and Sterling, 1996) which is embedded in the whole curriculum and is not a separate subject (Nolet, 2009) or a branch of nature studies (Symons, 1996).

As stated by UNESCO (2003)

> This vision of education emphasises a holistic, interdisciplinary approach to developing the knowledge and skills needed for a sustainable future as well as changes in values, behaviour, and lifestyles.
>
> (UNESCO, 2003: 4)

Although there are arguments in the literature regarding the ecocentric or technocentric nature of ESD (Sterling, 2001) or the transformative agenda of ESD (Huckle, 2012; Frisk and Larson, 2011) there is consensus in the literature that ESD should be:

- Interdisciplinary- embracing and connecting a range of diverse subject areas (Sterling, 2001; UNESCO, 2005)
- Holistic and view the learners as interconnected to the rest of the world (UNESCO, 2005; Sterling, 2001)
- Critical and able to look at issues from different perspectives and consider alternative scenarios and viewpoints (Huckle and Sterling, 1996; Sterling, 2001; Fien, 2004).
- Encourage creative thinking and foster problem solving and divergent thinking (Sterling, 2001)
- Recognise complexity- there are no easy answers to society's problems and the interconnected nature of society's problems means that there may be several different solutions (Symons, 1996)
- Allow for active discovery inquiry led learning- where students investigate and experiment and problem solve without being overly instructed but have the opportunity to think and tackle problems themselves (Huckle and Sterling, 1996).
- Reflective- students should have time to reflect, consider and evaluate their ideas and learning (Sterling, 2001)
- Whole setting approach- If children are to move towards sustainable living then they must see it in action. A school advocating composting cannot then have a kitchen that throws their waste in the bin (Tinney, 2010; Sterling, 2001)

- Futures approach- The future depends on today's behaviour. If learners can consider the range of possible futures that may occur, and link these futures to how they waste resources, treat their fellow human beings and the natural world, then it may be easier to understand the impacts of their actions on the world (Tinney, 2010; Sterling, 2001).
- Active participation and decision making- learners participate in decisions on how they learn but are also active citizens in supporting the move towards sustainable society (Sterling, 2001; Symons, 1996).
- Student led and relevant to student's context – students are not 'empty vessels' but bring their own socio-cultural experiences to their learning and this should be built upon during learning (Sterling, 2001).
- Not in isolation – education for sustainability should include the whole community not just educators and learners. There should as Sterling suggests be 'fuzzy borders' between the community and educational settings allowing an interchange of ideas and activities between both. Parents and the community are part of the experience as much as their children (Sterling, 2001).
- Educators facilitate rather than instruct, learning is seen a collaborative. It is a process where educators must reflect on their own ideas, attitudes, behaviours and values. They must also take an interest in the world around them and their place in it and become interdisciplinary in their view of the world. This will require support and resources enabling the educators to be confident in diverse areas that may embrace social, science, economic and political knowledge (Tinney, 2012; Nolet, 2009).
- Values driven and transformative where the current society is critiqued and debated and that sustainable development viewpoints are critiqued and discussed. The underpinning philosophy of ESD is to change society in line with the principles of Sustainable Development (Nolet, 2009; Sterling, 2001; Huckle and Sterling, 1996).

1.2.5 Transforming society and values based learning

Sterling (2001) highlights that despite education's key role in SD it may also be a significant barrier to moving towards a sustainable society.

> most mainstream education sustains unsustainability-through uncritically reproducing norms, by fragmenting only a narrow part of the spectrum of human ability and need, by an inability to explore alternatives, by rewarding dependency and conformity, and by servicing the consumerist machine
>
> (Sterling 2001: pages 14-15)

Frisk and Larson (2011), Nolet (2009) and Orr (2004) also discuss the paradox that knowing about the problems faced by society does not correlate with people displaying the types of changes in behaviour required to avert these problems. Frisk and Larson (2011) suggest that educators must embrace behavioural change research, sustainability competencies and pedagogy into their work. For example Frisk and Larson (2011) cite Monroe (2003) in the context of an education program to buy local food. People would need to be given procedural knowledge, in terms of knowing how and where to buy local food, social knowledge such as evidence from other people who have bought and enjoyed the food, effectiveness knowledge on the positive impact of locally grown food. Declarative knowledge (how the food is grown, food mile information, how much carbon dioxide released when it was produced) would not be sufficient to change people's food choice behaviour. A transformative agenda therefore suggests that educators take a specific standpoint or view in support of SD which may be counter to mainstream society (Sterling, 2001).

A value laden concept such as ESD may also present ethical dilemmas for educators particularly as Fien (1997) suggests that neutrality of educators has been seen as virtue when engaging with learners, where subjects are tackled in a balanced way without educators revealing their own views or promoting a particular set of values. Holden and Hicks's (2007) study of primary and secondary PGCE, and primary undergraduate teacher trainees noted that some participants were concerned about overly influencing children's viewpoints with their own beliefs without letting children make up their own minds, Summers et al. (2003: 340) also noted that primary teachers were also concerned about neutrality One research participant suggesting 'Wouldn't want to influence [pupils] one way or the other… just to make them aware 'Well this is one side of the argument and this is the other-you make up your own mind'. Another noting 'to make [pupils] aware of both sides of the argument, even though I come down very much on one side of the fence…if they do ask me what my opinions are, I'll let them know but make it clear that they are my opinions'.

Neutrality itself may be a social construct, within educational systems that are part of a value laden human society with a range of views and beliefs (Grant and Zeichner, 1984; Stanley, 1985). Educators with critical theory (Habermas, 1984) or reconstruction viewpoints (Stanley, 1985) would argue that education should not simply maintain the status quo but should provide a 'critical pedagogy' which instigates social change (Fien, 2004). Fien (1997) suggests that when teachers hide their own views from students then it encourages these

students to hide their beliefs and values from others. A pedagogy which allows learners to express their own views as well as to question and consider alternative scenarios and opinions can promote the critical discourse necessary for ESD (Fien, 1997; Huckle, 1993; Kelly, 1986).

1.3 ESD in Wales and the development of ESDGC

Since the UK Government passed the Government of Wales Act in 1998, the concept of SD has been central to Welsh policy with the inclusion of a governing statute incorporating SD across all its work and placing a duty on the National Assembly of Wales to promote SD. In 2000 the Welsh Assembly Government (WAG) published its SD Scheme *Learning to Live Differently* (WAG, 2000) followed by an Action Plan in 2001 to implement the Scheme (Tinney, 2010).

Bennell and Norcliffe (2009) provide an extensive review of the development of ESDGC in Wales and highlight the role government and non-government organizations, local authorities and initial teacher training education institutions played in encouraging the inclusion of ESD and Global Citizenship (GC) within the Welsh curriculum prior to and post devolution. Early in the 21st Century these expert groups and organizations formed WAG convened working / development groups linked to ESD and Education for GC (EGC). In 2001 the publication of *The Learning Country* (WAG, 2001) announced a significant overhaul of education in Wales and included commitments to sustainability (Bennell and Norcliffe, 2009). The work of the expert panels as well as the reforms in Welsh education led to the ACCAC (2002) publication *Education for Sustainable Development and Global Citizenship* which noted nine key concepts pertinent to ESDGC, these being interdependence, citizenship and stewardship, needs and rights, diversity, sustainable change, quality of life, uncertainty and precaution, values and perceptions, and conflict resolution (Bennell and Norcliffe, 2009; ACCAC, 2002). Despite merging for efficiency and effectiveness reasons (Bennell and Norcliffe, 2009), the merging of ESD and EGC reinforce the interconnected values of SD and GC and James et al., (2008:33 cite Oxfam's 1997) definition of GC:

> (1) an awareness of the wider world and a global citizen has a sense of their own role; (2) respecting and valuing diversity; (3) understanding how the world works economically, politically, socially, culturally, technologically and environmentally; (4) participating in and contributing to the community at a range of levels from the local to the

> global; (5) willingness to act to make the world a more equitable and sustainable place, and (6) taking responsibility for their actions.

Thus, the concepts outlined in ACCAC (2002) reflect these values and are also similar to those of the Global Dimensions curriculum in England (Bennell and Norcliffe, 2009).

In 2004 a common inspection framework made it a requirement that all school inspection reports included reference to ESDGC (Estyn, 2004) reinforcing the importance of this agenda. A baseline study of ESDGC in Wales by ESTYN (2006a) noted that delivery was not consistent across Wales and that commented that many schools engaging with ESDGC were concentrating on issues linked to environmental sustainability at the expense of global citizenship. Schools which were not developing ESDGC appeared not to have 'a clear understanding of the definition, purpose and benefits of ESDGC' (Estyn, 2006a: 3) and ESTYN revised its inspection guidance to reinforce the holistic nature of ESDGC (Estyn, 2006b).

In 2006 the Welsh Assembly Government published *Education for Sustainable Development and Global Citizenship- A Strategy for Action* (DELLS, 2006) which integrated ESDGC across the formal and informal education sectors from early childhood to adult education (see review by Bennell and Norcliffe, 2009) and in 2008 the *ESDGC: A Common Understanding for Schools* (DCELLS, 2008a) was published and in response to ESTYN and teachers concerns that the nine concepts of ESDGC were complicated to deliver introduced seven alternative yet complementary themes: choices and decisions; consumption and waste; health; identity and culture; climate change; wealth and poverty; the natural environment (Bennell and Nocliffe, 2009). ESDGC guidance highlights the importance that ESDGC is cross curricular, interdisciplinary and not simply an 'add on' and link these ideas link to five common areas needed to implement ESDGC: leadership and commitment; learning and teaching; school management; partnerships and community and research and monitoring, which dove tail closely with principles outlined in section 1.2.4.

In order to gain Qualified Teacher Status the trainees must demonstrate that they are 'familiar with the most recent national guidance on the promotion of ESDGC (DCELLS, 2009: 40) and 'that they take appropriate opportunities to promote and teach ESDGC in all relevant aspects of their teaching' (DCELLS, 2009: 114). ESDGC should therefore play a significant role in the development of new teachers and in 2010 became a key learning outcome to be

assessed by ESTYN during school inspections (Estyn, 2012). ESTYN notes in its 2009-2010 annual report that at its best, ESDGC has helped learners to become aware of a:

> range of perspectives on sustainable development and global citizenship and has provided learners with the knowledge, understanding and skills to make their own judgments…..The most successful providers ensured that EDSGC programmes of work were not confined to a few subjects or courses but reflected the values and practice of the provider across all its work.
>
> (Estyn, 2010:11)

It is surprising, in the light of the previous quotation and advice in ESDGC guidance documents (ESDGC 2008a; b) underlining the interdisciplinary and cross curricular nature of ESDGC, that in its primary school inspection guidance ESTYN, (2012: 27) notes 'Education for sustainable development and global citizenship (ESDGC) has a clear place in subjects of the National Curriculum, such as science and geography, and it is one of the five themes in the Personal and Social Education Framework' reinforcing the traditional focus of ESDGC within the physical and environmental sciences (Chalkely, Blumhof and Ragnardottir, 2010).

Bennell (2011) provides an extensive exploration and analysis of the development of ESDGC within teacher trainee courses in Wales, highlighting among other things the key role ESD and GC related organisations and local authorities have in promoting and supporting ESDGC, the importance of networking opportunities within the sector; the need for information and resources in supporting ESDGC delivery and the priority for research based evidence linked to ESDGC and teacher training. Bennell (2011) concluded that initial teacher training in its current form only serves to introduce trainees to ESDGC but falls short of being transformative.

In 2009 the Government published *One Wales One Planet* (WAG, 2009a) which integrates SD across all sectors of Government including education and has made a commitment to further training and resourcing of ESDGC. In 2014 the WAG intends to introduce *The Future Generations (Wales) Bill* as part of the WAG legislative powers in order to make SD the central organising principle of public services in Wales (WAG, 2013). It would appear therefore that ESDGC will remain a priority in Welsh education reflecting the priorities of the government agenda.

1.4 ESD, ESDGC and young children

UNICEF (2013: 1) highlights the particular importance of SD for children 'Sustainable development starts and ends with safe, healthy and well-educated children, contributing fully to their families and societies'. The literature associated with ESD and early childhood is international and is often linked to pre-school contexts where children do not start school until they are five or older (Davis, 2010). In Wales the early childhood context is complicated because children enter school at 3.5 years. Much therefore of the ESD literature from an international pre-school context has relevance to young children in the Foundation Phase and has been utilised in this literature review accordingly.

In the context of early childhood several authors highlight the common paradigms between early childhood and ESD noting an emphasis on holism, interdisciplinary and integrated curriculum, active, relevant and child led learning (Prince, 2010; Davis et al., (2009); Hagglund and Pramling Samuelsson, 2009; Pearson and Degotardi, 2009; Elliott and Davis, 2009. Davis (2005) however highlights that ESD is not well developed within early childhood research literature and Elliott and Davis (2009) highlight that the integration of ESD into early childhood practice has been slow. Elliott and Davis (2009) suggest that this is linked to the misconception that young children are unable to deal with abstract and complex issues and that children's interaction with nature and the outdoors has not made adequate connections with respecting the environment or the interconnections between children and their world. Edwards and Mackenzie (2011) note that ESD integration with early childhood may also be hampered by an overly child led play / developmental focus (such as those represented by the work of Rivkin (1998) and Piaget (1953) suggesting that in the context of ESD:

> 1) play-based learning needs to draw on and recognize children's existing cultural competencies; 2) acknowledge and actively include the role of the adult educator in connecting children's play activities to particular conceptual and content-based ideas; and 3) promote the importance of teacher planning for learning in relation to children's play and the acquisition of content knowledge.

These arguments provide a socio-cultural agenda (Vygotsky, 1972 and Rogoff, 2003) for linking ESD and early childhood with Pramling-Samuelsson and Kaga (2008:12) noting successful ESD for early childhood 'must be rooted in the local concrete reality of young children and Pearson and Degotardi (2009:104) adding that children should be 'nurtured in

achieving skills that will enable them to contribute productively to the sustainability of their social and physical environments'. Davis et al. (2009) have developed recommendations for the development of ESD within early childhood and note key principles linked to: equality of access to education and lifelong learning; partnership working and working with parents and the wider community; professional development of practitioners; whole setting sustainability approaches; active implementation of ESD values into the curriculum and support of research capacity within the field.

1.4.1 Young children and complex issues

Despite the opportunities highlighted in section 1.4 of integrating ESD and the early childhood curriculum Stanley (1985) and Warnock (1996) question whether young children have developed the cognitive skills required to think about complex world problems and therefore do not have the knowledge to reach an informed view. However, others such as Murdoch (1992) argue that as with many controversial or difficult subjects it is possible to start thinking about sustainability at an emotional and cognitive level appropriate to the child. Research by Page (2000) investigated the hopes and fears of four and five year old children in Australia in terms of their futures. These children demonstrated an awareness of environmental problems such as global warming. Elm (2006 cited in Hicks and Holden, 2007) presented interview data with four to six year olds. These children referred to issues and problems linked to litter and the natural world in their thoughts about their community's futures and Engdahl and Rabusicova (2010) provided a detailed international interview survey which expressed young children's (under eight years old) thoughts and concerns regarding SD. Therefore Elliott and Davies (2009)'s views that it is a misconception to consider young children are unable to deal with abstract concepts would appear to have some value. Sterling (2001) also suggests that learners are not 'empty vessels' and already have their own view on sustainability issues influenced by their parents, community and the media and this is also the basis of Davis et al., (2009) and Pearson and Degotardi (2009) highlighting the importance of a child's own social cultural context. Palmer and Suggate (1996) suggest such early views and possible misconceptions are a good starting point towards developing more accurate and detailed understanding of complex issues when children are older.

Symons (1996) also suggests that young children may benefit from being provided with a learning environment that supports self-worth, communication and cooperation, indicating

that children with high self-regard are likely to be more altruistic, generous and sharing, concepts related closely to the sustainability agenda. Children who are supported to express their thoughts more clearly and listen to others may have more positive attitudes to other people, and thus will be better equipped to discuss and debate the complicated issues which from part of ESD as they grow older (Symons, 1996).

1.5 Foundation Phase and ESDGC

The Foundation Phase Framework is a play orientated, holistic curriculum for young children 3.5 -7 years emphasising the development of skills and knowledge and building on a child's previous experiences (DCELLS, 2008c). The Framework emphasises diversity and equality and partnerships with a child's home environment (DCELLS, 2008c). There are seven areas of learning which are cross curricular: Personal and Social Development, Well-Being and Cultural Diversity; Language, Literacy and Communication Skills; Mathematical Development; Welsh Language Development; Knowledge and Understanding of the World; Physical Development; Creative Development.

Bennell and Norcliffe (2009: 18) state ESDGC 'is a strongly implicit in the new Foundation Phase', and as noted by Tinney (2010) there are clear similarities between the principles of ESDGC and the Foundation Phase beyond the traditional geography and science emphasis of Understanding and Knowledge of the World. For example, the Foundation Phase has at it centre 'the holistic development of the children and their skills across the curriculum, building on their previous learning experiences, knowledge and skills' (DCELLS, 2008c: page 4) and mirrors the ESD emphasis on integrated, holistic and interdisciplinary learning which builds on children's previous experiences rather than viewing children as empty vessels to be instructed (Pearson and Degotardi, 2009; Sterling, 2001). The Foundation Phase emphasises that 'the experiences that children have had before the setting / school need to be recognised and considered' (DCELLS, 2008c: 5) and that settings should provide 'a meaningful, relevant and motivational curriculum for their children'. Again, this reinforces ESD's ethos of learning about issues which are relevant to the child's context (Pearson and Degotardi, 2009.) The Foundation Phase framework also promotes an active, discovery based curriculum 'promoting discovery and independence' (DCELLS, 2008c:4) where 'as children learn new skills they should be given opportunities to practice them in different situations, to reflect and evaluate their work.' where 'empowerment is seen as a central concept so that children are better equipped to take greater charge of their lives in order to enhance their self-

confidence, competence and self-esteem' (DCELLS, 2008d: 5) This emphasis on independence, reflection and activity, self-worth and confidence would provide the skills Symons (1996) suggests young children require to engage with some of the world's problems.

Strong links between the child's community and their school or setting is at the heart of ESD (Davis et al., 2009) and Foundation Phase guidance suggests that 'positive links between the home and providers of care and education, and appreciation of parents / carers as the children's first educators' (DCELLS, 2008d: 5). As noted by Tinney (2010) if a child is learning and developing recycling behaviour at school but this is not promoted at home then joint projects linking children and parents can support each other's understanding and motivation in this area. If a child is creating a wildlife garden at school then the parents can be involved in creating the project with them. More importantly parents and the wider community's involvement in children's learning allows for an exchange and discussion of ideas, beliefs and values where teachers can also learn from other people's views of sustainability.

ESD theory notes that active participation and citizenship are important and this is also the underpinning principle of Article 12 of the UN Convention on the Rights of the Child to which the WAG has been firmly committed from its establishment (Tinney, 2010). The Foundation Phase 'gives opportunities for children to be listened to and their meaningful suggestions acted upon' (DCELLS, 2008d: 17). However despite School Councils (WAG, 2009) and other forums where school children are given responsibility for developing school initiatives, the participation of young children may be superficial (Symons, 1996). Hart's ladder of participation model (Hart, 1997) highlighted the different aspects of young people's role in decision making. Hart suggests that meaningful participation allows children to initiate their own ideas in particular programmes or projects, where they direct the work themselves or share the decisions with supporting adults. For very young children initiating ideas may be difficult, however shared decision making with supportive adults willing to listen to their needs and opinions is possible and links closely with the ideas of Vygotsky (1978) and Bruner (Wood et al, 1976) regarding the role of adults in supporting and scaffolding young children's learning.

The Personal and Social Development, Wellbeing and Cultural Diversity area of learning of the Foundation Phase (DCELLS, 2008c:17) provides opportunities for children to value themselves, each other and their environment. They are given opportunities to 'communicate and reflect on the decisions made in stories situations or personally, suggesting alternative responses (DCELLS, 2008c:17) and ask questions about what is important in life from a personal perspective and from the perspective of others. They are also given the opportunity to 'talk about the choices available to individuals and discuss whether the choices available make a decision easier or more complex'. ESD depends on understanding different beliefs, values and behaviour. For example, as Symons (1996) discusses, recycling programmes are questionable if the children have not been able to question and discuss the why, what and how of recycling. Educators and learners need to be able to ponder the bigger questions. Are there better alternatives to the plastic bottle, would a jug of juice and glass cups be more sustainable? Why is society so throwaway, can society learn from the past, and does changing our behaviour beyond simply recycling offer a better future? The opportunity to think about alternative scenarios and ideas will be easier in a learning environment where young children begin to appreciate that the world is full of complex decisions and where they have the opportunity (as the Foundation Phase encourages) to question and reflect on their own values and decisions. Facilitation is therefore key to ESD and central to the Foundation Phase approach 'is the practitioner as a facilitator of learning, with the child at the heart of learning and teaching' (DCELLS, 2008c:12).

Children may be discussing issues the adults themselves are unsure about and Symons (1996) advises that educators require good sources of information which are up to date and relevant in order to support their engagement with children on different aspects of sustainability. Educators also need to acknowledge that this field will often start as problem solving and end with problem finding, where the children's questions and reflections churn up new areas to explore (Brighouse cited in Symons, 1996). Teachers will need to acknowledge that they do not and cannot be 'all knowing' and will learn with and from the children which reflects global sustainability itself, where the issues facing human beings are constantly evolving and changing.

1.6 Whole school ethos and partnerships

Some authors such as Sterling, 2001, Davis, 1998; Huckle and Steling, 1996, Fien and Tilbury, 1998) suggest that ESDGC cannot be instructed or practiced in a vacuum. Symons

(1996) stresses that children who see unsustainable practice in their settings are less likely to change their behaviours and attitudes, even if positive ESDGC activity is part of the curriculum. Sterling (2001) argues that educational settings need to take a whole organisation approach and make sure ESD it is practiced by all staff rather than a dedicated few.

Tinney (2010) suggests many settings work in partnership with education officers or sustainability experts from other organizations. Such organizations provide practical, active learning opportunities which link closely to ESDGC, as well as other aspects of the curriculum. One project that helps engage children and the wider community with SD is the Ecoschools programme. This is an international award based initiative which encourages children and young people to take key roles in decision making and participation in areas linked to litter, waste minimization, transport, healthy living, energy use, water use, school grounds and global citizenship (Tinney, 2010). Forest school, Fair Trade and healthy living schemes also provide young children with opportunities to see different perspectives and ways of living, and highlight the importance partnership working provides the ESDGC curriculum. Several organisations also provide opportunities for education practitioners to improve their own sustainability awareness and knowledge of ESDGC (Tinney, 2010). In Wales, Norcliffe and Bennell (2009) note the important contribution non–government organisations have made to the development of ESDGC, further strengthening their role in the continued development of ESDGC as a transformative curriculum.

1.7 Learning with Nature

One important strand across all areas of learning within the Foundation Phase curriculum is learning outdoors (DCELLS, 2008c). The importance of outdoor learning experiences has long been established in the early year's sector (Elliott and Davis, 2009) and several authors currently highlight the importance of outdoor play in early years practice (Knight, 2009; White, 2007; Bilton et al., 2005; Bilton, 2002). It plays a significant part in children's social, emotional and physical development, with authors such as Froebel (Siencyn, 2008), Pestalozzi (Siencyn, 2008), Steiner (Nicol, 1998), Dewey (Rivkin, 1998), Margaret and Rachel Macmillan (Siencyn, 2008) and Nabhan and Trimble, (1996) acknowledging the benefits children gain from interacting with nature. Several recent publications (Knight, 2009; White, 2007; Bilton et al., 2005 and Bilton, 2002) also highlight the importance of developing outdoor experiences and provision in early year's settings.

Much early childhood discussion of the outdoors has however, until recently, concentrated on the benefits the outdoors provides the child (Tinney, 2010). It is crucial to acknowledge that outdoor experiences for young children can also benefit the natural environment and promote caring instincts in young children for nature and for other people (Prince, 2010; Elliott and Davis, 2009; Vaealiki and Mackey, 2008). For example research suggests that that adults now working in environmentally related professions cite positive early outdoor experiences as key to their environmental awareness as adults (Palmer 1992; Tanner 1980) This is also explored by Wilson (1997) and Louv (2008) who suggest that just being in nature spaces provides a backdrop to empathize with nature. Wilson (1994 cited in Wilson, 1997a) maintains that humans have an innate love of and bond with the natural world which he refers to as biophilia and indicates the importance that children can experience natural environments. Louv (2008) also indicates that children suffer from 'nature deficit disorder' in a world where they are unable to interact and play in wild places. Work by Simmons (1994) and Wilson (1994 cited in Wilson, 1997a) goes further suggesting that children who are not given opportunities to be outdoors build up fears and phobias of the outdoors. Wilson (1994 cited in Wilson, 1997a) interviewed a group of thirty preschool children 3-5 years old and asked them questions about their understandings, attitudes and feelings towards the natural world. Most children had very negative views of nature, being scared of some animals and plants, fearing sickness from being out in the rain and indicating being violent towards insects and young birds. Sobel (1996) suggests that the fear of the natural world or 'ecophobia' can be countered by allowing children the opportunity to be in 'special natural places', thus building the positive experiences in the outdoors, that may support them to know and care about nature.

Sustained and regular opportunities in nature can provide a challenge for Foundation Phase practitioners. Interacting with nature requires living areas with plant and animal life, not simply concrete play grounds or very limited space outdoors. Partnership working with programmes such as Forest School can provide regular outdoor experiences, however Wilson (1997) notes that a child needs to take ownership of his/her special space. Children should be allowed to ‘create, change and personalise’ the environment (Wilson, 1997a) which allows them the opportunity and time to develop positive thoughts towards the natural world (Wilson, 1997b). Maybe yards and playgrounds can also be a nature haven but this involves commitment, community support and children's active participation and planning (Moore, 1989) to make concrete into wildlife garden, wild area or sanctuary. Children who have been

involved in a meaningful way in designing and planning their nature experiences are often more likely to look after and protect such places than if they have been planned for them or their involvement has been tokenistic (Hart, 1987 cited in Symons, 1996).

Elliott and Davies (2009) also make a strong case that nature itself must be viewed from an ecocentric perspective in order for early childhood and ESD to be mutually reinforcing. This approach suggests that for outdoor experiences to be beneficial requires practitioners in the Foundation Phase to value nature intrinsically. Sometimes incidents happen where insects are squashed, played with or moved from their habitat by young children. Practitioners in the ESD paradigm must consider how such experiences can be used to foster respect for the environment and to ensure damage to the environment from outdoor learning is limited. Vaealiki and Mackey, (2008) observations of outdoor learning in New Zealand has also demonstrated that children being able to care for nature and living things can also encourage empathy for other children.

With early childhood and ESD underlining the values of learning in nature it is unsurprising that Davis (1998) suggests that those working with young children should become outdoor advocates, ensuring that the outdoor spaces available to children are sufficient. She also reinforces the view that parents and the wider community would benefit from being part of such experiences, especially at a time when children spend very little time with nature due to parental fears regarding increased traffic, accidents and 'stranger danger'; health and safety and litigation worries in settings and public spaces (Gill, 2007) and the pull of television and other media keeping children indoors (Palmer, 2006; Davis, 1998). As emphasized by Chawla (1998) and Wilson (1997) early year's practitioners can do this if they allow children to plan and make decisions relating to their outdoor learning. Being outdoors however is only part of the ESD agenda and as Symons (1996) and Davis (1998) stress, environmental awareness should be in considered in the context of social, economic and cultural issues, and not in isolation. Elliott and Davis (2009: 70) also caution that an overemphasis on outdoor play in nature as 'being sufficient to address the challenges of sustainability is inadequate'.

1.8 The role of the adult / teacher

WCED (1987:14) highlighted teachers important role in supporting the 'extensive social changes' required for SD and Nikel (2007) discusses the influence teacher thinking processed may have on teacher behaviour in terms of delivering ESD.

Nikel (2007: 548) cites Hart (2003)

> Environmental education occurs in schools not so much as a result of curriculum mandate or government policy as the personal commitment of teachers who turn their personal theories into practical professional actions in their classrooms, schools and communities.

Walshe (2008) also highlights researchers growing interest in how student teachers interpret and understand ESD noting an increasing an international emphasis on reorientation of teacher education towards sustainability as outlined in UNESCO (2005). There is therefore significant evidence analysing educators' own views, understanding and perceived benefits and challenges of ESD from primary to higher education (Demirkaya, 2009; Gough, 2008; Pepper and Wildy, 2008; Walshe, 2008; Corney and Reid, 2007; Holden and Hicks, 2007; Nikel, 2007; Spiropoulou et al., 2007; Reid and Petocz, 2006; Summers et al., 2005; Summers et al., 2004; Summer et al. 2003).

For example Summers et al., (2003) qualitative interview and observational study of nine primary school teachers in England / Wales noted innovative teaching strategies and a good use of resources. Some teachers did view ESD as a discrete or bolt on subject while others thought it should pervade the whole curriculum. Teachers also highlighted the importance of supporting children to take action and feel empowered while they also discussed the problems of teaching controversial subjects and the concerns regarding sharing their own views with pupils (noted in Section 1.2.5). Summers et al. (2003) noted that some of the younger children's topics linked to ESD tended to have an environmental focus linked to caring for the environment however the authors contested that the emphasis on responsibility and making a difference was a foundation for more complex issues when older (also discussed in Chapter 3). The authors of this study did however note that the participants were already interested in this field of work and were either self-selected or nominated for the project and thus may not reflect the wider teacher population.

A study of teacher trainees from both the secondary and primary sectors in England by Holden and Hicks (2007) discussed the trainees' knowledge, understanding and motivation towards global issues. Some participants noted that global thinking was important to prepare children to face the challenges of society. However they reinforce some of the issues highlighted in Summers et al (2003) such as noting concerns about how to include global issues in their teaching workload, lack of confidence and worries when dealing with sensitive or controversial issues appropriately and a lack of knowledge of current issues.

Spiropoulou et al., (2007) study of 188 primary teachers with a questionnaire survey noted that several participants has misconceptions of ESD and highlighted the need for teacher training facilities to support the development of ESD and the development of a manual to guide students through the ESD process. Although this refers to research in a Greek context Bennell (2011) also noted the importance of guidance and training when supporting the delivery of ESDGC in Wales. In a Turkish context, Demirkaya's (2009) study of prospective primary school teachers noted their need for support when understanding the environment and Gayford (2003) also makes a strong case for the use of reflective practice and participatory methods in supporting teachers' engagement with ESD. Gayford's (2003) research involved teachers in group discussions deciding on their own ESD aims and objectives and then reflecting on how this had improved their own understanding of ESD, with possible links to action research and experimenting with new approaches in the context of ESD.

Despite several papers investigating the views of both primary and secondary teachers / trainees in the context of ESD there is a limitation in terms of specific early childhood investigations in a Welsh or UK context. A study, from Finland (Salonen and Tast, 2013) noted the views of early childhood educators of sustainability and how it influenced their everyday life. The paper did not link the views and behaviour specifically to their professional context although it could be argued that the natural behaviours of the educators in terms of ESD could influence the young children in their care (for example Davis, 2010). The paper also suggested a key role for non-governmental organisations in working with early childhood educators to make the economic, social and environmental connections necessary. Arlemalm-Hagser and Sandberg (2011) also highlighted that early childhood practitioners in Sweden held diverse views of ESD and that different concepts of ESD could influence how it would be practiced in preschools settings, noting an important role for early

childhood educators in creating meaningful learning opportunities that help children engage the complexity of SD. However they also noted that to fulfil the participatory nature of this agenda it would be necessary to include children's views in research linked to SD and the curriculum (see section 3.2.3).

Chapter 2 Methodology

2.1 Introduction and Context

In light of the key themes highlighted and evaluated within Chapter 1 it was noted that in Wales there was a lack of empirical data within the field of ESDGC (Bennell, 2011) and that this research investigation should collect data to help with this knowledge gap. Therefore this researcher would collect data which could evaluate teachers and trainees' interpretation and experiences of ESDGC; explore the particular perceived relevance and links of ESDGC to young children in the Foundation Phase by teachers and trainees, and evaluate the role and insights of ESDGC focused organisations working to support schools and teachers with ESDGC. Such data would support the research aims 2-5 stated in section 1.1

These research aims required the design of a mixed methods approach research strategy in order to answer the four key primary research areas of the dissertation. The mixed method approach would include the use of questionnaires, structured interviews and an analysis of web based material. Prior to choosing and designing a research approach and strategy it was necessary to explore and evaluate the philosophy of different research approaches. In section 2.2 therefore approaches to research, research strategies and research methods are discussed and then used to justify the specific mixed method strategy used within this piece of research. Section 2.3 outlines the ethical framework for this research, and section 2.4 evaluates the limitations and weakness of the methodology chosen.

2.2 Choice of research approach and strategy

2.2.1 Research approaches, paradigms and philosophy

Several authors explore and debate the divergent approaches or paradigms of positivism and anti-positivism when undertaking research (Denscombe, 2013a; b; Biggam, 2011; Cohen et al., 2005). A researcher with a positivist approach is 'someone who holds that reality is objective and independent of the observer and so can be measured and predicted' (Biggam, 2011: 137) and thus reflects the scientific approach and the study of the physical and natural world (Biggam, 2011; Cohen et al., 2005) and the utilisation of methods and procedures developed to discover universal or general laws (Cohen et al., 2005). However the anti-positivist approach takes a counter view, as highlighted by Burrell and Morgan (cited in Cohen et al., 2005:7)

> The emphasis in extreme cases tends to be placed upon the explanation and understanding of what is unique and particular to the individual rather than of what is general and universal.

Anti-positivism suggests that there are several different but valid interpretations of reality (Denscombe, 2013a; b; Biggam, 2011) dependent on time (when the data was collected) and the context in which it was collected (Biggam, 2011). Therefore the information collected may not be predictable, repeatable or measurable (Denscombe, 2013a; b; Biggam, 2011; Cohen et al., 2005).

This current research is grounded in the study of early years education and is part of the social sciences which normally involves the study or interpretation of issues associated with human subjects and thus is influenced by human participation and observation (Biggam, 2011; Cohen et al., 2005). The anti-positivist stance has had significant impact on the social sciences in terms of research methodology as highlighted by Beck (1979 cited in Cohen et al., 2005: 20).

> The purpose of social sciences is to understand social reality as different people see it and to demonstrate how their views shape the action which they take within that reality. Since the social sciences cannot penetrate to what lies behind social reality, they must work directly with man's definition of reality and with the rules he devises for coping with it. While the social sciences do not reveal ultimate truth, they do help us to make sense of our world.

However within the social sciences literature there is an apparent dichotomy and debate between proponents of a positivist (normative) paradigm or anti-positivist (interpretive) paradigm (Denscombe, 2013a; b; Biggam, 2011; Cohen et al., 2005). The normative viewpoints represent positivist approaches which use natural science methods to study collective human behaviour and how it is influenced by past external or internal stimuli (Cohen et al., 2005). This paradigm relies on forming universal theories of behaviour and generalising findings to a whole population. However such an approach can be criticised for generating theory which is abstract and remote from real life situations (Cohen et al., 2005; Biggam, 2011) and thus it fails to identify the uniqueness of individuals and life in real situations beyond the confines of a research study. An interpretive approach is concerned with the subjective world of human experiences and the individual's understanding of the world around them and therefore theories can emerge from particular situations reflecting the

different contexts of participants. Actions are only meaningful as shared experiences and this approach recognises multiple realities and that people hold different constructions of the world depending on their context (see Cohen et al., 2005 for further reading). Critics of this approach would however question the subjectivity and reliance on participants own views of the world. For example in interpretive accounts a person may indicate they like or hate something despite never having tried it or may suggest that they have not experienced something when in fact they do not recall that experience. A researcher only relying on participants own narratives may not be able to extrapolate such issues without other more objective measures as well.

Critical theory is referred to in research literature as having influenced research approaches (Cohen et al., 2005) and stems from the work of philosophers such as Habermas (1984) where research is seen as being deliberately political (Cohen et al.,, 2005) and unlike positivist and interpretive research this approach should not simply explain and understand phenomenon but should question and critique the *status quo* in which the phenomenon is studied. This approach views that reality is historically based and that people are influenced consciously or subconsciously by the social, cultural and political circumstances impinging on their lives (Biggam, 2011). The researcher not only describes the world but would seek to improve the situation of people through advocating political, social or other change. For example in the field of education research critical theory has been incorporated into research around curriculum ideology, content and pedagogy (Cohen et al., 2005).

2.2.2 Research Strategy Decisions and Choices

2.2.2.1 The philosophy and approach context

Mertens (1998 cited in Biggam, 2011) suggests that researcher will choose a research strategy dependent on their own view of the world and their own support for normative, interpretive or critical approaches within their field of interest. The researcher in this study found this initial decision difficult because she has a training and grounding in the positivist scientific approach and is most experienced in a situation where 'reality is objective and independent of the observer and so can be measured and predicted' (Biggam, 2011; 137) However this research aimed to explore participants interpretations, perceptions and ideas and this suggested that an interpretive approach would be the most suitable to ascertain the opinions and views of participants or to interpret the content of web based material. Critical theory was not deemed appropriate despite this research area discussing a 'value laden' subject area

which as noted in section 1.1 is itself is discussed and researched in the context of critical theory. Some of the data collected may link to aspects of critical theory and may be discussed in such a context during data analysis; however the researcher did not have enough experience to use critical theory as the basis for the research approach.

According to Cohen et al., (2005: 23) phenomenology is involved in the 'study of direct experience taken at face value'. Denscombe (2013a: 6) noting that it 'describes the essence of specific types of personal experience, understanding things through the eyes of someone else'. The researcher had considered a phenomenological approach as a valid option as it would allow participants' experiences and interpretation of the phenomenon of ESDGC to be explored. However on further reading it became apparent that phenomenology is based on complex philosophical views of the world (Cohen et al. 2005; Denscombe, 2013a) beyond the current expertise of the researcher However, further reading highlighted the thematic analysis method, a technique used in other research methodologies (such as Manhire, Hagan and Floyd, 2007) to analyse open ended questionnaire questions and unlike the phenomenological approach is 'independent of theory and epistemology, and can be applied *across* a range of theoretical and epistemological approaches' (Braun and Clarke, 2007:5) and is praised by Braun and Clarke (2007) for offering a flexible tool which can provide, rich, detailed and complex analysis and interpretation of the data.

2.2.2.2 Research Strategy Justification

2.2.2.2.1 The Context

This study was therefore grounded in an interpretive approach with thematic analysis forming the basis for analysing the data gathered, and thus the research was in the main qualitative. Qualitative research involves gathering ideas, feelings and observations, however, it is a common misinterpretation that qualitative data is synonymous with the interpretive approach and that quantitative research ('concerned with quantities and measurement' (Biggam, 2011: 130)) is synonymous with the positivist or scientific approach. The type of research whether qualitative or quantitative is determined by a range of methodological decisions including the choice of research strategy (historical, survey, case study, action research, experimental, mixed method), the design of data collection techniques within this strategy and the particular research objectives.

2.2.2.3 Choice of Strategy

Biggam (2011) and Denscombe (2013a) provide detailed accounts of the benefits and drawbacks of different research strategies and these will not be reviewed here. In the context of this research project the main focus was on the meaning, interpretation and experience of ESDGC by different participants. Action research was initially considered as means to work with settings, with a view to develop practice and improve a specific problem in delivering ESDGC, however it was decided that initially exploratory research highlighting key issues faced by practitioners would be more informative. A large scale survey of teachers was also considered however on reflection emailing schools with a view to gain sufficient replies for a survey would not be appropriate due to the open ended nature of the questions which required detailed responses and thus more time commitment than a tick box questionnaire for time poor teaching staff.

2.2.2.4 Mixed Method Strategy

The researcher decided that the mixed approach was the most suitable for this research study. Denscombe (2013) suggests that researchers who adopt a mixed method approach are taking a pragmatic view of the world and are more interested in answering their research question in the best way rather than debating the purity of normative or interpretive approaches. They will therefore choose a mix of methods and research philosophies in order to complete the research. The mixed method approach therefore means choosing different types of methods and generating different types of data (quantitative and / or qualitative) and using these to complement each other within one study.

The mixed method approach also stressed the importance of triangulation and thus different methods can be used to check the validity of the data. As stated by Denscombe (2013a)

> Triangulation involves the practice of viewing things from more than one perspective. This can mean the use of different methods, different sources of data or even different researchers within the study. The principle behind this is that the researcher can get a better understanding of the thing that is being investigated if he/she views it from different positions.

With four different research aims within this study involving different participant groups and also web based document analysis a mixed method approach was deemed the best strategy as it allowed a mix of questionnaires, interviews and document analysis to be used and gathered both qualitative, and to a lesser extent, quantitative data. However it also allowed for data

from different participants to be compared in order to assess if they were providing similar or very different answers (data triangulation) (Denscombe, 2013a).

2.2.2.5 Procedures

Both research area 2 and 3 and 4 involved the design of questions which would be delivered as questionnaires or structured interviews. All questionnaires were available in both Welsh and English as deemed appropriate by University of Wales, Trinity Saint David's Welsh language scheme (University of Wales, Trinity Saint David, 2012) and ensured all participants had information in a format that was accessible and gave equal priority to both languages. Any interviews were also undertaken in either Welsh or English depending on the preference of the interviewee. Research area 5 involved content analysis of web based material with an ESDGC focus. The four areas of research were also designed as means of triangulation with a view to use data from each different section to check the validity of the research (see section 2.2.2.4). In all four research areas a non-probability (purposive) sample was chosen in order to target particular sections of education, training or ESDGC organisation. As stated by Cohen et al., (2005:104) this sampling strategy 'does not pretend to represent the wider population; it is deliberately and unashamedly selective and biased'. The aim of this research was to explore view points and investigate ESDGC in the context of young children, however the study was not purporting to be valid or representative of all of Wales and was designed to raise issues and ideas that may suggest areas for future research or recommendations for support in the ESDGC / early years sector in Wales in the future.

2.2.2.5.1 Teachers Questionnaires

The initial sampling strategy was to target a non–probability sample and email a questionnaire and research explanation to all primary schools in Ceredigion, Carmarthenshire, Pembrokeshire, Neath Port Talbot, and Swansea using a database of schools sourced via Local Authority websites. Prior to being sent via email the questionnaire was assessed for readability, accuracy and clarity by a colleague. The questionnaire was sent via email to primary schools at the attention of the counties referred to previously on four different occasions between November 1st (2012) and end of January (2013) and in doing so 12 responses were returned and these questionnaires provided detailed and appropriate responses in terms of qualitative analysis. Initial questionnaire returns were treated as a pilot and no major problems were observed with initial participants' responses and the participants' understanding or interpretation of the questions, and thus the request for

participants continued. However it was noted that although these questionnaires included interesting information there could be a bias within the data for returns from those who were most interested and enthused about ESDGC or who may have an axe to grind about the agenda (see section 2.2.2.6), and thus data would have to be analysed in light of these weakness to ensure transparency and validity. The researcher therefore also contacted another four teachers, three of whom agreed to be interviewed in person with the questionnaire questions and one who agreed to provide written responses via email in order to validate these responses with those via the first set of questionnaires. Interviews were undertaken in person at a prearranged time at the teachers' school during January to May, 2013. Responses given to each question were recorded as written notes, and were therefore not full transcripts but notes that were as accurate a record of the meeting as possible. Audio recordings were not made as this was thought to inhibit the participants' responses and as the each interview was undertaken in busy school staff rooms or while touring the school was practically difficult. In all therefore there were 16 responses. Despite being a low number and not adequate for a survey the questionnaires from both e-mail and in person were analysed as structured interviews thus generating qualitative data indicative of an interpretive approach and thus questions 7-21 were open and worded to encourage the teachers to describe or explain their thoughts and ideas (see Box 1).

Box 1 Teachers Questions Rationale

The questionnaire and accompanying letter can be found in Appendix 1.

Questions 1-4 were designed to highlight the teaching and training background of the participants, in order to ascertain the age group they teach and if they had any subjects specialism that may suggest a particular link to ESDGC.

Questions 6-8 were designed to explore the teachers own interpretations and meanings of ESDGC.

Questions 9—12 were designed to explore the how ESDGC is addressed by the teachers in their place of work and how important ESDGC is considered within school life.

Questions 13-15 were designed to explore the views of teachers about the role young children within the Foundation Phase have within ESDGC and how old children have to be to join school decision making committees.

Questions 16-19 were designed to explore the whole school nature of ESDGC and the further ESDGC links the school community has made to the wider community.

Questions 20-21 were designed to explore the benefits and challenges of delivering ESDGC.

Questions 1-6 were closed questions generating responses that could be analysed quantitatively, not as a means to provide statistical validity but to provide some backdrop to the nature of the teacher participants.

2.2.2.5.2 Teacher Trainees

The trainees who participated in the study were chosen as the basis of convenience sampling (Cohen et al., 2005) They were a cohort of students whom the researcher was able to have access to easily and that the researcher had strong links with their course tutors in order to facilitate distribution of the questionnaire. However, within the several year group cohorts of students that the researcher could have sampled within the convenience sample, only final year 3 students were targeted. This was decided in order to be able to gauge the views of students who had studied the majority of the teacher training degree when questioned and thus could provide more informed information than students with less teaching experience. This sampling strategy can be criticised for providing a skewed or biased sample (Biggam, 2011) and could not be justified if this study had hoped to survey the opinions representing teacher trainees across Wales. However the aim of this research was to collect a selection of viewpoints from particular students.

The teacher trainees' questionnaire was designed to be administered to students at the end of a timetabled lecture by one of their course tutors and photocopies of the questionnaire were printed so that students could fill in the answers by hand. 59 questionnaires were filled in, 48 from the English medium group and 11 by a Welsh medium group, representing 57% of the 106 students registered as third year teacher trainees (B Ed with QTS) in 2012/2013 academic year. Prior to being given to students the questionnaire was assessed for readability, accuracy and clarity by a colleague but was not piloted with a group of students partly due to researcher time constraints and partly because the teacher trainers were unavailable apart from the session when they did fill in the final questionnaire. However the answers provided in the questionnaire suggested that the participants had understood and responded appropriately to the questions. Only two questionnaires provided several missing or incomplete answers and thus would be set side during some of the data analysis. The questionnaire was filled in during December (2012). The questionnaire was designed to generate qualitative data and thus questions 3-10 were open ended and worded to encourage students to describe or explain their thoughts and ideas (see Box 2).

Box 2 Teacher Trainee Questions Rationale

The questionnaire can be found in appendix 2.

The questions were also designed to collect students' views and knowledge of key areas:

Understanding and interpretation of ESDGC (question 3-4).

Experiences of learning and teaching linked to ESDGC (question 5-6)

Relative importance of ESDGC to the student (question 7)

Students' ideas on promoting ESDGC (question 8)

Students' feelings regarding the benefits and challenges of ESDGC (question 9-10)

However question two was designed to allow for a closed answer allowing some quantitative data to be collected. During data analysis (see Chapter 3) some of the qualitative data initially collected was also coded in order to collect further quantitative data.

2.2.2.5.3 Organisations ESDGC Personnel

Research area 4 involved designing a brief structured interview / questionnaire to be given to people working in non-government, local government organisations and one teacher training tutor with a brief to explore ESDGC. The organisations had several briefs including human rights, humanitarian and global poverty, global citizenship, environmental stewardship and local, national and international history. However the one theme that united all these organisations was an involvement in education and work with schools to promote ESDGC. Participants were chosen as they had an education brief within the organisations such as education officer or coordinator and were thus a non-probability sample. Some of the participants were a convenience sample as the researcher knew three of the participants as a result of her professional work in the field of ESDGC, however the other five participants were targeted by contacting the education departments of the relevant organisations. In all therefore there were eight participants two of whom were interviewed via telephone and six of whom responded to the email interview. Telephone interviews took place on the request of participants and were recorded by the researcher taking notes and thus represented as accurate a record as possible, but not a word for word transcript. Although this involved mixing the methods of delivering the questions, the decision was made to do this in in order to comply with participant wishes (see Box 3)

Box 3 Expert Participants Questions Rationale

There were 10 questions and these were all open ended questions and can be found in appendix 3. The 10 questions were designed to focus particularly on:

Exploring the participants feeling and views of engaging young children with ESDGC

Exploring their views on the benefits and challenges they found and they perceived teachers found when engaging young children with ESDGC

The views on the age young children are involved in decisions making forum.

2.2.2.5.4. Web document analysis

The 4th area of research involved web based research where the material of organisations involved in education linked to ESDGC in Wales were sourced and the education material on these websites was assessed in terms of its content and support for the delivery of ESDGC. A non-probability sample was taken in terms of organisation and these were organisations either linked to the personnel interviewed or organisations the researcher knew had a strong ESDGC brief.

2.2.2.5.6 Data Analysis

Research area 2-4 involved both qualitative and quantitative analysis

Research aim 2 and 3 used SPSS to collate and code data which provided quantitative data and the number of participants providing specific responses were presented in Appendix 8 as tables.

The open ended questions in research area 2, 3 and 4 were analysed independently but used the same thematic analysis technique.

An example of the coding process and generation of themes can be found in Appendix 4. All the code tables generated and identification of themes for all participants can be found in appendix 5. These themes did not 'emerge' but were identified by the researcher from systematic and detailed analysis of the data and all questions were analysed to limit bias or generating themes from only a subset of the data. Appendix 6 includes Braun and Clarke (2007) thematic analysis process used as a basis for thematic analysis in this study. Once completed the themes identified in the data were discussed in relation to themes identified in the literature review (see Chapter 3). There was also an opportunity to compare themes between research areas 2 and 4 affording some between participant triangulation.

The web based material in research aim 5 was analysed by the researcher trawling through the organisations websites specifically looking for material linked to learning, teaching / teacher resources material and children's activities. These resources were then assessed according to the following criteria.

- Designed for children under seven years old
- Links to Foundation Phase curriculum
- Pedagogy issues (inquiry led, discovery learning, creative thinking, critical thinking, outdoor learning)

4 organisations were assessed and during analysis a brief description of each organisation was provided, however organisations were not identified (see section 2.3).

2.3 Ethics

The research aim of this dissertation was to be able to understand and support the delivery of the ESDGC agenda in Wales, however collecting the data could not be at the expense of the wellbeing and human rights of the participants. As stated by Cohen et al. (2005:49)

> Developments in the field of social sciences in recent years have been accompanied by a growing awareness of the attendant moral issues implicit in the work of social researchers and of their need to meet their obligations with respect to those involved in or affected by their investigation.

Frankfort–Nachmias and Nachmias (1992) discuss the cost/benefits ratio as a fundamental concept expressing ethical dilemmas in social research where the benefits of the research to society as a whole are balanced against the negative impacts on the wellbeing of the research participants. Vice versa the negatives of not doing the research in terms of wider society and a missed opportunity to improve the human condition are also weighed against the participants' wellbeing and rights. Furthermore participants who are part of research projects may also gain benefits such as feelings of satisfaction by being involved in the research study.

Such ethical dilemmas are informed both by the researcher's personal moral values but also by the discipline and professional ethical framework in which they work. For example research ethics has an important place in early years education research in the context of children's wellbeing and rights as noted in the UNCRC (1989) and the contested nature of

children's autonomy and ability to provide informed consent (Cohen et al., 2005). However other disciplines may have a different concept of the child and thus could sanction research not considered appropriate in the context of early childhood research.

Prior to beginning the research the British Educational Research Association BERA (2011), Denscombe (2013a: b), Biggam (2001) and Cohen et al., (2005) were consulted in order to inform and provide an ethical framework for the research. Three key areas pertinent to this research were:

- Cause no harm and participant wellbeing
- Informed Consent
- Anonymity and Confidentiality

2.3.1 Cause no harm / participant wellbeing

In this research study the ethical components of the study were considered from the initial exploration of research ideas. The researcher is a novice in the social sciences and decided that research directly with children without more experience working with children could be morally compromising with the researcher inadvertently harming the children with ill-advised observation or questioning techniques. Therefore on ethical grounds the study was undertaken with adults and did not involve children.

At the beginning of the study the MA research proposal was discussed with MA tutors and placed within the research ethics approval form of University of Wales Trinity Saint David (see appendix 7). None of the questionnaires / interviews were sent to teachers or teacher trainees without prior approval of MA tutors / supervisors and this was also seen as an important part of the ethical planning of the work, to ensure the question asked of participants were not judgmental or likely to cause offence or worry.

2.3.2 Informed consent

Informed consent is based on the participants rights to freedom and self-determination and according to Diener and Crandall (1978 cited in Cohen et al., 2005: 51) 'the procedures in which individuals choose whether to participate in an investigation after being informed of facts that would likely to influence their decision' In all the methods detailed in section 2.2 involved adhering to the concept of informed consent, and thus all questions emailed to

participants or delivered in telephone or face to face interviews were explained orally or in writing to participants including information on the researcher , research aims and possible timescale of their involvement (see appendix 1-3). All participants had the choice to participate by either returning their feedback via email or agreeing to be telephoned or to meet for an interview. In the research aim 2 questionnaire reminders were sent repeatedly to schools to try and increase participation (four times) however this was not undertaken in an accusatory way with emails used to thank those who had already responded and welcoming others to take part if they would like, and thus in the researcher views were not pressurising particular schools to participate. Email returns were considered valid consent as no pressure was put on participants to return their responses. In person interviews were accompanied by a signed content form and the two telephone interviews were in response to an email requesting a discussion instead of filling in the questionnaire and thus these emails were kept as informed consent evidence.

2.3.3 Anonymity and Confidentiality

The study from the onset had decided not to reveal the identity of participants. Questionnaires that were returned could be identified by the researcher due to email addresses but the questionnaires were printed and numbered, with participant details not included during the analysis phase. In person interviews and telephone interviews in research aim 2 and 4 did mean the participants were known to the researcher, however this information was maintained confidentially. The researcher was interested in the honest opinions of the participants and did not want them to feel that they would have their input judged or critiqued in the public domain and thus the names of people or organisations do not appear in the dissertation and are instead referred to as numbers. The analysis of the web material of different organisation is in the public domain already, however in this research it was decided not to name the particular organisations so that that information could be discussed in the context of those interested in research aim 3, if representing the same organisation. The identity of different website organisations is known to the researcher and could in the future be discussed beyond the confines of this research without the risk of revealing the identity of particular personnel working for particular organisations.

2.3.5 Data and records

All data and information collected is stored in one location, securely and any information that could be used to identify participants would be destroyed within one year of submitting the final thesis.

2.4 Limitations and problems producing reliable and valid research

Biggam (2013) and Cohen et al. (2005) discuss the importance of presenting reliable and valid research. Reliable research is a record of the trustworthiness of research. For example has the researcher explained the research procedure clearly and maintained clear and detailed data records (Biggam, 2011).

Within this thesis the researcher has provided reliable and trustworthy information by including a detailed procedure (section 2.2.2.5) and appendix with data collection and analysis procedures outlined.

Valid research

> is all about implementing your empirical work from selection of an overall research strategy to the collection and analysis of your data, in a way that uses research approaches and techniques suited to each of these activities (Biggam, 2011)

Despite attempts to undertake valid research (rationale and justification for research strategy and analysis– section 2.1 and 2.2) there are potential problems and limitations inherent within the strategies and methods chosen. One criticism of the research presented is the use of email open ended questionnaires to answer research aim 2 and 3. Time constraints meant this approach was chosen in order to ensure data from a variety of participant groups could be collected, although semi-structured interviews may have been more informative and could have provided an opportunity to provide prompts to ensure answers were more detailed and deeper (Denscombe, 2013a and b). It would also have been possible to check with respondents if they were happy with the content and interpretation of responses by the researcher, which was not undertaken with the questionnaire, opening up the data to criticisms of not being a true reflection of what participants meant to say. Counter to these criticisms Meho (2006) and Selwyn and Robson (1998) suggest that one benefit of email correspondence in research is that shy participants or those who prefer written communication to answering orally may prefer this approach and thus may participate more

honestly than in face to face encounters. Structured interviews (both face to face and telephone) were also undertaken and the mix of approaches could mean that different types of data collection, led to different types of data in terms of depth and detail. The researcher during analysis was careful to ensure data from all sources was analysed fairly and any discrepancies due to data collection techniques were highlighted in the results (Chapter 3).

Questionnaire and interview data may also be limited by participant factors Denscombe, 2013a; b; Cohen et al., 2005) review several of these limitations but in this current study the most pertinent were that participants may be providing false information accidently or knowingly, such as the Hawthorne effect (Cohen et al., 2005) where participants are trying to impress or influence the researcher by saying what they think would be a pleasing response. The researcher may also be biased when interpreting the data collected Denscombe, 2013a; b). For example the researcher in this study has her own personal views and expertise in ESDGC and could inadvertently or purposively use this view of the world to skew the analysis and interpretation of the data. Participants such as teachers aware of the researcher's links to ESDGC may also provide information they felt the researcher wanted to hear as opposed to their own views of ESDGC. To counter such problems the researcher tried to be open minded when reviewing and analysing data and also presented the broad spectrum of views collected rather than a representative sample only. Triangulation would also support the validity of the research project as a whole where the responses of different participants groups could be checked against each other in order to see if ESDGC was viewed similarly by different groups. The qualitative data collected was therefore not reliable in terms of being repeatable or generalizable but could be used to identify themes relevant to further more detailed investigation in the future.

Chapter 3 Data Analysis, Results and Discussion

All tables which provide original data evidence for the content of Chapter 3 can be found in Appendix 8.

3.1 Analysis of quantitative data

3.1.2 Teachers

There were 16 teachers who took part in the study. 11 (68.8%) having studied a BEd and 5 (31.3%) having studied a first degree followed by a PGCE. Two (12.5%) qualified as teachers in the 1970s, three (18.8%) qualified in the 1980s, seven (43.8%) qualified in the 1990s and four (25.0%) qualified in the 2000s (see Table 3.1), with all participants having qualified for at least nine years and thus providing the views of experienced practitioners in contrast to more novice trainees. 14 participants indicated what their degree or BEd specialism was, with four (25%) highlighting geography, and three (18.8%) Science and Maths (see Table 3.2). Authors have indicated that ESD has a strong association with the Geography (Chalkely, Blumhof and Ragnardottir, 2010; Reid, Scott and Gough, 2002) and parts of the science (Summers, Corney and Childs, 2003) and therefore it is worth noting that 50% of those who answered or 44.8% of the actual 16 participants had specialized in these subjects. However, 50% of participants had also specialized in other subjects highlighting that the participants reflected other subject specialisms as well as those historically allied with ESD.

Of those teachers participating eight (50%) were Foundation Phase teachers, five (31.3%) were junior teachers, and two (12.5%) had responsibility for all age groups. 1 (6.3%) declined to answer this question. Although this research was interested in ESDGC with young children, the participation of other age group teachers was not seen as problematic, partly because of the complexity of ESDGC management within schools, where Ecoschool coordinators and ESDGC coordinators may well be teaching older classes but still have a responsibility for the delivery of ESDGC across the school and partly linked to the ethos of ESDGC as a cross curricular, whole school agenda and approach (Bennell and Norcliffe, 2009; DCELLS, 2008a; DELLS, 2006). All participants indicated that they were aware of ESDGC with 100% indicating some level of parental involvement with the ESDGC agenda, 12 (75%) indicating community involvement (four (25%) declining to answer or indicating no community involvement and 100% indicating they worked with other organizations to deliver ESDGC. Examples of such partnerships will be discussed in section 3.2.

The teachers questioned highlighted the age policy for joining eco committees / school councils, with eight (50%) indicating representation in year 2 or above, two (12.5%) in year 3 or above, three (18.8%) in year 1 or above and three (18.8%) from reception class upwards. Another unpublished study (University of Wales, Trinity Saint David / Countryside Council for Wales Ecoschools Review- on-going) has also highlighted that of 30 primary schools questioned 12 (40%) did not have representation from 3-6 years olds on the school eco committee. Therefore it is worth noting that although the qualitative data indicates the importance of young children's involvement in ESDGC (see section 3.2.2), for several schools in this study young children are not represented on councils designed to allow for children's participation until year 2. Authors such as Clarke and Moss (2011) highlight the importance of listening to young children's viewpoints by using a variety of different methods thus allowing for young children's participation. A key principle of ESDGC is pupil participation and action (Tinney, 2010; DCELLS, 2008b; Sterling, 2001) which is also underpinned by the WAG (2009) school council guidance and thus not being involved in the democratic processes that decide school action may hinder children's ESDGC experience. Therefore other mechanisms, alongside school councils may be necessary to ensure the participation of early years children in all schools (see section 3.2.2)

3.1.2 Teacher Trainees

59 questionnaires were returned 48 (81.4%) representing English medium and 11 (18.6%) representing Welsh medium students. 100% of the participants indicated they were aware of ESDGC, with 49 (83.1%) indicating they had studied ESDGC during their degree, eight (13.6%) suggesting that it had been studied very little during the degree and one indicating (1.7%) it had not been studied during the degree. 19 (32.2%) of participants highlighting that it had been studied during Geography or Knowledge and Understanding of the World and 16 (27.1%) indicating that it had been covered in lectures (see Table 3.3 for full data). Despite a move towards cross curricular study of ESDGC (Bennell and Norcliffe, 2009) and a separation of this area from environmental studies, natural sciences and geography (Chalkely, Blumhof and Ragnardottir, 2006) it is striking that almost a third of the students questioned indicated close ties between ESDGC and these subject areas. This will be explored further in section 3.2.2.

41 (69.5%) of participants indicated that they had observed work linked to ESDGC during teaching practice, with 14 (23.7%) suggesting they had not and 3 (5.1%) indicating they had seen a little. Section 3.2 will explore this further, but it is worth noting that over 20% of respondents perceived that they had not seen any ESDGC in practice despite this being a compulsory aspect of the curriculum which is inspected by ESTYN (Estyn, 2006b; 2012) and a QTS standard (Bennell and Norcliffe, 2009) and thus could be to the detriment of the trainees once qualified. However not being aware of ESDGC may not mean that it has not undertaken in the schools taking place and may reflect students preoccupation with other parts of the curriculum (see section 3.2.3) or a narrow perspective of ESDGC (see section 3.2.1). Some students provided examples of how ESDGC had been observed or delivered in schools (see Table 3.4) with 25 (42.4% making links to Ecoschool work and or environmental management practices (such as recycling) and eight (13.6%) suggesting it was included in lesson plans. It is interesting that these participants highlight Ecoschools and practical environmental management such as recycling without highlighting the social, cultural and economic links of ESDGC as predominantly and dove tails with some of the initial ESTYN findings (2006a) suggesting the greening and environmental component of ESDGC is delivered by schools better than the social and cultural component. However this is only speculative with a small number of respondents and may reflect students own perceptions of ESDGC rather than the broader portfolio taking place in schools.

3.2 Open ended questions: - Coding and Themes Identified

For each participant group questionnaire / interview data was analysed for each question and initially grouped according to generic issues identified. For example ‘looking after planet/ caring for world’, ‘recycling’. These issues were then coded and the researcher explored the data further to recode or refine coding. The final codes chosen can be found in Appendix 5 and a table for each participant group was created so that Teacher Trainees participant number, question number and issue code was given. For example Teacher Trainee, Participant 1, Question 2, Issue caring for world, would be coded TT, P1, Q2, 1. Some questions contained more than one issue and were coded accordingly. Once all data was coded it was possible to highlight themes pertinent to the whole participant group. The themes identified were then compared across the different groups. The themes identified can be seen in Table 3.5 Once this was undertaken for each set of data it became apparent that themes were repeating across the four research aims and different participant groups. The results will therefore be discussed according to relevant themes identified across all

participant groups; however it will be noted within the results where different participant groups have specific opinions or outlooks and ideas. Comparison of the different participant groups allows for triangulation of the data. Several themes cross over and thus have been brought together in order to facilitate a coherent discussion (see Table 3.6).

3.2.1 Interpreting and Valuing ESDGC

WAG guidance to teacher trainees and new teachers highlights that ESDGC:

> prepares learners for the new challenges that will be part of their futures such as climate change and international competition for resources. Helps them to understand the complex, interrelated nature of their world. Builds the skills that will enable learners to think laterally, link ideas and concepts such as needs and rights, and uncertainty and precaution, and make informed decisions.
>
> (DCELLS, 2008b:4)

The interpretation and principles of ESDGC teachers and teacher trainee participants described indicated that participants also thought ESDGC dealt with complexity and links between human beings (or the children in their care) and the wider human and natural / physical world. Some participants also indicated the children would affect and change the world (Table 3.7). Such understanding of the role of the individual and the interconnectedness of life not only reflects ESDGC policy (DCELLS, 2008a) but also links closely with the ideas of authors such as Tinney (2010); Sterling (2001) and Agenda 21 whom highlight that ESD is not 'about other people out there' but is about learners acknowledging and taking responsibility for their own impacts on the world.

Davis (1998), Sterling (2001) and Hicks and Holden (2007) also highlight the futures perspective of education for sustainability which also forms part of the ESDGC agenda in Wales. Several teacher and trainee participants eluded to this in their own answers, although not all participants referred to the future explicitly despite discussing the need for a sustainable planet which implies a long term perspective (see Table 3.8).

It was apparent in the answers of the teacher trainees that raising awareness and understanding was an important aspect of ESDGC for some participants (see Table 3.9) however as the work of several authors highlighting ESD also has a focus on values and promoting positive behaviours where the aim is to change society and make it more sustainable (Davies et al, 2009; Smyth, 2006; Stone and Barlow, 2005; Fien, 2004; Foster,

2001; Sterling, 2001; Fien and Tilbury, 1998; Huckle and Sterling, 1996; Sauve, 1996; Symons, 1996). For all the school teachers there was evidence that ESDGC was seen from the 'for' perspective and the idea that ESDGC should promote care and respect for the world. Several teacher trainees also discussed the role of ESDGC in promoting positive benefits for the environment and citizenship (see Table 3.10) and highlighted the environmental and societal aspects of ESDGC.

However it is not possible from the information gathered here to ascertain if the aspects of change indicated by participants involve the critical pedagogy or revolutionary change linked to the views of authors such as Fien (2004) or Sterling (2001) where learners are given the opportunity to question the norms of society and to think creatively and critically about their world and their relationship to it. However one participant did note that he / she has a personal responsibility to promote this agenda (see Table 3.11).

Closer analysis of the information gathered from teacher trainees however suggested that for several participants the focus in terms of ESDGC was in 'greening' and environmental management issues, especially waste management, pollution and energy use, this sometimes being equated with good citizenship explicitly (see Table 3.12) and provides some support for authors such as Symons (1996) and ESTYN baseline findings (Estyn, 2006a) that this area may be perceived as an environmental issue and not make the necessary links between nature of environment, economy and society necessary to develop a deep understanding of SD.

Expert Participant 7 highlighted that when working with teachers he / she was concerned that when discussing ESDGC waste and recycling was on the top of their agenda and that they were not aware of the bigger issues (OE P07 Q 07). The teacher trainee tutor (TTT p10 Q1 07) also suggested that students find understanding recycling, pollution and composting easy but do not see the big picture, suggesting that there is so little time during training to go into the big picture and thus the coverage can be superficial. Expert 5 did however place an emphasis on environmental management suggesting that such simple habits are a good staring off point with young children, a sentiment also shared by Expert Participant 3 (see Table 3.13).

There is a suggestion therefore that in early childhood practical environmental management offers hands on activities pertinent to early childhood learning and may be a way of laying

down good behaviours which can be built on and connected to wider issues in the future also highlighted by authors such as (Prince, 2010; Davies, 2005; Summers et al., 2003). Such 'procedural knowledge' of how to do things can also be an important aspect of encouraging people to participate in sustainable practice (Frisk and Larson, 2011). However to promote the transformative and holistic nature of ESD (Frisk and Larson, 2011; Sterling, 2011) authors also underline the need for educators to engage with the diverse and complex aspects of ESD, discussed in section 3.2.2.

Some teacher trainees and teachers also highlighted the environment as a key component of ESDGC highlighting that ESDGC compromises protecting and conserving nature and being aware of environmental change (see Table 3.14). Surprisingly only two of the trainees and six of the teachers named climate change within their answers (although this is a key driver for Sustainable Development policy and thus ESDGC (WAG, 2009a), however this may only suggest that climate change was part of what several referred to as environmental change or environmental issues.

For some participants therefore it could be interpreted that ESDGC has a strong environmental / ecology focus. Authors highlight that there is a danger that concentrating on environmental issues in isolation as it creates a false view of the world (Elliott and Davis, 2009; Sterling, 2001; Symons, 1996) where nature and humans are viewed as separate or dichotomous of each other (Elliott and Davis, 2009) or that humans are inherently bad and nature good (Symons, 1996) The teachers and some trainees questioned did however provide a more holistic view of ESDGC reflecting the seven themes laid down in ESDGC policy in Wales (DCELLS, 2008a) (Table 3.15).

In the past environmental education practice was criticized for not connecting environment with social, political and economic issues effectively (Elliott and Davies, 2009) despite the Tblisi Convention (Chapter 1, 1.2.4) highlighting the interconnectedness, and may go some way to explain why Wales has incorporated both GC and ESD as a means to highlight further the holistic nature of this field. It is however worth noting that some participants did seem to view the ESD component separate from the GC for example 'providing activities that enable children to learn to become global citizenship and how to look after the environment' (Teacher Trainee Participant 46) or 'Providing pupils within school information about sustaining the way in which we live and how to become a global citizen' (Teacher Trainee

Participant 19). ESD authors reviewed in Chapter 1 highlight the importance that the interconnectedness of social, environmental and economic issues as well as human rights and wellbeing are made clear and it may be that support is required to show some educators how to make these links. It is however worth noting authors such as Louv (2008) and Palmer (2006) have indicated children's detachment from nature can have detrimental impacts on children's wellbeing. Wilson (1997) and Chawla (1998) also make a case for significant life experiences with nature which lead to environmental activism and Vaealiki and Mackey (2008) highlighted that being with nature can promote empathy for other people as well as nature. Expert 7 (OE P07 Q6 92) suggested that 'we have a lost generation' and that children 'go shopping rather than building dens' and see the 'outdoors as dirty and bad' In the context of young children in the Western world who increasingly live in an indoor world dominated by consumerism (see Davies, 1998 Huckle, 2012) teachers who overly stress environmental aspects of ESDGC may still support the overall agenda where schools may be children's only discussion and experience of this topic area (see section 3.2.2 for links to outdoor learning).

All the teachers interviewed highlighted that ESDGC was an important agenda within their school life (see Table 3.13), 15 noting this explicitly and one noting it implicitly where 'children need to be aware of global issues and it is important that they recognize their rights and responsibilities'. (Teacher Trainee Participant 6, TT, P06, Q12 91). However amongst the trainees there was not consensus. Despite most indicating it was an important or relatively important issue (39 participants) or indicating its positive aspects (seven participants) (see Table 3.16) some highlighted that it was not important (three participants) or that it was only used if needed (two participants) (see Table 3.17) and suggests as do Summers, Corney and Childs (2003) the pressures teachers face of integrating ESD into an overcrowded curriculum and that core subjects may be seen as taking priority over this area of work for a minority of those questioned. It may also highlight that those who answered the teachers' questionnaires were self-selecting and already positive about this agenda. The difficulties of including everyone in a value based agenda counter to the wider cultural context has been discussed by Huckle (2012) and there may be a risk of ESDGC being seen as a tick box (Table 3.17) or extra add on within the curriculum (Summers, Corney and Childs, 2003) for some participants.

Huckle (2012), Fien (2004) and Sterling (2001) would argue that education itself must be sustainable and that attaching ESD within an already existing non sustainable curriculum

cannot promote the changes necessary to support human existence on the planet (Huckle, 2012), with these authors highlighting ESD as part of the critical pedagogy which is transformative and encourages social change.

ESDGC is now a statutory inspected part of the curriculum in Wales and thus despite a minority of students feeling the agenda is not important it is likely to be a focus of education in Wales in the long term, especially in the light of current sustainable development legislation (WAG, 2013) and growing global problems (United Nations Non-Government Liaison Service, 2012)

3.2.2 ESDGC philosophy, pedagogy and delivery

It was apparent from some of the participants' feedback that ESDGC was considered as important due to curriculum requirements or that it detracted from other important education areas such as literacy (see Table 3.16). However there is a consensus amongst ESD writers that this area is not a subject or add on dealing with environmental or social issues per se but a pedagogy (see Chapter 1, section 1.2) and philosophy based on holism, critical and creative thinking, problem solving, active participation, reflection, whole setting approach, interdisciplinary learning and consideration of complex issues . It should also be student led and spread beyond the school or setting gates (Bennell and Norcliffe, 2009; Davis et al. 2009; Hagglund and Parmling-Samulesson, 2009; Sterling, 2001).

Some of the teacher trainees and teachers did demonstrate an awareness of the pedagogical implications of ESDGC in terms of active learning, making decisions and student led discovery (see Table 3.18) and highlights that for some there was awareness that ESDGC is as much about the method of learning as about what is learnt. The teacher trainee tutor (TTT P10) did however acknowledge that aspects such as decisions and choices within the curriculum linked to ESDGC were what students often found most difficult to incorporate into their work.

The experts (Table 3.19) highlighted that for working within the ESDGC agenda with a focus on young children active discovery learning was an important element of what they did however one participant suggested that they intended to increase learner led enquiries as in the past activities 'while hands on and participative were not actually inquiry and learner led' (Expert Participant 1) Several authors would agree that ESD works best when the learner

leads the problem solving and discovery (Davis, 2010; Sterling, 2001; Fien, 2004) and that hands on activities are not necessarily facilitating problem solving and creative thinking if overly structured (Bruce, 2011). Edwards and Mackenzie, (2011) however highlight (see Chapter 1) some of the arguments related to linking child centred play based approaches with sustainability issues and the important role of the adult in supporting learning.

Interestingly several of the experts comments highlighted the need for ESDGC to be delivered practically with young children highlighting the views of authors such as Tinney (2010), Davis (1998; 2010) that ESD and early childhood pedagogy share a complimentary philosophy. However there were also concerns or comments raised that the issues discussed within ESDGC may be too complicated for young children by experts, teachers and trainees highlighting the debate in the literature regarding young children's capability to engage with complicated and sensitive issues (Elliott and Davies, 2009). However for the organization experts this could be overcome by appropriate learning environments designed for young children's context (see Table 3.21).

Expert Participant 7 also highlights that it is important to get young children under seven to feel it is worth caring (such as for friends or animals in woodland) as care is the basis for ESDGC and starts the children's discussion of empathy and respect which is key to Sustainable Development thinking (Sterling, 2001, Symons, 1996). Research has also demonstrated that global and environmental issues are of concern to young children but that these are expressed in ways pertinent to the individual child's socio cultural context (Engdahl and Rabusicova, 2010; Pramling-Samulesson and Kaga, 2008; Palmer and Suggate, 2004).

However the acknowledgment that ESDGC issues are complex need not be viewed negatively, as several authors in the field highlight that this is a subject which is dealing with some of the major problems facing society and will thus generate more questions than answers (Elliott and Davis, 2009; Symons, 1996). Although some teachers may find this an uncomfortable position when they would hope to be perceived as experts (Symons, 1996), Sterling (2001) states learners have their own context and experiences and should not be viewed as 'empty vessels' to fill up with an educators choice of abstract information. In this context, Edwards and Mackenzie (2011) highlight the importance of socio-constructivist viewpoints and the need to support young children's engagement with sustainability issues and Elliot and Davis (2009) caution against assuming that children developmentally-defined

in line with Piagetian ideas and can only grasp observable or first-hand experiences. The trainees and teachers noted that PSE and Circle Time as well as Assemblies are part of ESDGC learning and suggest that this provides opportunities for debates and discussion although one expert stated 'that a badly managed 'Circle Time' (i.e. too teacher-led) will not energise and motivate young children to bring their ideas to the group' (Organisational Expert Participant 3) Such comments underlining the importance of the child's voice and child led learning, discussed in Chapter 1, and the need for reflective practitioners willing to develop their practice (Gayford, 2003; Prince, 2010).

Research however also highlights educators' misconceptions or misinformation regarding themes linked to ESD (Spriopoulou et al., 2007) and trainees and teachers in this data highlight a lack of knowledge within ESDGC. It is therefore important that students do not allow complicated issues to be delivered erroneously or shy away from sensitive or complex matters. It is interesting that within the teacher trainee feedback the examples given of how ESDGC could be promoted highlights the importance of visits and guest lectures (with eight participants referring to one of these method) as well as teachers highlighting partnerships and links to different organizations (Table 3.22) suggesting that expertise is sought from partners and experts beyond the school. Literature (Stone and Barlow, 2009; Davis, 2005) and the experts highlight how important such partnership approaches are to ESD delivery. Expert Participant 1 suggests that such events can be supported when there is '…a chance to discuss with providers. Time and skills to think of and develop ESDGC links to any programme pupils have or are about to do at centre'. Expert 3 also highlights the need for good practice to be shared when discussing the work of the organisation's own officers sating that 'Workers in early years settings need to know which ESDGC providers can deliver appropriate support to enhance the curriculum, by giving 'added value' to planned topics. This support may come from Local Authority specialists, such as Advisory Teachers, or outside agencies' and that 'It would be good to make these findings available (websites, YouTube, INSET etc.) so that more schools and playgroups (especially the independent sector) can learn about how to put such practice and ideas in to place'.

In terms of early childhood and ESDGC the experts provided a range of viewpoints with some highlighting this is an area well suited to young children (Table 3.23) and if approached appropriately in a hands on way is most successful, others however noting that they tend to concentrate on older children (Expert Participants 2 and 8) one expert (Participant 8) noting

that this was a result of funding priorities and responding to the ESTYN baseline report noting that secondary education is less informed and effective at delivering ESDGC. However when the websites that organisation participant 2 and 8 represented were viewed there was evidence of resources targeted at children in the Foundation Phase age group and as noted by Expert Participant 8, he / she knew that teachers themselves adapted their resources to the appropriate age and level. Some teacher trainees noted that it was a challenge to cover ESDGC themes with children in an interesting way (two participants) however feedback from some of the expert group note to the contrary (see Table 3.23) and thus it is pertinent to suggest that such organizations ideas and resources are publicized more widely for educators to utilize. Web assessment (see Table 3.33) highlights some of the materials available to promote ESDGC would provide several resources that could be the basis for stimulating early childhood ESDGC sessions.

The quantitative data highlighted (see section 3.1.2) that young children under seven years old are not always included on school forum, despite several participants highlighting their important role in ESDGC issues and responsibilities (Table 3.24). The child's voice and rights is at the heart of early childhood philosophy (Clarke and Moss, 2011; UN Convention on Rights of the Child 1989) and equality democracy and rights are important aspects of ESDGC (Bennell and Northcliffe, 2009; DCELLS, 2008a) early childhood pedagogy (Davis, 2010) the Foundation Phase (DCELLS, 2008c) as well as WAG (2009b) guidance regarding effective school councils, and thus the fact young children are not represented in one of the decision making tools of the school undermine the whole school ethos. However some teaches did note the importance of 'rhaerdu' and that all classes input ideas into decision making forum and others noted young children take special personal responsibility for a section of the school grounds in terms of gardening or keeping it tidy. Some experts provide views on how children could be included on committees at a younger age, suggesting that the meeting may need to be adapted to include younger children or that the participation of young members involves a different approach completely (see Table 3.25). Expert 4 also highlights that age is not necessarily the important factor but a child's individual development and ideas (see Table 3.25).

Sterling (2001) discusses 'fuzzy borders' and that the school should be reaching out and an integral part of the community. Teachers and trainees noted the importance of local community links (see Table 3.26) with interesting examples of parental and community

involvement (see Table 3.26) with others suggesting this could be developed further. The Expert Participant 3 noted that good ESDGC practice would mean that 'hopefully the message of sustainability and global citizenship will also be taken up by parents/guardians' and thus reinforced the literature that ESD should not be seen in isolation of the wider community and something children only do in schools/ settings (Davis, 2010; Davis, 2005; Huckle and Sterling, 1996).

In terms of whole school approaches Sterling (2001) suggests that ESD cannot be approached in a vacuum or in a 'do as I say not as I do' way and Edwards and Mackenzie (2011) highlight how young children model their practitioners. Expert 9 and 7 highlight the need for positive role models and that teachers' behaviour will influence the children they teach (Table 3.27).

Although the data does not allow us to ascertain the behaviour of teachers and trainees themselves the minority of trainees who did not see this as an important area or others who noted it was a tick box exercise (Table 3.16) may find it difficult to instil a strong whole school approach. Teachers and experts noted that ESDGC required consistent messages, and positive leadership (see Table 3.28) and this was also significant within ESDGC documentation with a key area being leadership and commitment) as well as by authors such as Sterling (2001) who note that leaders must support and understand the agenda if it is to succeed. It is worth speculating that teacher trainees perceptions of having not observed or seen ESDGC or that it is not important may have visited settings where ESDGC was not communicated effectively or where it was not reinforced throughout the school.

Outdoor learning, nature and growing food was a strong component of the teachers responses (see Table 3.29) and literature linked to early childhood ESD does make close links to the importance of learning from nature being aware of life cycles, hands on discovery outdoors, growing food and biodiversity (Prince, 2010; Davis, 2010; Elliott and Davis, 2009; Hagglund and Pramling-Samuelsson, 2009). As noted by Expert Participant 4 when referring to the Foundation Phase and outdoor learning 'FP mentions outdoor learning about 17 times in the original document which is a huge improvement on the old desirable outcomes which didn't mention the importance of natural landscapes and elements in children's learning and development. This demonstrates that the FP offers plenty of opportunities' and reflects the view of ESD and early childhood authors that sustainability and outdoor learning are

particularly well suited. Expert Participant 4 also noted that 'Only by being in nature do children and young people learn to understand and care about it', other participants also highlighting the benefits of outdoor leaning for young children and ESDGC (see Table 3.30).

It is worth noting that the teacher trainees made very little explicit mention of outdoor learning, with some mentioning Forest School and other discussing school grounds. It may well be that the researcher is misinterpreting data and that when trainees discuss environment or school trips that inherent within this is the notion of outdoor learning. However Expert 7 noted that some teachers and trainees find outdoor work difficult and was concerned that one teacher came for an outdoor session with inappropriate clothes and foot wear and 'came to make mud pies wearing false nails'. Although anecdotal, the researcher's own experience teaching outdoor learning modules confirms concerns that being outdoors in nature is not a regular or familiar experience for some young people and also reflects the concerns of authors such as Louv (2008) regarding 'nature deficiency'. Despite these concerns the school teachers responses, alongside the experts' remarks on their outdoor work, highlight the valuable source of training and experience they could provide trainee and new teachers to improve their confidence to go outdoors and connect with nature.

Despite the natural environment being important to both ESD and early childhood philosophy the way both fields view work in nature may be different (Tinney, 2010; Elliott and Davis, 2009. ESDGC focuses on valuing nature, understanding and conserving habitats and species and using resources responsibly (DCELLS, 2008a; 2008b), while early childhood has been more interested in the role of the outdoors in the child's wellbeing and development (Elliott and Davis, 2009). Therefore for ESD being in nature is not and end in itself, it is with a view to understand the interconnectedness of humans and nature and understand our responsibility to use resources responsibly (Elliot and Davis, 2009; Davis, 1998) Davis (2010) suggests that for early childhood such wider issues cannot be ignored and Elliot and Davis (2009) that early childhood education for sustainability must incorporate a 'biocentric' view of the world where nature is valued beyond human benefits alone. As noted by Expert Participant 4 using the outdoors effectively 'is dependent on the educator understanding that natural learning isn't about taking the blocks outside but about engaging in nature and using natural resources in a sustainable way.' Expert 7 also highlighted the 'Attenborough effect' where most only experience natural world second hand and have 'no concept of what is around them and 'don't think hedgehog important. Only think lions important. David

Attenborough is great but at expense of local wildlife'. Thus it interesting to note that organizations that promote local use of natural areas and children's regular use of the outdoors such as is part of the Forest School ethos are supporting the ethos of Agenda 21 noted by School Teacher Participant 16, where children can 'Think globally, act locally. Knowing that small steps on a local level can have a huge impact on global sustainability and citizenship'.

The growing of their own food and fair trade issues discussed by several teachers also highlight the possible links that outdoor learning can make to wider global issues and citizenship (Table 3.31). For example during Ecoschool inspections (personal observation) the dilemma regarding buying local food or fair trade food is given as a means for children to debate and consider the pros and cons of both approaches for various aspects of SD. Only two trainees discussed fair trade and gardening and food production was not prominent within responses, suggesting again an area that organizations and experienced teachers can offer valuable support.

3.2.3 Challenges and Support required

In the final set of themes it is apparent that although participants were on the whole positive about the ESDGC agenda, there were some challenges. For the teacher trainees the key challenges identified were: lack of resources or information; that ESDGC is hard to integrate or link into teaching; limits on time and opportunities to include ESDGC; identifying when ESDGC is being covered; keeping children interested; that other subjects are more important than ESDGC; that ESDGC is a complex / hard to understand issue (see Table 3.32). Teachers also highlighted similar challenges (see Table 3.32) and thus these are areas where participants may benefit from support.

The challenge of limited information and keeping children interested could be supported by practitioners accessing the expert knowledge of external organisations. The web based analysis identified a range of materials (see Table 3.33) which could support a diverse range of ESDGC issues and would support the interesting and hands on discovery learning relevant to early childhood and ESDGC (Davis, 2010). Experts questioned also provided examples of how they can support teachers to deliver ESDGC, highlighting the importance of sharing ideas (see Table 3.34 and 3.23).

However the concerns of teachers and teacher trainees regarding time constraints and identifying and integrating ESDGC into the curriculum (Table 3.32) suggest that teacher training courses and INSET is required to promote the cross curricular aspects of ESDGC and would support teachers to identify ESDGC within their everyday work and not make it something special or unusual, a sentiment also highlighted by Expert Participant 7 'Making it ordinary, becomes acceptable, and they will think it is obvious'. Expert 3 states 'In one sense, the cross-cutting nature of ESDGC means that many activities in the early years setting have some connection to important ESD&GC principles. However, we need to ensure that teachers and practitioners are able to highlight those connections, to give them weight and context.' School Teacher Participant 1 noted that ESDGC 'Is not a lesson but part of the schools principles. Part of any good primary school.' (Original 'Dim yn wers. Rhan o egwyddor yr ysgol. Yn rhan o unrhyw ysgol gynradd dda'). Sharing the expertise of experienced teachers and ESDGC professionals with new staff is therefore important. School Teacher Participant 9 stated that 'Newly Qualified teachers mentored to work towards the Welsh QTS standards related to ESDGC' and this researcher suggests mentoring should include exposure to the significant expertise in this field.

Some of the teacher trainees highlighted that this subject area could be challenging and complex for younger children (see Table 3.20), while the experts acknowledged that they would value training and shadowing early years experts in order to improve their delivery of ESDGC with younger children and within the Foundation Phase (see Table 3.35). Partnerships such as this would also help develop specific lessons plans and ideas for how ESDGC can be undertaken during areas of learning beyond understanding and knowledge of the world. As Expert Participant 7 states of teachers she has been involved with in training events 'They do not necessarily make the links themselves, but see the links we make' and Expert Participant 9 noting that this should be' a cross cutting theme' and that the organisation plans to create materials highlighting how ESDGC can fit into different areas such as numeracy and literacy, starting from the 'point of view of the subject' and making it easier to link to a specific subjects. They can then 'tailor' specific resources to share with teachers, and as noted by Expert Participant 4 'Developing educators understanding of the wider links between ESDGC and the curriculum.'

Expert Participant 7 suggests ESDGC issues can only be discussed effectively when people have a good grounding in it, including its ethos and principles and thus for ESDGC to be

successful teacher training courses should include ‘an ESDGC module underpinning their work’. Expert Participant 6 also noting ‘Challenge is that younger pupils – more difficult to engage and teachers have find ways of delivering topics. Perhaps early learning teachers should be taught at teachers training course how to overcome this challenge.’

The Teacher Trainee Tutor noted that development in the academic year 2012 / 2013 had included ESDGC across the three years of the degree whereas in the past it was not introduced until year two. The ESDGC component on the course is now being included in first year modules linked to cross-curricular themes of ESDGC, science and the wider world including the Foundation Phase, a module linked to outdoor learning and learning beyond the classroom, a second year module linked to inquiry based learning and in year 3 a module with links to creativity and understanding and knowledge of the world. The Teacher Trainee Tutor thought these changes to the curriculum would improve ESDGC understanding especially as students will already have a better understanding of wellbeing and citizenship from the Foundation Phase ethos and how these link to ESDGC. The tutor did however acknowledge (reflecting Estyn, 2006a) that there remains a tendency to link ESDGC specifically to geography and science based subjects and that students do not see the wider aspects of global citizenship and aspects of wealth and poverty where ‘dim deall weithiau bod en fwy na codi arian’ (*do not understand sometimes it is more that collecting money*). A view also highlighted by School Teacher Participant 16 ‘Global citizenship is more than just supporting charities that work in developing countries’. Authors such as Corney (2006) and Corney and Reid (2006) have noted the importance of including ESD within teacher training programmes with Bennell (2010) providing an in-depth review of the development of ESDGC onto initial teacher training courses in Wales, and it will be interesting to observe in the future whether the earlier introduction of ESDGC into the teacher training curriculum noted here benefits students confidence within this area.

As noted by School Teacher Participant 16 ‘Sometimes, especially with sustainable development, you are trying to instil an attitude that is not compatible with home priorities.’ It can be difficult therefore to make the jump from raising awareness and learning to measurable changes in behaviour. ESD authors as well as programmes such as Ecoschools note the importance of monitoring the effectiveness of such initiatives in reducing the use of resources or improving wellbeing (human and environment) noting the importance of

research to measure outcomes. Research can also be important in making the case for the wider benefits of ESDGC for children's education (Bennell, 2011).

Experts made the case for the benefits of research evidence (see Table 3.36) and being able to know if an activity is successful. In the Welsh context further research linked to ESDGC could help deliver this agenda and monitor it impacts as a transformative agenda for children and wider society.

Chapter 4 Conclusion and Recommendations

4.1 Conclusion

Chapters 1 and 3 demonstrate that there are close links between ESD and early childhood education both internationally and within a Welsh context. There are also numerous close ties between the principles of ESDGC and the Foundation Phase in Wales and this thesis would support the views of Bennell and Norcliffe (2009) that the Foundation Phase provides many opportunities to develop ESDGC. The integration of ESDGC as a transformative agenda in Wales relies in some parts on the understanding and interpretation of ESDGC by educators involved in the Foundation Phase and they will have an important role in influencing young children's sustainable behaviour and values. Teachers in this research highlighted a strong awareness of ESDGC and suggested that this was an important part of school life, indicating an important role for young children. However despite some discussion of a whole school ethos several participants indicated that young children (younger than year 2) were not part of a School Council membership highlighting that they may not have a strong voice in school decision making systems which is part of both ESD's principles and Foundation Phase pedagogy. Some experts suggested other mechanisms for including young children that were not focused on a formal meeting structure and noted the importance of not underestimating young children's knowledge, reflecting the views of author such as Elliott and Davies (2009).

The majority of teacher trainees suggested that they were aware of ESDGC with several indicating the holistic nature of the agenda incorporating social, economic and environmental issues. However some participants did tend to focus on the environmental aspects of ESDGC (reflecting the results of Estyn (2006a) that the environmental issues predominate over the global citizenship issues) and although many highlighted its cross curricular focus others suggested it was still taught within the Geography/ Understanding of the World subject areas. A minority of trainees suggested that ESDGC was not important or was a 'tick box exercise' indicating as does Bennell (2011) that ESDGC cannot be transformative in such a context. However the Teacher Trainee Tutor highlighted that from 2012/ 2013 onwards that ESDGC would be integrated in to the teacher training degree from year one onwards across several different modules and thus as Bennell (2011) acknowledges the integration of ESDGC into teacher training courses is a long term process.

The organisational experts indicated that young children were an important aspect of ESDGC and that hands on / discovery led learning suited this agenda well, providing interesting ideas for engaging young children with ESDGC themes. Several participants acknowledged the important role of the outdoors as well as the need to share good practice. There was also an acknowledgment of the importance of partnership working and ESDGC organisations being able to learn from early childhood practitioners to ensure the best outcomes. It was clear that these organisations offered significant support and information for teachers but that teachers may also be able to support these organisations in tailoring material and experiences for younger children. The web based material analysed further highlights the important information available for teachers to explore ESDGC with young children, however there was a tendency for several originations to target the older primary and secondary sector. It may be relevant therefore to suggest that more material specifically targeted at young children in the Foundation Phase would be valuable. This is particularly pertinent as many teacher trainees and teachers highlighted their desire to have more information and resources to support their ESDGC work.

Limited time, finding ways of linking ESDGC into lessons and the curriculum, issues being too complex or sensitive were highlighted as other challenges when delivering ESDGC and partnership working between organisations and teachers to develop lesson plans specific to ESDGC was also noted as important by some participants. A lack of confidence and experience of outdoor learning was also discussed by some experts and teachers and again suggest the benefits of working together to support this area of work. As Bennell and Norcliffe (2009) note environmental and developmental / global citizenship organisations have been instrumental in developing ESDGC in Wales and this thesis highlights their important role in continuing this development.

4.2 Recommendations from research

- Develop awareness amongst teachers and trainees of resources and information already available for ESDGC delivery. Create more Welsh medium resources and resources to support teachers to deliver ESDGC within the school.
- Provide support and training on how to integrate ESDGC into the school and Foundation Phase curriculum and consider the need to develop Foundation Phase/ ESDGC specific resources.

- Develop awareness and support amongst practitioners and trainees of how to link ESDGC into lessons beyond Geography, Science and Understanding of the World.
- Develop opportunities for experts teachers and trainees to come together and share good practice in terms of ESDGC but also early childhood pedagogy. Develop partnerships for ESDGC experts to gain experience in terms of shadowing teachers or learning about early childhood teaching.
- Encourage teachers, trainees and organisations to engage young children with ESDGC and to ensure they are active participants through School Council and other democratic processes.
- Consider and develop young children's and educators experiences of dealing with complex, abstract or sensitive issues of ESDGC at an appropriate level.
- Continue to develop strong whole school ethos and strong parent and community links which underpin Foundation Phase and ESDGC.

4.3 Limitations and future research

As an exploratory study reliant on open ended questionnaire / structured interviews this research has only been able to collect superficial opinions and views. The researcher would like to develop this initial study with more detailed interviews with teacher trainees and early year teachers to pinpoint further their interpretation of ESDGC and the benefits and challenges they face from integrating it into their work. The organisation experts questioned have highlighted interesting issues to pursue such as shadowing early years' practitioners, sharing good practice and making early childhood practitioners aware of bigger issues than recycling and waste. The researcher would like to also pursue these ideas, and a focus group of experts and teachers/ trainees may offer a valuable research opportunity to gauge ideas and exchange good practice, with a view to utilise the results to create joint collaborations between schools and organisations outside, their normal interactions. As noted in the recommendations this could be the start off point for a sharing of good practice conference or group discussion similar to those outlined in Gayford (2003).

This research is interpretive and thus it is worth noting that the data is viewed from the researcher's paradigm and more detailed interviews or focus groups in the future would allow the researcher to explore themes in more depth and to evaluate if the findings in this thesis are representative.

Chapter 5

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Appendix 8

Chapter 3

Tables of data

Table 3.1

Table showing teacher qualification date

Date	Number (Percentage)
1977	1 (6.3%)
1979	1 (6.3%)
1986	1 (6.3%)
1989	2 (12.5%)
1990	1 (6.3%)
1991	1 (6.3%)
1992	1 (6.3%)
1994	1 (6.3%)
1995	1 (6.3%)
1996	1 (6.3%)
1998	1 (6.3%)
2001	1 (6.3 %)
2004	3 (18.8%)

Table 3.2

Table showing the teachers specialism subject

Specialism	**Number (Percentage)**
None indicated	2 (12.5%)
Geography	4 (12.5%)
Science	1 (6.3%)
Science and Maths	2 (12.5%)
Sociology	2 (12.5%)
Welsh	2 (12.5%)
Welsh and Art	1 (6.3%)
Welsh and History	1 (6.3%)
Nursing	1 (6.3%)
Religion	1 (6.3%)

Table 3.3

Table showing participants opinions of how they had studied ESDGC during their degree

How ESDGC had been studied	**Number (Percentage)**
None indicated	17 (28.8%)
Geography lectures	4 (23.7%)
Understanding and Knowledge of the World lecture	5 (8.5%)
In Lectures	16 (27.1%)
By Visitors and Guests	3 (5.1%)
Cross curricular lectures	2 (12.5%)
Associated with specific lectures / staff	1 (1.7%)
During teaching practice	1 (1.7%)

Table 3.4

Table showing participants opinions of how they had observed or delivered ESDGC during teaching practice

How ESDGC had been studied	**Number (Percentage)**
None indicated	19 (32.2%)
Ecoschools or environmental management	25 (42.4%)
In lesson plans	8 (13.6%)
Fairtrade	2 (3.4%)
Develop children's skills	1 (1.7)
In school assembly	5 (1.7%)
Tick box exercise	1 (1.7%)
Global learning empathizing with another country	1 (1.7%)
Guest visits	1 (1.7%)
Pedagogy links	1 (1.7%)
Rarely used	1 (1.7%)

Table 3.5 Themes identified from thematic analysis of data

Raising awareness and having a better understanding of world issues and the impacts people have on the planet and each other.
Responsibility, looking after and caring for the world /planet
Greening and environmental management systems
Protecting and conserving the environment and nature
Pedagogy and delivery of ESDGC within learning environments
The value and importance of engaging ESDGC
ESDGC challenges
Outdoor learning
Wider Education for Sustainability philosophy
Sharing good practice and linking to other organizations
School organization
Research evidence and measurable outcomes
Teacher training and training requirements
Teaching at appropriate level

Table 3.6 Grouping of themes to facilitate discussion

Interpreting and valuing ESDGC	• Raising awareness and having a better understanding of world issues and the impacts people have on the planet and each other. • Responsibility, looking after and caring for the world /planet • Greening and environmental management systems • Protecting and conserving the environment and nature • The value and importance of engaging ESDGC
ESDGC philosophy, pedagogy and delivery	• Pedagogy and delivery of ESDGC within learning environments • Wider Education for Sustainability philosophy • Teaching at appropriate level • School organization • Outdoor learning
Challenges and Support required	• ESDGC challenges • Sharing good practice and linking to other organizations • Teacher training and training requirements • Research evidence and measurable outcomes

Table 3.7 Participant Feedback

Teacher Trainee Participant 8 (TT, P08, Q3, 3; TT, P8, Q3, 2) 'ESDGC is when children learn about the world, how it used to be, how it has changed and what the children do and how it affects the world'
Teacher Trainee Participant 48 (TT, P48, Q3, 8; TT, P48, Q3, 11; TT, P48, Q3, 3) 'Understanding of the world around us, to understand they are a key part in life and can change things e.g. pollution.'
Teacher Trainee Participant 15 (TT P15, Q3, 4; TT, P15, Q3 , 12; TT P15, Q3, 18) 'Awareness of other cultures. Link between economy, culture and society. Understanding changes in the environment.'
School Teacher Participant 4 (ST, P04, Q7, 4; ST. P04, Q7, 18) 'Links between society, economy and the environment and between our own lives and those people throughout the world'

Table 3.8 Participant Feedback

Teacher Trainee Participant 42 (TT, P42, Q3, 12; TT, P43, Q3, 20) 'Protecting the environment for a sustainable future and encouraging the younger generations to carry on the process.'
Teacher Trainee Participant 49 (TT, P49, Q9, 3; TT P49, Q9, 3; TT, P44, Q9, 20) 'Children become informed improving the citizens of future generations'
Teacher Trainee Participant (TT, P44, Q7, 35; TT, P44, Q7, 20) 'Very important shaping future citizens of the world.'
School Teacher Participant 1 (ST, P01, Q7, 20) 'Gadael y byd i'r bobl sydd i ddod' (*Leave the world to the people who are yet to come*)
School Teacher Participant 7 (ST, P07, Q07, 20) 'Education for the wider and world issues, care for the environment and understanding of our impact upon it now and in the future'
School Teacher Participant (ST, P10, Q8, 20) 'To share the need and responsibility for the future of the planet and world as we know it for generations to come'

Table 3.9 Participant Feedback

Teacher Trainee Participant 10 (TT, P10, Q9, 3) 'It raises awareness of the world'
Teacher Trainee Participant 17 (TT P17 Q9 3) 'Children feel more aware of the impact they have on the world'
Teacher Trainee Participant (TT, P03, Q9, 3) 'Greater awareness of issues that affect children and citizens in the wider world'
Teacher Trainee Participant 58 (TT P58, Q9 3) 'Mwy o wybodaeth a dealltwriaeth gyda'r plant ynglyn a beth sy'n digwydd yn y byd' (*More information and understanding with children of what is happening in the world*)

Table 3.10 Participant Feedback

School Teacher Participant 10 (ST P10 Q8 9; ST P10 Q8 3; ST P10 Q8 11)
'For children to value the life that exists on earth and to be aware of actions which could bring harm and a negative change within the environment / community they live as well as the global concept. To share with pupils the plight of other children and give pupils time to think and consider what they could do to create a change– a change for life which is sound and respects all forms of life and the environment around the globe.'

Teacher Trainee Participant 46 (TT, P46, Q9, 9)
'Children know how to care for world.'

Teacher Trainee Participant 9 (TT, P09, Q9, 3)
'Children are globally aware and can change their actions for the greater good'

Teacher Trainee Participant 1 (TT, P01, Q9, 9)
'Children will learn about their world and respect and change it'

Teacher Trainee Participant 41 (TT, P41, Q3, 9)
'Caring for the planet. Working together to make a better world'

Teacher Trainee Participant 45 (TT, P45, Q3, 9)
Providing activities to develop children's knowledge of the world and natural environment. Enabling them to develop citizenship and discover what affects the environment and how we can prevent it / minimize the risks'

Teacher Trainee Participant 47 (TT, P47 Q3, 9)
'To me the term ESDGC means the implementation of educating children about the environment throughout all areas of learning in the Foundation. This should include highlighting to them how they have an impact on the world and to educate them about how we should look after the world in which we live in order for them to grow up to become sustainable and respectable citizens'

School Teacher Participant 3 (ST, P03, Q7, 9)
'Promoting ideas and ways that we can make our whole world a greener cleaner, healthier place to be. Involving as many people in our education. Encouraging people to live in a way that is as eco friendly as it can be. Making people aware that choices they make has an impact on the world.'

School Teacher Participant 3 (ST P03, Q7, 9)
' It is the teaching and learning of the impact of man on the planet and the way that we can influence a better outcome for all world citizens if we are mindful of the options that we have to make a better future for all. It is connecting and reacting globally to the challenges of living in the 21st century'

Table 3.11 Participant Feedback

Teacher Trainee Participant 9 (TT P09, Q3, 9)
‘As a teacher I feel it my responsibility to ensure that children are aware of the world around us, their place in it and the problems we can take to help our surroundings such as caring for others and recycling.’

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Table 3.12 Participant Feedback

TT, P43, Q03, 7; TT, P43 Q03, 9; TT P43, Q03, 14; TT, P43, Q03 54
'Caring for the planet, Recycling. Working together to look after our planet. Ecoschools. Litter picking.'
TT P07, Q03, 7; TT, P07,Q03,12; TT P43, Q03, 14, TT P43, Q07, 05
'Looking after the environment. Recycling. Being a good citizen e.g. putting rubbish in the bin.'
TT P21 Q03, 7 (this participant indicated he/she had not studied ESDGC)
'Teaching children about recycling and sustainable resources.'
TT, P18, Q03, 12; TT P18, Q03 05; TT, P18, Q03, 09
'Providing activities and information in school about being global citizens and looking after the planet. Some topics include recycling, saving energy etc.'
Teacher Trainee 29 (TT, P29, Q8, 7; TT, P29, Q8, 22)
'Recycling, using recycled materials, turning lights off'
Teacher Trainee 41 (TT, P41, Q4, 7; TT, P41, Q4, 9; TT, P41, Q4, 12)
'Green friendly, recycling, being eco friendly'
Teacher Trainee 42 (TT, P42, Q4, 7; TT, P42, Q4, 8; TT, P42, Q4, 12)
'Recycling and protecting the environment through walking etc. rather than driving a car etc.'

Table 3.13 Participant Feedback

Organization expert 5 (OE, P05, Q1, 7; OE, P05, Q1, 212) 'Yes, the opportunity is to present sustainable principles and practices that pupils may continue to use throughout their lives. Particularly, in developing habits such as switching off lights and recycling – which can be more difficult to pick-up later on in primary school'. **Organization expert 3 (OE, P03, Q1, 84; OE, P03, Q1, 200)** 'Younger children often have a strong attachment to their teachers and carers, so there exists the chance for early instruction in sustainable lifestyles, e.g. concerning Litter, biodiversity/habitats, health, waste minimisation and energy/water saving.'

Table 3.14 Participant Feedback

Teacher Trainee Participant 33 (TT P33, Q9, 9; TT P33, Q8 12) 'Protection and preservation of our environment including animal habitats'
Teacher Trainee Participant 42 (TT P42, Q9, 9; TT P42, Q8 3) 'It helps develop children's understanding of how and why to protect the earth'
Teacher Trainee Participant 33 (TT P50, Q9, 9; TT P50, Q8 12) 'Sicrhau dealltwriaeth disgyblion o'r amgylechedd a sut i edrych ar ei ol' *(Ensure pupils understanding of the environment and how to look after it)*
Teacher Trainee Participant 9 (TT P09, Q9, 12; TT P09, Q8 3*)* Newididau yn yr amgylchedd. Plant yn mwy ymwybodol beth sydd angen gwneud i gadw amgylechedd naturiol/ effeithiol. *(Changes in the environment/ Children more aware of what needs to be done to keep the environment natural and effective).*

Table 3.15 Participant Feedback

School Teacher Participant 8 (ST P08 Q12, 35) Pwysig iawn, angen dysgu' r plant i fod yn barchus at eraill, dangos cyfrifoldeb at ein byd a cael y plant i feddwl tu allan i furiau cyfyngiedig yr ysgol a'r ardall lleol. (*Very important, need to teach children to be respectful of others, show responsibility towards our world and to get children to think beyond the restrictive school walls and local area*). **School Teacher Participant 4 (ST P04, Q3, 4; ST P04, Q3, 18)** 'Links between society, economy and the environment and between our own lives and those people throughout the world' **School Teacher Participant 9 (ST P09, Q10, issues= 9, 49, 5, 21, 23, 4)** It features in our school aims: To help learners to become confident, self-reliant, self-respecting and responsible global citizens who will make a positive contribution to society. To preserve and develop our own cultural identity within Wales, while at the same time promoting and understanding of and a respect for other cultures locally and globally. To raise students' awareness of sustainable development issues through classroom study and community action' **Teacher Trainee Participant 9 TT P09, Q4, 12; TT, P09, Q4, 9** 'ESDGC in my opinion is about children having compassion for their world and the people in it. It's also about the steps they can take to make sure they are respectful and not wasteful to the environment.'

Table 3.16 Participant Feedback

Teacher Trainee Participant 20 (TT P20, Q7, 35) 'It is important to help children understand how to be a good citizen and to protect their environment'.
Teacher Trainee Participant 09 (TT P09, Q7, 35) 'Very, to make teachers passionate about the subject so they can ensure their passion is carried on.'
Teacher Trainee Participant 41 (TT P41, Q7, 35) Very, it's a requirement of the NC (National Curriculum)
Teacher Trainee Participant 04 (TT P04, Q7, 34) 'Quiet important as it is a common topic in the media about how we need to look after the planet so within teaching and learning it is important to raise awareness.'

Table 3.17 Participant Feedback

Teacher Trainee Participant 27 (TT P27, Q7, 39) 'Not important I feel a better emphasis is needed on the other skills. Same applies to curriculum Cymraeg.'
Teacher Trainee Participant 16 (TT P16, Q7, 51) 'It seems to be important now than it was but I don't feel it is vital when planning lessons.'
Teacher Trainee Participant 48 (TT P48, Q7, 39) 'Not as important as other skills such as literacy but it is becoming more important as time goes on to develop children as a whole.'
Teacher Trainee Participant 17 (TT P17, Q7, 38) 'It is not very well promoted in comparison to the curriculum Cymreig therefore I have not seen it as important and has sometimes just been included for the sake of it.'
Teacher Trainee Participant 29 (TT P29, Q7, 32) 'Just a tick box element'

Table 3.18 Participant Feedback

Teacher Trainee Participant 39 (TT P39, Q09, 49) 'Helping children to develop thinking skills'
Teacher Trainee Participant 5 (TT P05 Q09, 49) 'ESDGC has the benefits of providing pupils with their own opinions and views on themselves and how they are in the world'
Teacher Trainee Participant 48 (TT P48, Q09, 49) 'Developing children as a whole'
Teacher Trainee Participant 37 (TT P37, Q09, 49) 'Help children develop life skills'
School Teacher Participant 04 (TT P04, Q21, 44; TT P04, Q21, 49) 'Encouraging thinking / participation. To make the right choices and decisions.' To desire for all children to receive suitable education which promotes equality and encourages learning for all.'
School Teacher Participant 09 (TT P09, Q20,88; TT P09, Q20, 85) 'ESDGC values and attitudes give and encourages responsibility and fosters democracy and raises self-esteem, critical thinking, problem solving and decision making skills.'

Table 3.19 Participant Feedback

Organisational Expert Participant 3 (OE P03, Q4, 23) 'In my work, I find that the natural curiosity of most children, and a willingness to engage in practical activities lend themselves to discoveries about the natural world, and the man-made world, which will most likely have an impact on them as future citizens.' **Organisational Expert Participant 9 (OE P09, Q4, 23)** 'The key thing I believe is that the sessions we provide are simple, clear and hands on so that children understand the key elements related to ESDGC.' **Organisational Expert Participant 01 (OE P01, Q1, 205)** 'The hands on, close up, close contact and outdoor nature of experiences in the centre- mini beast hunting, feeding birds and pond dipping particularly but also listing to wetland life. This is something teachers come here to experience as well as the expertise of the providers of the programmes. Again we are aiming increase our skills at providing inquiry led / learner led programmes in ways not found in many places'.

Table 3.20 Participant Feedback

Organizational Expert Participant 3 (OE P05, Q2, 47) 'ESDGC is complex in nature and contains many contradictions. Language may be technical, and the global 'big picture' will be beyond the comprehension of very young children. It may be that some practitioners could even find themselves in conflict with parents over such controversial issues as Climate Change or Healthy Eating (..."who are you to tell me what my child should eat?")'
School Teacher Participant 9 (ST P09, Q21, 95) 'Ensuring some topics are tackled sensitively and are age appropriate.'
Teacher Trainee Participant 43 (TT P43, Q7, 36) 'It's a grown up subject small children may not understand'
Teacher Trainee Participant 57 (TT P57, Q7, 47) 'Materion aeddfed a chymleth mewn rhai achosion' *(Mature and complicated matters in some cases)*

Table 3.21 Participant Feedback

Organisational Expert Participant 9 (OE, P09, Q1, (issues 7, 22 and 1)) 'The key areas that we are able to engage younger children with ESDGC issues are through simple projects using recycling resources, introducing wool as a sustainable product and its uses and showing the way that water was used to power the old machinery, by looking at the water wheel and providing sessions in how to harness natural power through creating a water wheel and showing how this works.'
Organisational Expert Participant 4 (OE, P04, Q5, 82) 'I am in a very fortunate position of being involved in the delivery of natural learning sessions with multiple age groups. It is focused firmly in the outdoors. Children are easy to engage as the sessions we run are fun and interactive so the children don't even realise that they are learning.'
Organizational Expert Participant 5 (OE P05, Q3, 208; OE, P05, Q3, 98) 'Yes, many ESDGC issues are complex in nature, therefore the topic you select and the level at which you discuss must be selected carefully. More holistic and physical approaches tend to work better'.

Table 3.22 Example of organisation named as ESDGC partners by School teacher participants.

Salvation Army	Radio Sir Gar
Romanian Children's Charity	Forest School
Ecoschools	Local supermarkets / stores and other busineses
British Council	Design a Smile
Oxfam	Local Education Authority
Tradecraft	Christian Aid
Environmental organisations	Forestry Commission
Hen Castle Estate	Send a Cow
Fairtrade	Schools in Africa
Healthy School Initiative	NSPCC
Museums	National Trust
Recycling organisations	Mentro Lluest
Town Council	Comenius (Global partnership)
Welsh Government	Cafod
Send My Friend	Mary's Meals
Keep Wales Tidy	Children's Ambassadors
Mission Club	Action Aid
Yni Da	Water Aid
Save the Children	RSPCA
Restavek No More	Children in Need
Penllegaer Valley Woods	

Table 3.23 Participant Feedback

Organisational Expert Participant 3 OE, P03, 23 'The early years setting, and in particular the Outdoor Learning movement and Health programmes, provide the opportunity to put in place good sustainable practices and hopefully begin the habits of a lifetime.'
Organisational Expert Participant 5 OE, P05, 23 Yes there are many examples, but the most important factor is that they have more freedom to explore and input into the direction of their learning.
Organisational Expert Participant 1 OE, P01, 23 'But it has to be said, at the same time, the provision of say a pond dipping experiences as long as it is engagingly done with plenty of opportunity for active learning, prediction and discovery will give a wealth of ESDGC links even if it is not delivered with that in mind by the programme provider'
Organisational Expert Participant 9 OE, P09, Q 23 'Younger children have created their own water wheels and trialled them to move a toy car using cogs and pulleys etc. in order to understand the way the power of water could be harnessed to run the machinery'.

Table 3.24 Participant Feedback

School Teacher Participant 9 ST P09 Q13, 14; ST P9, Q13, 82 'They recycle and reuse paper and plastic. They look after our local environment e.g. litter picks and wildlife in our local woods, planting and cultivating plants and vegetables in our gardens and allotments.' **School Teacher Participant (ST P04, Q14, (issues 07, 22, 24, 14))** 'Responsibility for energy, recycling, keeping themselves healthy, keeping the school neat and tidy'

Table 3.25 Participant Feedback

Organisational Expert Participant (OE, P03,)
'In the Primary School setting, it appears to me that older children (Yr 5 / Yr 6) will tend to take the lead, and in doing so, the younger pupils may feel somewhat overshadowed, but I feel that it's important that they do take part in order to have the responsibility of the post, getting used to being part of a democratic body, reporting back to class, and the raised self-esteem that goes with committee/council membership. In the stand-alone Infant school, the pupils who are elected or chosen for School Council / Eco-Committee duty tend to be more outspoken, and generally derive great benefit from having an important voice, and the ability to make changes to their school environment. I feel that it is important that part of the ethos of the school/nursery is to ensure that all pupils' opinions are heard. This can be achieved through adopting a 'values' education, ensuring that quieter children are positively engaged, and even where Committees and Council are adult-oriented, that pupils are included and given a chance to participate alongside the adults.'
Organisational Expert Participant 9 (OE, P09,)
'Perhaps children could be engaged in the classroom on a particular issue and have the opportunity to show and explain what they have found to older children?'
Organisational Expert Participant 5 (OE, P05,)
'There view point should be included but often the committee style decision making isn't suited.' Foundation teachers should be involved and devise ways for foundation pupils to vote on big decisions. Given time they can develop appropriate ways to understand their views.
Organisational Expert Participant (OE, P04,)
'The ability range in this age group is very wide so I feel this should be considered in an individual basis'.

Table 3.26 Participant Feedback

Parents **School Teacher Participant 8 (ST P08, Q17)** Parents help with recycling (clothes). Fundraising' **School Teacher Participant 9 (ST P09, Q17)** 'Yes, they support our recycling and our gardening clubs. ESDGC communicated via newsletters and parents participate in ESDGC events e.g. cultural evenings.' **School Teacher Participant 3 (ST P03, Q17, 3)** 'Developing wild area and maintaining it. Parent Governor invited to Eco Committee meeting.' **Community** **School Teacher Participant 7 (ST P07, Q18, 85)** 'Yes we have volunteers helping with the gardens, fund raising etc. We also have a partnership with a local nursing home.' **School Teacher Participant 8 (ST, P08, Q18)** 'Rydym yn cynnal siop caffi Masnach Deg i'r cyhoedd.' (*We provide a Fair Trade shop for public*) **Teacher Trainee Participant 7 (TT P7 Q7 21)** Understanding of our role as members of communities, school, local and world and our responsibilities within these communities.' **School Teacher Participant 10 (ST P10, Q18)** 'Very little- we have worked with local ground work team to plant planters within the school ground. This area needs to be developed further.'

Table 3.27 Participant Feedback

Organisational Expert Participant 5 (OE P05, Q
'More funding and education for schools to set the best example that they can. Difficult to teach grow your own, healthy eating recycling when school faculties and teachers are not setting the example.'
Organisational Expert Participant 03 (OE, P05, Q)
'Practitioners need to be good role models, and 'walk the walk' where possible.'

Table 3.28 Participant Feedback

School Teacher Participant 3 (ST, P03, Q21, 93) 'Ensuring a consistent message is given throughout the school'
School Teacher Participant 14 (ST, P14, Q21, 99) 'Management is positive and there is clarity'
Organisational Expert Participant 5 (OE 05 Q2, 'Support of the head teacher is vital as without it, it can be impossible to keep enthusiasm and engagement going.'
Organisational Expert Participant 3 (OE, P03, Q11) 'A key factor here will be the willingness of the school management / teaching staff to encourage younger pupils to participate in such fora, and for such practitioners to appreciate the value of doing so.'

Table 3.29 Participant Feedback

School Teacher Participant 1 (ST, P01, ‘Creu gardd blodau gwyllt. Arsylwi pili plas nawr a wedyn ar ol yr ardd- faint sydd yn newid. (*Create a wild flower garden. Observe butterflies now and after the garden, see how it changes*) **School Teacher Participant 15 (ST, P15,** ‘Mae plant yn chwilota yn yr amgylcehdd naturiol am blanhigion ac anifieliaid, deunyddiau naturiol, gwneud arolwg traffic.’ (*Children explore the natural environment for plants and animals, they do a traffic survey*).

Table 3.30 Participant Feedback

Organisational Expert Participant 4 (OE P04 , 'Only by being in nature do children and young people learn to understand and care about it. This in turn will influence decisions and choices that they make as adults. This could lead to voting for specific policies such as sustainable use of natural resources, working in specific sectors that work sustainably with an eye on global issues, etc. A small step a child makes within ESDGC delivery methods can have huge implications in later life. I spent considerable time as a forest school leader with nursery, key stage 1 and key stage 2 children and it was very clear that having hands on learning opportunities in the natural environment gave them enough knowledge to care. By learning in it you learn about it'. **Organisational Expert Participant 5 (OE, P05)** 'Also research has shown that the more opportunities we have to engage with positive ESDGC/outdoor learning at a young age the more likely we are to foster respect and care for the environment. The benefit is that this age group is inspiring.'

Table 3.31 Participant Feedback

School Teacher Participant 8 (ST, P08, Q17, 83) Mae'r PTA a'r llywodraethwyr yn cefnogi y gwaith y pwyllgorau. Maent yn ceisio bob amser i ddefnyddio masnach Masnach Deg. (*The PTA and governors support the work of the committees. They try to use Fair Trade products always.)*
School Teacher Participant 10 (ST, P10, Q7, 83) 'We address food within the curriculum both as a local commodity and global , considering air miles and storage solutions to farmers co-operatives and Fairtrade having links with Tradecraft'
School Teacher Participant 2 (ST. P02, Q7, 80) 'Garddio. Mynd mas i dyfu llysiau, byta nhw.' *(Gardening. Going out to grow vegetables, eating them.)*

Table 3.32 Participant Feedback

Teacher Trainee Participant 52 (ST, P52, Q10, 40)
'Byddai mwy o adnoddau parod yn gefnogol yng nghyfnod allweddol 2 a'r Cyfnod Sylfaen e.e. adnoddau gweledol i helpu'r plant ddeall.'
(More available resources in Key Stage 2 and the Foundation Phase would be useful, e.g. visual resources to help the children understand.)

Teacher Trainee Participant 2 (ST, P02, Q10, 40)
'Not enough resources or materials you can use'

Teacher Trainee Participant 47 (ST, P47, Q10, 40)
'Limited resources and lack of knowledge on the subjects.'

Teacher Trainee Participant 3 (TT, P03, Q10, 43)
'Identifying when best to use ESDGC in a creative and innovative way'

Teacher Trainee Participant 8 (TT, P08, Q10, 41)
'Linking it in a across curricular approach. How it can be delivered'

Teacher Trainee Participant 33 (TT, P33, Q10, 42)
'Not enough time as other curriculum areas need coverage.'

Teacher Trainee Participant 1 (ST, P01, Q10, 41)
'It can be difficult to incorporate into it into lessons.'

Teacher Trainee Participant 42 (TT, P40, Q10, 42)
There isn't enough time / space in the curriculum to fully teach ESDGC. Even though you can encorporate it in lessons, it still can't be taught effectively.'

School Teacher Participant 15 (ST, P15, Q21)
'I dderbyn hyfforddiant briodol yn ADCDF'
(To receive relevant training in ESDGC.)

School Teacher Participant 09 (ST, P09, Q21, 40)
'Sometimes finding suitable resources or giving pupils first hand experiences'

School Teacher Participant 12 (ST, P12, Q21, 98)
'Parhau i roi pwyslias ar hyn, cynnwys plant mewn trafodaethau, rhannu arferion da.'
(Continue to highlight on this, include in discussions with children, share good practice.)

School Teacher Participant 09 (ST, P09, Q21, 40)
'Key Stage 2 curriculum and targets or Literacy/ Numeracy major focus- difficulty fitting all aspects'

School Teacher Participant 02 (ST, P02, Q21, 40)
'Adnoddau yn y Gymraeg. Cael pecyn, lluniau, NGFL, pethau parod yn y Gymraeg.'
(Resources in Welsh. Have a pack, photos from NGFL, things that are available in Welsh.)

School Teacher Participant 01 (ST, P09, Q21, 42)

‘Bywyd ysgol mor brysur falle rhai staff yn gweld gwaith yn drwm’
(*School life so busy, maybe some staff see work is heavy.)*
School Teacher Participant 11 (ST, P11, Q21, 42)
‘Amser mae gymaint i’w gyflawni’
(Time, there is so much to complete)

Table 3.33 Web Analysis Outcomes

Organisation	Brief	Resources	Early Years / Foundation Phase content	Resources specific to Early Years / Foundation Phase
A	Global Citizenship / Poverty / Development	Teacher Support. Project ideas for whole school. Whole School reinforcement.	17 resources (10%) of the 169 available dedicated to early years and 5–7 year olds.	Problem solving and discussion based Use of pictures, and clips to engage discussion linked to ESDGC themes. Difficult to locate Welsh medium information.
B	Global Citizenship and Human Rights	Information available to support teachers. Active participation encouraged	Difficult to find information specifically for early childhood, but resource for primary schools includes 5 years old upwards	New resource for primary schools in Wales 5-11. Bilingual. Active and discussion based including pictures and

				resources to encourage discussion and activities.
C	History and sites to visit in Wales	Difficult to find information which tied in specifically with ESDGC however resources content could be adapted by teachers to this focus. Several downloadable resources and school visit information.	Documents linked to using resources sustainably, looking after the planet, mini-beast hunts. Practical activities. Majority are designed for year 3 or above, but could be adapted for younger children.	Bilingual resources. One document on literacy and numeracy in the Foundation Phase specifically that could also be linked to ESDGC by confident teachers. Several examples of visits specific to Foundation Phase that may have ESDGC links.

D	Conservation and environmental education.	ESDGC highlighted on website Visits for primary schools encouraged rather than downloadable resources.	Visits to be arranged with teachers.	Bilingual Emphasis on cross curricular and hands on learning. Publicity notes young children's involvement

Table 3.34 Participant Feedback

Organisational Expert Participant 1 (OE, P01, Q4, 23) 'We are a hands on and outdoor provider of environmental learning with some fantastic habitats and species and environment to share with visiting groups.' **Organisational Expert Participant 5 (OE, P05, Q3, 98; OE, P05, Q3, 208**) 'A greater understanding, confidence and awareness in ESDGC will allow practitioners the opportunity to relate the issues at the appropriate level to their own groups. Hands-on training days for practitioners to work with ESDGC specialists and share tips and activities.'

Table 3.35 Participant Feedback

Organisational Expert Participant 1 (OE, P01, Q5, 84; OE, Q6, 208) 'From the point of view of delivering programmes, familiarity with 3-7 year olds- especially the younger end of the range. Developing the necessary teaching skills and techniques. We are not specialists in this age range and it is one where particular skills are necessary for effective learning to take place. This might be achieved by training sessions, shadowing teachers in schools to see best practice which I feel would be enormously beneficial to all concerned' **Organisational Expert Participant 5 (OE, P05, Q6, 208**) 'Working more with teachers and the age group. Talking to teachers and spending time testing ideas with schools.'

Table 3.36 Participant Feedback

Organisational Expert (Participant 4 OE, P04, 210) 'Making any research on how learning and engaging in this subject and activities can aid children's development and learning would be a great tool to influence others.'
Organisational Expert (Participant 5 OE, P05, 214) 'but it can be difficult in a one-off meeting to know at what level to work with the pupils but also sometimes to know if the workshop had an effect on the pupils.'
Organisational Expert (Participant 3 OE, P03, 210) 'Organisation has responded to earlier independent research findings and produced a more simplified framework for the early years setting, so that younger children can have greater involvement with the *** programme.'

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