An Ecology of Change –

Teaching and learning for sustainable development in the tertiary education sector in the United Kingdom 2005-2014

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Abstract

In this thesis I advocate and evidence ESD through understanding and analysing the ecology of change in educational organisations, in particular Tertiary Education (TE), during the Decade of Education for Sustainable Development (UNDESD, 2005-2014). I draw on my portfolio of research that examined various aspects of the efforts to mainstream ESD during this decade. My publications, which are referred to in this thesis, are based on experience of my own practice as lecturer, educational development manager and advocate of ESD at local, national and global level. My research approach is broadly based on action research principles.

I argue that, to fully understand this complex change process, it is necessary to appreciate the role of the underpinning, and often conflicting, values in TE and how they influence the adoption of ESD. I further discuss the influence of both 'top-down' approaches, that are expressed in policies and frameworks, and 'bottom-up' approaches that are instigated by communities and individuals with special interests. The influence of the learning environment itself is also examined. Lastly, I make the case that the employment of appropriate action research methodologies can help with gaining a better understanding of this process as well as play a part in the process itself.

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1| Introduction

> 'The truth is that many things on which your future health and prosperity depend are in dire jeopardy: climate stability, the resilience and productivity of natural systems, the beauty of the natural world, and biological diversity. It is worth noting that this is not the work of ignorant people. It is, rather, largely the result of work by people with BAs, BSs, LLBs, MBAs, and PhDs' (1991, David Orr).

The trailblazing environmental educator David Orr argues in his influential publication Earth in Mind (1994), that knowledge of environmental issues alone does not make people act more sustainably. He proposes that a different kind of education is needed to tackle the global challenges we are facing, broadly referred to here as Education for Sustainable Development (ESD). In recent research he confirms that 'promoting cognitive skills by itself cannot sufficiently influence the formation of a social disposition' (Alt and Reingold, 2012: vii). His view differs from the dominant 'individualistic models of behaviour' approach in social sciences research that is informed by economics and psychology approaches and assumes that change happens through individual choice (Whitmarsh et al, 2011:258). Although, there are also social scientists like Elizabeth Shove, who questions the dominance of this approach in research. She argues that approaches that consider 'social theories of practice and transition' should also be included to get a better understanding of how pro-sustainability behaviour can be instigated (2010:1274). Orr's approach acknowledges the role of the individual (student and teacher) but also social context and the dynamic interactions between the individual, society and the environment. His view gets special attention here, because his work is frequently referred to by leading ESD researchers such as Blewitt (2004), Sterling (2013), Tilbury (2013), Wals and Corcoran (2012). I have also frequently referred to Orr (Sjerps-Jones 2007; 2011; 2011; 2012); like him I appreciate individuals not in isolation from their environment, but as 'co-members of an enterprise' (Orr, 2004:xiii).

Since the conception of the idea of ESD, and in particular the United Nation's Decade for ESD (UNDESD: 2005-2014), attempts have been made to embed ESD in Tertiary Education (TE). However, when discussing education and sustainability in the context of TE, most emphasis is still placed on *learning about sustainability* rather than the transformational approach of *learning for*

sustainability that asks of the educator and learner to be actively engaged in the process of sustainable development. (Sjerps-Jones, 2014)

We are approaching the end of the UNDESD and the third Earth Summit (2012) is behind us. The multilateral agreements reached at the summit (Future We Want, 2012) include some bold commitments regarding ESD, but to what extent has anything changed in TE over the past ten years? I have been actively involved in this process myself, which I acknowledge has influenced my perspective. Since 2005, coinciding with the start of the UNDESD, I have been active as an action-researcher whilst working as an educational practitioner in TE. I have been involved in teacher training (Martin, Summers and Sjerps-Jones, 2007) lecturing, programme development (Sjerps-Jones 2011), institutional change, governance (Kershaw and Sjerps-Jones, 2012) and was advisor for the Quality Assurance Agency and Higher Education Academy (HEA) (Bellingham et al., 2014) on ESD. I have further been involved in the World Summit for Sustainable Development Rio+20 (Carteron et al, 2013), and the 'Rio+20 Peoples' Sustainability Treaty on Higher Education' (IUCN, 2012). This varied involvement at all levels of TE has given me insight in the grassroots activities as well as policy development from an educator's perspective. Through my action research I have learnt that there is a need to get a better understanding of how change works in a TE context; there is a need for a deeper understanding of the 'ecology of change' in order to develop an effective approach to realigning TE with sustainable development objectives.

1.1 Aim and objectives

The aim of my thesis is to advocate and evidence ESD through understanding and analysing the ecology of change in educational organisations, in particular Tertiary Education (TE), during the Decade of Education for Sustainable Development (UNDESD, 2005-2014). Drawing on my portfolio of research that examined various aspects of the efforts to mainstream ESD during the UNDESD my objectives are to:

> – Discuss the role of underpinning values in TE since the conception of ESD, e.g. what is seen as the purpose of education in our current climate

and how that supports the vision and values for Sustainable Development.

This will be addressed in Section 2: **Underpinning values:** a planetary vision

– Identify global and local influences on TE, the dynamics between top down and bottom up approaches, and discuss to what extent policies, frameworks and stakeholders in TE are supporting the adaptation of ESD.

This will be addressed in Section 3: **Global and local landscapes:** contexts and drivers for embedding ESD, which includes a personal case study

– Demonstrate how appropriate learning environments could contribute to the adoption of ESD.

This will be addressed in Section 4: **Habitats:** the institutional learning environment

– Evidence the dynamics and interactions between different stakeholders and communities, including the different academic territories, relating to institutional change for ESD.

This will be addressed in Section 5: **Populations and territories:** dynamic communities

– Demonstrate how adaptation of ESD relates to general quality enhancement of teaching and learning.

This will be addressed in Section 6: **Propagating and Nurturing:** capacity and quality

– Drawing key findings from these topics, I will further discuss the relationships and dynamics within and between all aspects, levels and players related to the reorientation of teaching and learning in the TE sector towards Education for Sustainable Development (ESD).

This will be addressed in Section 7: **Discussion**.

1.2 Approach

Besides referring to my own work, I will refer to academic publications and policy and strategy documents from the international community, governments and TE. Although each section equally contributes to understanding the dynamics of ESD in TE, the section on values (section 2) is more extensive. The notion and interpretations of Sustainable Development (SD) are based on personal and common values rooted in different views of 'the relationship between humanity and nature' (Robinson, 2004:379) and are therefore often contested. Also, educational paradigms are commonly linked to certain values about *what* should be taught (contents) and *how* it should be taught (pedagogy), but interestingly in TE, an open discussion about values in teaching is contentious. This merits further investigation. To illustrate theories and findings from my previous publications, I will make use of case studies of my own practice.

There are two underpinning ideas to my approach in understanding the ecology of change in organisations. Firstly, based on my co-operative inquiry research, I have learnt, as aforementioned, that it is more helpful to consider complex organisations as living organisms rather than abstract structures and secondly that the organisation is best understood as part of a changeable network with complex interactions.

My approach is influenced by the paradigm of holistic science that acknowledges that 'complex systems have *emergent properties* that describe their characteristics as wholes and that these properties are conditioned, but not determined, by the system's constituent parts' (Schumacher College, 2014). The late Schumacher College and (holistic) scientist Brian Goodwin introduced me to his methodology of understanding ecological systems. Inspired by Goethe's philosophy, Goodwin tried to articulate an alternative to the traditional Darwinian approach to biology and understand organisms at a different level. In an interview with Harding (2013:123) he sums it up as follows: ' (…) by observing organisms as dynamic wholes you develop this capacity to have a dialogue with them; so you really begin to understand what they are doing as subjects.' In my view, organisations, such as Higher Education Institutions

(HEIs), are no different from a living organism, namely a 'dynamic whole' with interdependent parts.

A second influence that has inspired my approach to understanding change comes from another holistic scientist, Fridjof Capra, who, not dissimilar to Goodwin, proposes that 'networks are the basic pattern of organizations of living beings' (2013:128). The importance that he is giving to the unique role of catalysts in disrupting 'dynamics in networks' (2013) has inspired my approach to instigating change in organisations. In my practice of embedding ESD in teaching and learning, I have often employed catalyst interventions as a means of disrupting the kind of retrograde curriculum delivery that reinforces unsustainable practices (Sjerps-Jones 2007; 2011; 2011; 2012). Capra argues that because catalysts 'interlink different reactions' they cause 'the entire nonlinear dynamics of networks, including the spontaneous emergence of new forms of order' to come into play (2013:128). I have also identified the importance of the influence of cultural context and the spreading of pro-sustainability messages early on in my research. (Sjerps-Jones 2007; 2009; 2011; 2011; 2011). These messages can be viewed as 'memes' as described by Dawkins in The Selfish Gene (2006:192). 'Memes' are units of 'cultural transmission', such as ideas or convictions. According to Dawkins they can be viewed as a 'living structure' with the ability to propagate and spread quickly if the conditions are right (fecundity) e.g. appealing idea, convincing advocate and easy to copy (2006:192). This can for example be done through social media. The implicit values embedded in these memes are crucial to make them appealing to the receiver. The role of values is further discussed in section 2.

Drawing from a holistic science approach in understanding and influencing organisations is not unusual amongst ESD researchers and practitioners; Capra is frequently referred to (Harding, 2006, Sterling, 2013), but is less recognised by traditional HEI practitioners. Organisational change in HEI is still mostly delivered in a hierarchical, top-down and linear manner.

To summarise, an understanding the internal and external interactions of organisations, the transmission of culture and the effectiveness of the networks in which they operate, is crucial to the development of an understanding of how ESD is adopted, adapted and propagated in HEIs.

2| Underpinning values: A planetary vision

> 'We stand at a critical moment in Earth's history, a time when humanity must choose its future. As the world becomes increasingly interdependent and fragile, the future at once holds great peril and great promise. To move forward we must recognize that in the midst of a magnificent diversity of cultures and life forms we are one human family and one Earth community with a common destiny. We must join together to bring forth a sustainable global society founded on respect for nature, universal human rights, economic justice, and a culture of peace. Towards this end, it is imperative that we, the peoples of Earth, declare our responsibility to one another, to the greater community of life, and to future generations' (Earth Charter Initiative, 2000).

The principles, interpretations and responses to 'Sustainable Development' (WCED, 1987) can only be understood when put in the context of personal and societal 'values' systems and 'attitudes'. These attitudes also influence how the purpose of education in this context is perceived and shaped. UNESCO, which has been deeply involved in the promotion of ESD, defines values and attitudes as follows: 'Values are generally long-term standards or principles that are used to judge the worth of an idea or action' and 'Attitudes predispose us to respond in particular ways to people and events' (UNESCO, 2010).

One could argue that in an interconnected world, it will be difficult to agree on collaborative actions for a sustainable future without some commonly accepted global ethical principles to inform ideas and actions. Just like the past development of shared values for human rights, that has resulted in the Universal Declaration of Human Rights (UN, 1948).

2.1 Values in education

It is broadly accepted that education has a role to play in the promotion of values. This is evidenced for example in the many different faiths that have founded schools to promote specific morals that will influence the students' behaviours, ranging from Steiner to Church of England and Islam. The recent upheaval around the fear that radical doctrine taught at some Muslim schools in Birmingham may lead to more homegrown terrorism, is an example of the link between taught values and behaviours, in this case behaviours that are

unwanted by society at large (BBC, 2014). The link between personal values, attitudes and behaviours are widely recognized between educators. In particular Bloom's frequently applied and influential learning taxonomy (1956) is helpful in understanding how values are internalised by the learner and in turn influence actions.

Equally, many educators work under the assumption that certain social actions can lead to a change in behaviour and a change in personal values, e.g. an invitation to take part in sustainable actions can lead to a reconsideration of personal attitudes (Smith and Mackie, 2007; Ikeda, 2003). This is also recognised by ESD expert Stephen Sterling who notes that 'sustainability education' that includes *practical* aspects, e.g. putting theory into action, can have a 'long term impact on students' worldviews' (2011:18).

2.2 Values for Sustainable Development

Educators are not alone in recognising the importance of understanding the shaping of values in relation to SD, since the 1970s a wide range of social scientists (in geography, psychology, politics etc) have focused research on the role of underpinning values, or guiding principles, in pro-sustainability behaviours. For example, Barr identifies three categories of values that are relevant: the 'social value dimensions' (caring for the self and others; willingness to learn and change), the 'relational value' (relation to nature and/or technology) and 'operational values' (preferences for action) that are closely linked to attitudes. (Barr, 2008:115). Another social researcher, Robinson, identifies two important values approaches to sustainability: values oriented towards 'personal change' and values oriented towards 'efficiency gains' (2004:378).

The boundaries of the aforementioned categories are in reality fuzzy, but they are useful in helping to further understand how values could play a role in SD and ESD. I acknowledge here that the approach to link values to action is contested amongst social scientists (Whitmarsh et al, 2011:258), but less so in the international political arena.

Recognising the importance of values as drivers for SD, the international community (Civil Society and UN Agencies with an interest in SD) has attempted over the past decades to come to some agreement on shared values and visions for sustainable futures. In 1987 the World Commission on Environment and Development, also known as 'the Brundtland Commission' published 'Our Common Future Report'. In the report the now well-known concept of Sustainable Development was defined: 'Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (WCED, 1987).

The description expresses the assumption that present generations of all populations across planet Earth, have rights to 'meet the needs' including the populations that have not been born yet. It is an equality statement referring to the Universal Declaration of Human Rights, in particularly Article 3: 'Everyone has the right to life, liberty and security of person'. (UN, 1948), This is further explained in the first of the two key concepts of the Brundtland Report; it explains that by the concept of 'needs' is meant 'in particular the essential needs of the world's poor, to which overriding priority should be given'.

Having arrived at this values based principle, it is not surprising that the same report also called for 'creation of both a new charter and new covenant that would set forth fundamental principles of sustainable development' (Rockefeller, 1998:26) to 'guide' the transition to sustainable development. At the time it was a breakthrough that consideration was given to future generations, but the starting point was very anthropocentric as it focused mostly on the *human* species. Following the report there was a call to be more inclusive of the rights of other life forms inhabiting the planet. A moral concern for species was expressed in the World Charter for Nature (1982):

> 'Every form of life is unique, warranting respect regardless of its worth to man, and, to accord other organisms such recognition, man must be guided by a moral code of action'.

A further discussion about the idea of a 'moral code' took place in the process leading to the Earth Summit in 1992; the idea of an *Earth Charter* (EC) was born. It proved difficult to reach a consensus about ways forward, but in 1994 the EC was proposed as a civil society initiative. An independent Commission

oversaw the development of a global consensus document, which was agreed on six years later (March 2000). Although, as EC commissioner Rockefeller recalls, 'the concept of the right of nature has not won broad international acceptance' (1998:26) the charter does call for respect for *all* individual beings as evident in Principle 1a: 'Recognize that all beings are interdependent and every form of life has value regardless of its worth to human beings'. (Earth Charter Initiative, 2000). This is an important diversion from the exclusive focus on human centric values in the 20th century.

It was always the intention that the Earth Charter would play an empowering role in civil society and a compass for values rather than being a top down instrument for change: 'we do not only have the governments based on law and regulations but also the civil society putting pressure on systems and applying the force of soft law' (Lubbers, 1998:66).

One of its first impacts was the important influence it had on the Plan of Implementation for the UNESCO Decade of Education for Sustainable Development (UNDESD, 2005-14). The UNDESD's vision reflects the values expressed in the 'Brundtland Report' (WCED, 1987) and Earth Charter. With the inclusions of words such as 'solve', 'respect' and 'create', it puts also emphasis on duties and actions, not just rights, and therefore expresses clear aspirations for social responsibility:

> 'What if education systems prepared learners to enter the workforce as well as handle a crisis, be resilient, become responsible citizens, adapt to change, recognize and solve local problems with global roots, meet other cultures with respect, and create a peaceful and sustainable society? Then we would be educating for a more sustainable future' (UNESCO, n.d.a).

It needs to be recognized that this vision is political. It will inevitably create tension with pedagogic approaches that focus on 'individualistic goals', an approach that is prevalent in most developed countries since the second half of the 20th Century (Alt and Reingold, 2012:1).

2.3 Values based paradigms for Education for Sustainable Development

In the same period, in response to the Brundtland report (WCED, 1987) and the first two Earth Summits (1992, 2002), leading educators attempted to define a

different educational approach to enable and aid sustainable development. It was acknowledged that education could play an important role in reorienting attitudes towards sustainability, for example through experiential learning opportunities that allows the learner to reconnect with the natural environment (Gale, 2008) and also through 'new forms of social learning'; (Robinson, 2004:378). The budding paradigm for ESD built on the ideas of Environmental Education (EE) that emerged in 1970s in parallel with the Club of Rome's publication 'Limits to Growth (1972) and Rachel Carson's iconic book 'Silent Spring' (1962). Both publications are written from an eco-centric perspective and warn of the disastrous impact of human activity on the 'bio-geophysical properties of the natural world' (Dale and Newman, 2005:357). Although EE and ESD pedagogies are closely related, I acknowledge that there are important differences between the two paradigms. Some educational theorists would emphatically argue that the approaches are very different as the principal point of EE is that without a sustainable *environment* there will be no hope for human survival; therefore environmentalism should be central to education (Orr, 1991:52). ESD is more anthropocentric, similar to SD (WCED, 1987) and acknowledges the interdependence of environmental, social, economic and cultural issues. However, in this context I will focus on the overlapping principles of these two paradigms and incorporate EE within the larger ESD construct. I am not alone in this approach, Wals and Corcoran (2012:22) justify badging the two together as follows:

> 'Both EE and ESD consider education and learning as a key in re-orienting lifestyles, communities and, ultimately, societies and the values on which they are based, in a direction that will allow the planet to go on indefinitely with human beings as permanent inhabitants among many other species.'

This definition resonates with the 'living organism' idea that I introduced earlier. However, I would like to go a step further than Wals and Corcoran and also incorporate the paradigms of Development Education (DE) into my interpretation of ESD. Development Education is more human centric than ESD and although mostly focussed on 'social justice', the Development Education Research Centre describes its aims as giving 'people the skills and confidence to support change towards a more just and sustainable world' (Institute of

Education, 2014). Some practitioners see ESD as a subset of DE and EE as a subset of ESD, but in my view both EE and DE have significant overlaps with ESD and share to a great extend the same values and approaches in teaching. I agree with Maiteny (2005:12) that 'environmental' or 'developmental' problems are 'all symptoms of human problems' and that the key in resolving the sustainability crisis lies with humans. This chimes with Ikeda's proposal for human revolution (2014) as mentioned above. However, interpretations of ESD will remain a personal matter. When EE and ESD expert Sterling attempted to clarify the differences between EE and ESD, he also concluded that in the end 'any expression of environmental or sustainability education' reflects a 'worldview' and is therefore wide open to a range of interpretations (2004:51).

Differences between the approaches of ESD, EE and DE set aside; the core question behind the paradigms is 'what is the purpose of education?' Is it for the benefit of the individual, the economy, life on our planet, society, or all of those? Orr argued in his provoking article 'What is education for?' that 'It is not education that will save us, but education of a certain kind.' (Orr, 1991:52). As highlighted in my introduction, he argued that knowledge alone does not mean that people change their behaviour from unsustainable to sustainable practices. Indeed, knowledge of a problem and even knowledge of solutions does not necessarily lead to concerted action to tackle the problem. He even goes further and argues that highly educated people have put 'many things on which your future health and prosperity depend' at risk (Orr, 1991). As mentioned in the introduction, Orr is not alone; his views are broadly supported by many ESD practitioners and researchers as well as other social scientists who question the effectiveness of 'information deficit model' approaches to behaviour change (Blake, 1999:260; Shove, 2010:1274; Agyeman and Angus, 2002:346).

Values for ESD cannot be seen as separate from other educational paradigms for student empowerment and social oriented action learning that precede the construct of SD. More than 100 years ago, the educational reformist John Dewey, proposed the idea of the educational establishment as an institution through which 'social transformation' takes place and recognised the importance of student empowerment (1897). Notably he proclaimed that

> '(…) true education comes through the stimulation of the child's powers by the demands of the social situations in which he finds himself. Through these demands he is stimulated to act as a member of a unity, to emerge from his original narrowness of action and feeling, and to conceive of himself from the standpoint of the welfare of the group to which he belongs' (1897:77).

Other important influences are the early 20th century 'experiential learning' ideas of Tsunesaburo Makaguchi (2002), the founder of Value Creating Pedagogy, and Paolo Freire's ideas for self-empowerment, social action learning and 'dialogue' based on mutual 'respect' as a basis for education (1972). All three paradigms have a strong element of socially engaged, transformative, self-empowering citizenship education, which can be found back in the paradigm of ESD.

2.4 Frictions of values in Tertiary Education

Despite ESD's strong ethical foundations that are built on the education paradigms of Dewey, Makaguchi and Freire, and the values-based vision of the UNDESD, values for ESD are rarely discussed in the context of TE. This is a real challenge, as one could argue that ESD without the exploration of value issues will be counterproductive as both 'social', 'relational' and 'operational' (Barr 2008:115) values play such an important role in the process of SD. UNESCO ESD chair Arjen Wals points out that 'just raising knowledge and awareness' in TE without a common purpose for sustainable futures will lead to 'apathy' (2012:23). I noted in my earliest research how challenging it is 'to introduce and address sustainability issues at colleges and universities since it is not just the content of the curriculum that is gradually changing'; the whole teaching and learning paradigm should be reviewed (Sjerps-Jones, 2007: 164). I also noted that the former Learning and Skills Council (LSC) for Further Education acknowledged the need for development of 'citizenship' in this context (LSC, 2005) but that the Higher Education Funding Council for England (HEFCE) refrained from mentioning values and stuck to focusing on graduate 'skills and knowledge' for sustainable development (HEFCE, 2005).

I detected that there was an underlying concern that the adoption of ESD would be seen as imposing values on learners. Although it is widely acceptable to

teach values in primary and secondary education, not exclusively but in particular through religious and citizenship education (Department for Education, 2013), it is seemingly less acceptable in an HE context (Wals and Jickling, 2002, HEFCE, 2005), although 'universities are implicitly shaping students' identities, and doing so in entirely implicit and unquestioned ways' (Stibbe, 2011:90-91).

Whilst young children would certainly be more susceptible to indoctrination than young adults, there is trepidation around imposing values on students. In my view this is a 'meme' full of contradictions, not only because enforcing values upon learners would go against the spirit of ESD as was made clear in an early stage of the development of the construct, e.g. 'democratic', 'self-regulative' and 'emancipatory' teaching and learning (Wals and Jickling, 2002:225), but also because it is generally accepted to teach other value-laden canons that promote unsustainable practices, such as neoliberal market economy. Wals and Corcoran (2012:26) observe that education nowadays mostly prepares students for 'their role in the global economy' and that 'only at the margins of education are there still spaces for things like citizenship, democracy, arts, and humanities, philosophy, ethics, change and transformation.' It could be the case that neoliberalism is not recognised as an imposed value because the words associated with it are so assimilated in HE that they have become the norm. John Blewitt (2013:51) notes that 'metaphors from the business world' such as 'targets, value for money, customers, clients and quality management' are today commonly used in educational context. He observes that 'the current instrumentalism is arguably superseding any notion of education being a good in itself' and that 'higher education's values reside in what it can provide economically'. Economic language is even adopted in 'pro ESD' UN reports. The UN System Task Team on the Post-2015 Development Agenda writes for example that responsive education should 'identify skills needs early on, as well as anticipate their evolution, and make better use of labour market information for matching skills demands and supply' (2012:13-14). The reorientation of public education from 'public good' to 'economical value' is also criticised by the American philosopher Martha Nussbaum (2010). She draws attention to the side effect of privatisation and commercialisation of education, because 'in the process, education unintentionally contributes to unsustainability' (Nussbaum,

2010, quoted in Wals and Corcoran, 2012). In the UK the commercialisation of HE has been accelerated post Lord Browne's report 'Securing a Sustainable Future for Higher Education' (HM Government, 2010) that mainly focuses on student finance. It includes the market oriented recommendations that 'HEIs must persuade students that they should "pay more" in order to "get more"'(2010:4) and 'increased private contributions and more targeted public investment to support high quality provision and allow the sector to grow to meet qualified demand' (2010:8). Notably, after the report student fees of up to £9000 a year have been introduced. This has interestingly not just shifted the values underpinning HE but has also brought opportunities relating to ESD. This will be further addressed in section 3.

2.5 Reconciling clashing values

The dominance of the values of the neoliberal free market economy in TE still does not fully explain why there is such opposition against the discussion of values for ESD in this context. Also, the two paradigms do not need to lead to conflict. The friction between the widely accepted *liberalism* approach in education and the introduction of 'mandatory' environmentally minded education is examined by Ferkany and Whyte (2012:1). They come to the conclusion that the 'perceived conflict' between values 'neutral' liberalism and ESD is exaggerated and argue that the kind of education 'that will better equip citizens to cope with environmental problems is quite possible for liberal politics'. This kind of thinking can be recognised in the emerging sustainability focused values frameworks for business education such as Principles for Responsible Management Education (PRME) and the United Nations Global Compact (GRLI), which I will discuss further in Section 3.2.

Another way of reconciling issues around teaching values in TE is proposed by the former director of Earth Charter UK, Jeffrey Newman. He also recognises that TE educators are faced with a dilemma: 'If values are explicitly incorporated in the curriculum they could be accused of imposing ideologies on learners. But if all mention of values is expunged from education, then this leaves little choice for learners but to draw their values from the unsustainable society around them.' (Newman, 2009:99). To get around this dilemma he goes on to propose a culture for 'reflection' on current values and 'imagination of alternatives' for a

sustainable future. This is an approach that I have adopted in my teaching practice; ESD is about considering choices based on what we value and the exploration of potentially conflicting worldviews. Again, as in my introduction and section 2.2, I acknowledge that the impacts of values are contested and agree that it should be questioned to what extent values come from within the person or from the environment. These questions link directly to differences in opinion about to what extent one can teach the learner something new: at one end of the spectrum the view of a student as an empty vessel (totally shapeable by external factors) and at the other end the view of the student as a knowledgeable and creative being (self-determined) who only needs a little help to unlock latent ability. As Allan Bloom points out, 'education in our times must try to find whatever there is in students that might yearn for completion, and to reconstruct the learning that would enable them autonomously to seek that completion' (1987:63). It needs to be noted that Bloom's ascertainment is of course a value statement too. However, no matter which position is taken on the role of values and the scale of the perceived impact, I agree with education developers Harland and Pickering that there is a need to pay more attention to the role of values. In their publication on values in HE, they call for better understanding of the role of values, so that 'we can start to work out the purpose of education' (2010:381). Besides understanding the role of values as perceived in TE, it is also important to understand the role of the educator in the transmission of values, which will be discussed below.

2.6 Impact of educators' personal values

Educators are key influencers in the ecology of change. They play an important role in the transmission of values as role models in 'the area of attitudinal forming' (Klaassen, 2012:24) and they have the power to 'hook' students into engagement with sustainability issues (Sjerps-Jones, 2007). So it is important that educators recognise their own values and be aware how they may influence their students and colleagues. A reflective educational practitioner will endeavor to continually reflect on this (Marshall, 2001).

As educator I have also examined how my own values have motivated me to take an interest in ESD (Sjerps-Jones, 2007); they chime with Ikeda's view (2014) that there is a need to unlock personal capacities for the benefit of the

individual and the good of the wider society upon which the individual depends. This principle invites citizens to play an active role in influencing organisations and governments positively. This also applies to TE; ESD cannot be effectively adopted without educator, student and the institution taking responsibility for the curriculum.

I further agree with Ikeda (1988) that the many challenging environmental and social issues could provide an opportunity to build a different kind of *happier* society as humanity will be forced to review its current practices if it wants to safeguard a reasonable quality of life for future generations, a society that empowers the individual and that is mindful of the needs of all living beings. This is not dissimilar from 'resilience thinking' that is associated with the grassroots transition movement, an approach that 'emphasizes the capacity for renewal, reorganization, and development, where disturbance presents an opportunity for innovation (O'Brien et al, 2009: 2).

This approach is reflected in my *co-operative inquiry* approach to research as it seeks to empower all participants, not just the researcher (Reason, 2003). My first piece of research relating to ESD (2007) involved students as co-researchers rather than objects, an approach that I have adopted since. Like Dewey (1897), Makeguchi (2002) and Freire (1972) I work under the assumption that mutual respect between educators and students is a prerequisite for quality education.

Having discussed the role of values within TE institutions in relation to SD and ESD, it is also important to get an understanding of how external contexts and drivers influence the adaptation of ESD. The next section will discuss the dynamics between top down and bottom up approaches and to what extent policies, frameworks and stakeholders in TE are supporting the adaptation of ESD.

3| Global and local landscapes – contexts and drivers for embedding ESD

> 'Space technology has made it possible for our generation to see Earth as a whole, opening a new chapter in the human history. This new and unique "sense of the whole" is increasingly generating a corresponding

responsibility to manage our operations in such a way that the parts may operate in the service of the whole, the way nature does, and to continuously acknowledge that we are indeed part of a "living whole".' (Brown, 1998:54).

The efforts of realigning HE with SD cannot be seen in the context of policy and governance in the UK alone. Not only are UK Universities operating in an international landscape through research collaborations and student mobility, UK policy is also influenced by European and other international agreements on SD that our past governments have either endorsed or are drawing guidance from. Just like in SD itself, understanding both a global and local perspectives are key in ESD (Sjerps-Jones, 2011). As mentioned above, the United Nations have played an important role in initiating international agreements to tackle sustainability issues, often out of necessity, because most issues cross the boundaries of countries and regions and require collaborative approaches to find solutions.

Following the UN Conference on the Human Environment ('Stockholm Conference') in 1972 and the Brundtland Commission in 1987, the UN set out to negotiate agreements on environmental issues through a series of Earth Summits. The first conference in 1992 firmly put the notion of Sustainable Development on the agenda and agreed on actions that were articulated in 'Agenda 21'. At the second Earth Summit in Johannesburg the idea to coordinate and promote ESD was 'recommended' amongst other actions (UNESCO, 2014). Following this summit, the UN agreed on a decade for ESD (UN Assembly Resolution 59/237, 2004) and 'Member States thus committed themselves to intensified efforts to integrate the principles, values and practices of sustainable development into education and learning' (UNESCO, 2009). The UN Educational, Scientific and Cultural Organisation (UNESCO) was appointed as the lead agent to deliver the Decade for ESD 2005-2014 (DESD) with the aims to 'include key sustainable development issues into teaching and learning; for example, climate change, disaster risk reduction, biodiversity, poverty reduction, and sustainable consumption. It also requires participatory teaching and learning methods that motivate and empower learners to change their behaviour and take action for sustainable development' (UNESCO, n.d.a). The dynamics between *top down* and *bottom up* initiatives during the Decade will be described below.

3.1 Top down and bottom up

In the following years, more initiatives were instigated at top level (governmental) and also at grass roots level engagement, and activities increased. Commitments to 'promote education and public awareness of sustainable development' increased at the EU level (Council of European Union 2006:5) and also in the UK, as evident in the Government's 2005 'Securing the Future' strategy for SD that included 'new commitments to support education and training in sustainable development' (HM Government 2005:6). The now redundant Sustainable Development Commission also made recommendations (SDC, 2006). As far as the TE sector was concerned both the Learning and Skills Council (LSC) and Higher Education Funding Councils in the UK were supportive of SD in the context of Education through their strategic frame works. The Higher Education Funding Council for England (HEFCE), for example, explicitly supported ESD in its strategy and asked HEIs to promote sustainability 'through the skills and knowledge that its graduates learn and put into practice, and through its own strategies and operations' (HEFCE, 2005b). This certainly helped the practitioners on the ground who received not only more funding for research and developmental projects, but also felt vindicated and supported by the leadership at the highest level. Some direct funding from HEFCE was allocated to a number of Centres for Excellence in Teaching and Learning (CETL). My own initial research was conducted at one of these CETLs: the Centre for Sustainable Futures (CSF) at the University of Plymouth. At the same time the Higher Education Academy started to promote ESD through their Subject Centres. Many of these had dedicated ESD strands which led to the development of some excellent discipline specific resources that were widely disseminated. In 2010, the Subject Centres were abolished, but ESD remained an important cross cutting theme at the Academy (HEA, 2014).

The CSF focused on transforming the university 'from an institution characterised by significant areas of excellence in Education for Sustainable Development to an institution modeling university-wide excellence and, hence, able to make a major contribution to ESD regionally, nationally and internationally' (Dyer and Selby 2004:1).

The UoP is not alone in its ambition to influence the wider TE community. In practice there is an ongoing exchange of ideas between practitioners on the ground, TE institutions, state actors such as HEFCE, governmental departments and international bodies such as UNESCO. National and international bodies often draw upon expertise from academics to shape guidelines or write reports. Examples of this kind of dynamic interactions are numerous as evident in publications of for example Martin (UNESCO, 2013; HEA/QAA, 2014), Sjerps-Jones (EAUC, 2012; HEA/QAA, 2014), Sterling (HEA, 2012; UNESCO, 2013; WWF, 2005) and Tilbury (HEA/QAA, 2014; UNESCO, 20011a, 2011b).

3.2 Including more stakeholders

Relatively new influential players in this dynamic landscape are the business community and students. Although businesses can have a negative influence on education through the promotion of neo-liberal market economy as mentioned above, at the same time some businesses are ahead, in the adoption of sustainability, compared with the TE sector and are pushing for a reform of business education to match their expectations of the next generation of business graduates. This was in particular evident at the last Earth Summit in Rio de Janeiro in 2012, which had an explicit 'Green Economy' (UNCSD, 2012) theme. Some SD campaigners and NGOs fiercely contest the principle of a 'Green Economy', because the concept sits within the capitalistic cannon of economic growth. They argued that what is really needed is 'nothing less than a different concept of socio-economic progress' (Bina 2013:1042). However, other sustainability minded NGOs see it as a vital steppingstone in the transition to an environmentally sustainable and fair economy (UNEP, 2011; GRLI, 2014; PRME, 2014; Ellen MacArthur Foundation, 2013).

It is interesting to find that while amongst ESD campaigners, business involvement is met by skepticism and caution, at the same time, the conservative business education league table EQUIS (European Foundation for Management Development, 2014) has taken an important initiative for ESD. It has started to measure the ethical performance (including through education) and 'global responsibility' of business schools. This is happening under the influence of trailblazing business education initiatives such as PRME and GRLI.

The latter aims to develop **"responsible leaders"** and "reframe the purpose of management education" (GRLI, 2014). The organisation played an important role at the Rio+20 Summit and launched the 50plus20 initiative together with the World Business School Council of Sustainable Business (WBSCSB and the Principles of Responsible Management Education (PRME). The initiative aims to enable business to become more 'responsible' (50plus2, 2014). PRME offers a practical 'United Nations-supported framework for Higher Education Institutions (HEIs), and especially management and business programmes, to embed corporate sustainability in education, research, and campus practices' (PRME, 2014). More locally in the UK, the Ellen McArthur Foundation is driving reform of business education through the promotion of a 'circular economy' that aims to cut out waste, develop a low carbon strategy and systems thinking (Ellen McArthur Foundation, 2013). New approaches in Business Education are becoming more high profile with a few innovative flagship MBA programmes on offer; notably the 'Circular Economy MBA' at Bradford University and the 'One Planet MBA' at the University of Exeter.

Ironically, the latest arrivals in this landscape are students themselves. Whilst they should have been central in the SD process from the start (as the future is theirs) it is only over the past years that as active stakeholders their influence is growing. At an international level this was evident in the increased activism of Major Group 'Children and Youth', (one of 9 groups representing civil society in the UN process of SD), most representatives in this group were students. The group organised their own conferences, the Tunza Youth Conference in Bandung Indonesia (UNEP, 2011) and the 'Youth Blast' (UN, 2012) ahead of Rio+20. At last, the 1.8 billion youth and adolescents worldwide (United Nations Population Fund, 2014) have a stronger input into the development of the SDGs (UN WorldWeWant2015.org, 2014). At a national level the National Union of Students (NUS) and campaigning student network People & Planet (P&P) are coordinating the student demand for ESD. P&P publishes universities' sustainability performances in an annual league table (P&P, 2014) that is published in the Guardian (Guardian, 2013). The first Green League was compiled in 2007, having met initial resistance from universities to share information about their sustainability performance, most universities now collaborate with P&P. The NUS, in collaboration with the HEA, is using its own

research amongst students to demonstrate that students expect to learn about SD. The percentage of students who are expecting HEIs to take action regarding SD is remaining consistent over the past years. The HEA/NUS 'Student attitudes towards and skills for sustainable development' research highlights that '80% of students surveyed believe sustainable development should be actively promoted and incorporated by UK universities and it shows for the third year in a row 'that interest in sustainable development remains strong among students throughout their university careers and with the introduction of increased tuition fees' (HEA, 2013). Moreover, the NUS is using the increase in tuition fees to demand 'quality education' and it is quoting back the language used in the Browne report: if the students 'pay more' they want to 'get more' teaching that is of value to them (HM Government, 2010:4). 'Student expectations' are changing and this offers a route for student organisations to push for embedding of ESD in the curriculum (NUS, 2014). As currently students seem to be more engaged with SD than the leadership at the majority of HEIs, HEFCE has now taken the decision to empower students and give them direct funding (administered via the NUS) to make their institutions more sustainable, rather than giving funding to the institutions. According to HEFCE (2013) 'the funding will help students to engage with their universities and colleges on sustainable development, and to ensure that sustainability remains a priority with institutions'.

3.3 Developing appropriate approaches to propagate ESD (a personal case study)

Within the context of ESD research there is a tradition of adopting action research (specifically co-operative inquiry) approaches as it empowers all participants and helps them find their voice (Marshall in Reason and Bradbury, 2001; Rahman, 2003; Reason, 2003; Marshall, Coleman and Reason, 2011; White, 2013). My own development as practitioner is an example of how ESD approaches have been developed, interconnected, cross-fertilised and synchronized with others over the years. As mentioned above (2.6) this has been reflected in my research trajectory and therefore it is necessary to understand my role as action researcher and practitioner as described below.

My development as an action researcher in ESD started with a research fellowship at the CSF. Their *whole institutional* approach to sustainability links the areas of campus, curriculum, communities and culture together in a comprehensive holistic approach. The strategy included the involvement of 18 South West FE colleges that are associated with the University of Plymouth. At the time, I was working at one of these colleges as a design lecturer with a keen interest in the promotion of 'Duurzaam Design' (sustainable design) and ESD (Sjerps-Jones, 2007). The college had just launched a brand new educational centre for sustainable construction skills development, the Genesis Project. However, there was a strange disconnect between this inspirational sustainable initiative and teaching and learning across the college. This interesting occurrence instigated my research into student engagement with sustainability issues (Sjerps-Jones, 2007).

The CSF's *bottom up* approach to ESD aligned well with other SD grass roots movements that 'self-organise' such as the Network (Transition Network, 2013) and therefore it was not surprising that it went through a lengthy consultation process to draft a sustainability strategy and made sure that the associated FE colleges were also consulted. I was asked to set up a community of practice for lecturers at FE colleges to ensure further exchanges of good practice. Because the colleges are dispersed throughout the Southwest, this was mainly done through an online ESD community. My initial exploratory research uncovered that early adopters of ESD often felt isolated in the remote colleges and had a need to connect to a larger network of ESD practitioners. Sustainability minded students were in the same position, which led to the collaborative design of the virtual 'Student Green House' (Sjerps-jones, 2007b), a website on which students could share their projects, hold discussions and connect with employers (this was before Facebook was widely used). The website also allowed the sharing of pro-sustainability memes (as described in section 1.2.), e.g. sharing hyperlinks to news stories on sustainability etc., between the students and lecturers at different institutions. This helped to establish common ground between people with similar worldviews, improve the sense of togetherness and provide inspiration to take action. Other ESD experts have also found that the application of dialogic interaction, as promoted in this educational intervention, is an important approach to stimulate 'transformative'

learning (Wals and Schwarzin, 2012:16).

As noted before, the CSF was not the only hotbed for ESD during the first years of the UNDESD as evidenced in UNESCO's report on activities and achievements (Tilbury, 2011) and another report focusing on ESD in the UK (UK National Commission for UNESCO, 2013). This report concluded that there were very different paces of change in England, Northern Ireland, Scotland, and Wales, nevertheless, impact was recorded across all nations.

A further major breakthrough came in 2012, at the aforementioned World Conference on Sustainable Development (WCSD) Rio+20. Leading up to the conference many academics and NGOs with a stake in ESD could now draw upon a network of practitioners and academics that had expanded since the start of the Decade. This network of ESD experts collaborated to inform the draft document that was to be finalysed at the summit. In particular Association for the Advancement of Sustainability in Higher Education (AASHE), Australasian Campuses Towards Sustainability (ACTS), the Copernicus Alliance and the Environmental Association for Universities and Colleges (EAUC) were instrumental in coordinating and influencing the responses. This international collaboration not only led to the 'Higher Education Sustainability Initiative for Rio+20' and the 'Rio+20 Peoples' Sustainability Treaty on Higher Education' (IUCN, 2012), it also led to a strong commitment to ESD in the conference outcome document the Future We Want (FWW) (Rowland et al., 2013). Clauses 229-235 are supportive of ESD and in particular 230-234 (United Nations, 2012).

Despite these commitments, in the UK, little action was taken to translate the commitments in the FWW into action after the Rio Summit. With the think piece 'The UK Future of Education for Sustainable Development – eight responsibilities for education?' Kershaw and I tried to provoke a response from stakeholders. The paper aimed to 'instigate an open discussion about how this crucial agenda can be taken forward and to investigate how Government can work with NGO's, civil society and the private sector to accelerate constructive change for sustainability through formal, informal and non- formal education' (Sjerps-Jones and Kershaw, 2012:1). The paper includes identified eight key areas that require action and instigated a national dialogue with stakeholders

ranging from educational actors (HEA, HEFCW), unions, student bodies, religious -, social - and environmental NGOs and Members of Parliament. Eventually the dialogue was captured in a Manifesto (Sjerps-Jones, 2013) and was launched in Westminster in December 2013. It is unclear how this new collaboration is going to unfold, but the fact that there is now a richer and wider network of proactive organisations and individuals will make the movement for the realignment of education with SD more resilient.

Having discussed the contexts and interactions at global and local level in shaping the agenda for the adaptation of ESD, the next section will focus on the role of the learning environment and demonstrate how appropriate learning environments could contribute to the adoption of ESD.

4 | Habitats - The Institutional Learning Environment

> 'At the most fundamental level of life itself, there is no separation between ourselves and the environment' (Allwright, 1998:52).

The role of an affirming and stimulating learning environment is vital for the delivery of ESD. In education theory, the importance of affirming, empowering, motivational learning environments in the learning process is widely acknowledged (Nichols, 2006), but in the context of the paradigm of ESD, the learning environment, the habitat of students, lecturers and other professional staff, is even more important. This is because the employment of experiential learning is an important didactical tool in ESD approaches. Definitions and interpretations of 'experiential learning' vary widely (Moon, 2004:129); however in this context I am referring to Hutton's description that it is learning that is 'rooted in our doing and our experience. It is learning which illuminates that experience and provides direction for the making of judgments as a guide to choice and action' (Hutton, 1989 in Moon, 2004:108). In my paper about student engagement with sustainability issues (Sjerps-Jones, 2007), I highlighted the crucial role the physical and social environment play for the learner. The formal and informal learning environments have a pivotal role in the engagement dynamics (figure 1). This is further explored in my papers on using the 'campus as a living laboratory' (Sjerps-Jones and Tyler, 2011; Baker,

Betts and Sjerps-Jones 2011; Sjerps-Jones, 2012). It is important that students are reassured that the learning institution is putting theory into practice when it comes to sustainability focused management of campus and operations (e.g. energy efficiency, waste management, biodiversity), otherwise the theoretical learning through the taught programmes will get undermined. Learning through 'osmoses' is a vital element of the overall learning experience (Sjerps-Jones, 2007). Moreover, using the 'campus as a living laboratory' offers students opportunities to get hands on, for example by involving students in 'biodiversity enhancement' projects (Sjerps-Jones and Tyler, 2011; Baker, Betts and Sjerps-Jones 2011), energy audits or sustainability research projects. This kind of experiential learning is more transformative in relation to knowledge and behaviours than the conventional learning in lecture theatres. The transformative element is important, in particular because the paradigm of ESD is values based (see section 2) and aspires that students adopt the 'knowledge, skills and attitudes' for sustainability (Ikeda, 2003). The importance of transformative learning in relation to ESD is well established (Jickling and Wals, 2012; Sterling, 2011; Tilbury et al., 2004; Wals and Cocoran, 2006). Stephen Sterling's description of transformative learning is closest to how I would define it:

> 'It refers essentially to a qualitative shift in perception and meaning making on the part of the learner in a particular learning experience such that the learner questions or reframes his/her assumptions or habits of thought.' (Sterling 2011:19).

The questioning and reframing is important in relation to behaviour change (although behaviour change is not the sole aim of transformative learning).

In context of the ecology perspective, one could argue that students who have internalised newly acquired sustainable behaviours through ESD with the support of a motivational learning environment, will become more confident and therefore more powerful distributers of pro-sustainability *memes* in society.
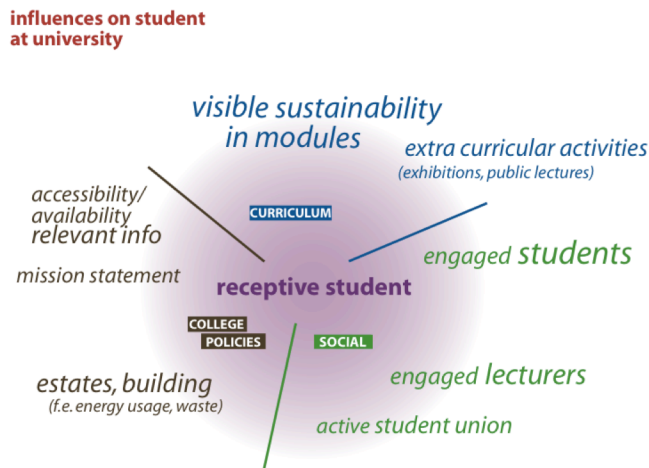
Figure 1, Influences on students at university, Sjerps-Jones, 2007

Having highlighted the important relationship between the learning environment and adaptation of ESD, the next section will evidence the dynamics and interactions between different stakeholders and communities, including the different academic territories, relating to institutional change.

5 | **Populations and Territories** - Dynamic Communities

> 'Few development practitioners are currently prepared to design and implement integrated solutions that would promote sustainable development. Even within development-related academic programs, individual disciplines tend to value inward-looking specialization rather than outward-looking problem solving, often discouraging practical connections across communities of expertise. Trained within the current system, professionals rarely have the background necessary to conduct effective cross-disciplinary policy management or problem solving' (International Commission on Education for Sustainable Development Practice, 2008:14)

Although experts point out that SD needs cross disciplinary approaches to tackle complex sustainability challenges (Sterling *et al.,* n.d.a), most TE institutions are not set up to support interdisciplinary and multi-disciplinary learning. ESD experts recognise that is an obstacle to embedding ESD into the curriculum (Tilbury, 2011a; Blewitt and Cullingford, 2004; Sterling *et al.* 2013; Stibbe et al., 2009) another challenge is to communicate the meaning of SD in a multi-discipline environment. Each discipline family has its own language, which does not necessary chime with the language of SD or lead to a common

understanding. There are many ESD practitioners and academics who are 'highly critical' of current understandings of SD and ESD (Wade, 2014). But in my view, it is important to accept the multiple interpretations and descriptions as part of the ecology of change. In fact, it could be useful to embrace the diversity and richness of language around sustainability in an attempt to come to a better understanding of how we interact with it as individuals and as society. (Stibbe, 2007:75, Robinson, 2004:38). Schumacher College lecturer Philip Franses shines a light on this from an ecological perspective:

> 'The hypothesis is that ambiguity creates channels for information that instead of residing passively in the physical system are explored actively for their ability to be integrated into coherent meaning' (Franses, 2013:143).

This suggests that ambiguity in concepts could stimulate more active dialogue as both 'speaker' and 'hearer' need to make an effort to engage (Franses, 2013:144).

Despite obvious obstacles to embed sustainability in the disciplines, there are also very good examples of how these obstacles can be tackled in 'active dialogue'. At the stage of engaging newcomers to ESD (e.g. academics who have not given ESD any consideration yet), this can be done through replacing the use of general SD language with discipline specific descriptions (Sjerps-Jones, 2012b) that resonate with disciplinary teaching and research themes. It can also be done through the instigation of co-curricular or extra-curricular interdisciplinary projects, that help overcome territorial academic barriers, again in dialogue through co-creation processes (Sjerps-Jones, 2012b; Reason, 2003; Marshall *et al*, 2011). As demonstrated in the 'Big Dilemmas' project (Sjerps-Jones 2012; Burkil, Rodway-Dyer and Sjerps-Jones 2012) a focus on current sustainability issues in the local vicinity to the place of study helped enormously to capture the keen interest of both students and academics across multiple disciplines (University of Exeter, 2012). On the basis of the success of the Big Dilemmas and the recognition of the value of 'interdisciplinarity' in education, the project has now been up-scaled across the University under the name Grand Challenges (Kay, 2013). Students and researchers are not the only ones benefiting from this kind of education. Community stakeholders also benefit from the interaction with students and academics in finding ways

forward in the difficult sustainability issues they are trying to tackle. A good example is the anti 'conflict minerals' campaigning group Congo Calling that has not only gained in knowledge regarding the mining industry but also harnessed strong support from the student body (Congo Calling, 2014). This has eventually led to changing the University's procurement strategy, as the students demanded a 'policy on "conflict minerals"' (University of Exeter, 2014). Arguably, what has started as a co-curricular project, has breached the boundaries of formal education and has spilled over into informal and 'life-long learning' that plays such an important role in 'learning for the future' (Blewitt, 2004:38). In the case of Congo Calling (whose founder Bandi Mumbi learnt a lot about the workings of the mining industry and supply chain from the University's academics) and the University's procurement team (who learnt how the use of certain rare earth minerals could contribute to violent conflict). This is a good example of how clause 234 (see above) in the FWW (2012) can translate in practice. It further demonstrates how policy and practice constantly influence and reinforce each other in a complex ecology/network of policy makers, researchers, teachers and activists. The case study of the Big Dilemmas project now informs the Quality Assurance Agency's Guidelines on ESD (QAA, 2014). In previous sections I have highlighted the importance of teaching approaches, the learning environment and the many forms of education that are included in ESD, e.g. formal, informal, co-curricular, extra-curricular and life-long learning. In this last section, I will focus on the relationship between the quality of education and ESD and how adaptation of ESD relates to general quality enhancement of teaching and learning.

6 | Propagating and Nurturing: Capacity and Quality

> 'Biologically speaking, learning is to do with survival. The organism that is unable to adapt to external change perishes, and all organisms 'learn' to some degree and some sense of the term' (Sterling, 2011:18).

Quality of education and ESD are intrinsically interconnected. Without investment into the quality and capacity of the delivery of ESD there will be no sound basis to upscale ESD in HE. Also, quality metrics can be useful when trying to measure progress and the quality of the outcomes. Education can only

be called 'quality' education when its aims are achieved. In the context of sustainable development, the aim would broadly be to equip the student with the necessary values, skills and attitudes that enhance opportunities to make a living throughout life, contribute to just society, care for the environment which we depend on and also to develop as a resilient and empowered individual who has the ability to question a status quo. 'Indeed a quality education should facilitate and promote human relationships characterised by justice, peace and negotiated mutual interests which lead to greater equity, respect and understanding. It is these qualities which underpin both sustainable development and a quality education' (Martin et al., 2009:2).

One of the key questions is, as posed by Martin and colleagues, whether ESD contributes 'to a transformative learning experience and thus better performance by learners?' (Martin et al., 2009:1).

Even if a university commits to embedding ESD across the curriculum, as the Universities of Exeter, Gloucestershire, Plymouth and others have publically committed to in the 'Higher Education Sustainability Initiative for Rio+20' (Sustainable Development Knowledge Platform, 2012) have done, it does not necessarily guarantee quality of the provision. There is a need to 'validate' embedding of ESD 'before any students have embarked on the programme' (Morris and Mason O'Connor, 2007:283). However, validation is not the only issue. The biggest challenge to improve the quality of ESD provision remains teacher training since teachers play such an 'important role' in the learning process (UNESCO, 2012).

In 2007, my colleagues and I stressed in our paper 'Sustainability and Teacher Education', that teachers need to play their part (Martin, Sjerps-Jones and Summers, 2007). However, ESD is still rarely included in post-graduate teaching courses and mandatory CPD courses. Much of the formal professional up-skilling in TE is delivered through HEA workshops, but mostly it is undertaken voluntarily and self-organised by ESD practitioners. Around the same time, other colleagues highlighted practical challenges in this area (Ferreira *et al*, 2007) and in particular when engaging in the shift from the 'cognitive' (education about sustainability) to 'affective' educational approaches (education about sustainability) (Shephard, 2008:90). My research into student

engagement revealed that lecturers are an important influencing factor to students (Sjerps-Jones, 2007). Lecturers have the ability to play an important role in the transmission of pro-sustainability 'memes'. As discussed in section 1.2, 'fecundity' is important in the transmission of 'memes', the 'acceptability of a new idea' will contribute to the productiveness. (Dawkins, 2006:194). Therefore, lecturers could, knowingly or unknowingly, make pro-sustainability ideas more acceptable to their students, in particular when applying affective teaching approaches.

The overall knowledge of sustainability issues will no doubt increase over the coming years. As more academics will conduct research in this area, more knowledge will be transferred to learners. This will have some influence on the cognitive aspect of ESD e.g. *Education about Sustainability*. However, this does not mean that the teaching approaches that are needed for effective ESD, *Education for Sustainability*, will be adopted too. A shift in teaching approaches can only be fully achieved through effective teaching training as promoted by the UN at the Rio+20 Summit:

> 'We therefore resolve to improve the capacity of our education systems to prepare people to pursue sustainable development, including through enhanced teacher training' (FWW, 2012: clause 230).

A few years earlier the TE sector attempted to include ESD in the HEA's UK Professional Standards Framework (HEA, 2011) for lecturers, which although initially included was removed after a nationwide consultation. If it had been included it would have provided an important stimulus to include ESD awareness in the training of TE lecturers.

While teaching training in ESD is currently lacking, some change may be instigated through the guidelines provided by the QAA (2013). The QAA is the watchdog of quality in TE 'so that students have the best possible learning experience'. It is making here a statement that ESD is part of having 'the best possible learning experience' (QAA, 2014). Again, this engagement of the QAA is the result of dynamic interactions between ESD researchers, lecturers and policy makers. This initiative by the QAA was a direct result from the work undertaken in the HEFCE funded project 'Leading curriculum change for sustainability: strategic approaches to quality enhancement'. The project

focused on 'the interface between ESD and the processes for quality enhancement and assurance in Higher Education' (University of Gloucestershire, 2012). I led one of the projects conducted at five universities, which led to significant changes at Exeter's Business School. The QAA guidelines will invite academic developers to think about up-scaling of ESD expertise amongst teaching staff and give legitimacy to those trailblazing academic developers who are trying to include ESD in teacher training activities without the support of senior management. This will also have consequences for the institution as a whole and institutional leadership, as argued by the project coordinators Ryan and Tilbury (2012):

> 'As Higher Education develops responses to these quality agendas, the approaches needed are likely to involve effective connections to be made between corporate institutional planning and academic development agendas. This inevitably raises issues in terms of leadership and management, as the tensions at these intersections are explored, in the effort to ensure quality whilst also protecting innovation.'

This brings the focus back to the top of the perceived hierarchy and it will be interesting to find out how the balance between 'top down' and 'bottom up' approaches develop further.

7 | Discussion: An Ecology of Change

> 'We can never know the immediate, let alone the long-term outcomes of our choices. We do not know whether the current wave of pro-environment behaviour will stabilise the planetary ecology or whether we have passed several tipping points. But we are here participating in the drama and we have found our part in the action, whatever the uncertainty. We hope that we have shown that seeing this action as a process of ongoing inquiry can be a practical form of taking leadership for sustainability' (Marshall, Coleman and Reason, 2011:237).

My review of past and current developments in the realignment of TE with SD has highlighted the complexity of the change process at educational institutions in TE and the influences on that process at local, national and international level. I have identified the tensions in TE created by conflicting underpinning values in the education system and demonstrated that it is important to

appreciate and acknowledge this complexity and values conflict. This should get more attention in further ESD research as well as in institutional change agendas.

I have established that the spreading of pro-sustainability memes could play an important role in this system. It is important to understand the workings of (un)supportive values relating to SD; how they link to larger value systems, how they influence educational institutions, the contents of the curriculum and how it is taught. It is also vital to recognise the important role that educators and policy makers have in spreading those values. There is no evidence of a clear shift of values in the TE sector, but my research has demonstrated that at least it is becoming more acceptable to challenge unsustainable paradigms in education and to find innovative ways to bring discussions around values and citizenship into the teaching and learning.

In section 3, I have highlighted how stakeholders in this 'ecosystem' have their own ways of influencing change, whether it is a student, lecturer, policy-maker or community member. The overall landscape in TE is complex. Decisions at international level could directly influence the practitioner in a local environment, with or without the intervention of national policies, and practitioners on the ground can directly influence International agreement as demonstrated in the case of the drafting of FWW agreement at the Rio+20 Earth Summit. Sustainability research would benefit from the acknowledgement that researchers are also part of this 'ecosystem' and influence it, intentionally or unintentionally. As I have demonstrated in the case study of my own practice over the past years, research based on co-operative inquiry can provide invaluable insights as well as immediate benefits for individuals and institutions. Moreover, sustainability research will benefit in richness if the notion of empowerment of stakeholders at all levels is mirrored in research through the adaptation of co-operative inquiry approaches.

I established that attention to the local learning environment is as crucial as influencing (inter)national policy. As explained in section 4, utilising the campus as a 'Living Laboratory' for sustainability can help create a fertile environment to propagate new insights and behaviours for sustainability and offer opportunities

for experiential learning. Furthermore, it would also give university policies and sustainability theory credibility.

I explored the dynamics and interactions of different stakeholders and communities in section 5 and demonstrated that the realignment of TE with SD is constantly changing and can't be seen as a linear or hierarchical process. The examples of the increasing influence of the student voice and engaged business leaders are testimony of unexpected power shifts. Like ecosystems, the TE sector also has its 'tipping points'; the disruption of established 'dynamics in networks' (Capra, 2013:128) could be a way to instigate change. We should not be surprised if this seemingly slow evolving transformation is approaching the moment of acceleration and tipping. I have noted that catalyst interventions such as the high profile CETL initiatives can help as a disrupter in HEI's unsustainable cultures and so do some innovative curricular and co-curricular interventions such as the One Planet MBA and the Big Dilemmas project. The later example in particular shows how 'tribal' disciplinary approaches can be tackled in an elegant manner. I have evidenced that it is expedient to apply insights from the natural sciences to ESD research, in particular in context of understanding change processes. Further sustainability research would benefit from adopting a similar approach.

In section 6, I highlighted that the relationship between quality and ESD needs more attention in order to propagate ESD. In particular nurturing educators through appropriate teacher training and professional development is key to quality enhancement of ESD provision. There is also a case to be made to use ESD as a tool to improve the overall quality of TE. It is not clear whether there has been a permanent shift in the TE sector regarding the acceptance of ESD, however I have identified some indicators of change; the incorporation of ESD in business education frameworks and the forthcoming ESD guidance for HE by the QAA in collaboration with the HEA are relatively new developments. The involvement of the QAA is in particular important as it recognises the relationship between Quality Education and ESD. This will help make the case for further teacher training in this field. It is evident that there is a need to nurture the educators who are playing such a pivotal role in this process towards sustainable futures and this should be more recognised in ESD research.

8 | Conclusion: A glance into the future

I have evidenced that there is some progress with the adaptation of ESD across TE in the UK since the start of the UNDESD. However, if education is to play a more prominent role in the process of SD, continuous efforts are needed to realign TE with SD. Further action research based on co-operative inquiry approaches, could play an important role in mainstreaming ESD, in particularly because it is important to understand the complexity of the ecology of change from the inside out as well as the outside in. Research would benefit from the appreciation that taking one approach to understanding change for sustainability (e.g. emphasis on the responsibility of the individual vs social context) will not provide a full picture; individuals should be understood as 'co-members' of an enterprise' (Orr, 2004:xiii) or organisms in a complex ecology. An inclusive approach can help the sector explore contentious issues around the values of ESD further and stimulate dialogue about the, often covert, values of the TE system.

The movement for ESD has gained traction at both policy and grassroots level and the network of ESD practitioners has grown larger, more interconnected and more diverse, including businesses, NGOs and students. There is also significant change in the area of quality enhancement of education as demonstrated by the benchmarking activities of Equis, PRME, QAA and HEA. A more interconnected and diverse network is certainly a more resilient network, but the complexity of this ecology makes change slow. This could be seen as an unwelcome obstacle to the makeover of the unsustainable educational system that is urgently needed. At the other hand, the complexity means that change is not depending on only a few players in the network.

There are also opportunities. Unexpected power shifts can be capitalised on and purposeful interventions can be employed to shake the system up. The publication of the QAA/HEA guidance for ESD (2014) could be such a catalyst to take the realignment of TE with SD aims to the next phase. The influence of the FWW agreement (2012), the UK Manifesto for ESD (2013), the increasing

influence of students and the drive of progressive Business Education are also signs of changing values that may point towards a paradigm shift.

Harriet Sjerps, September 2014

Rationale Portfolio of Publications (2006-2014)

The publications are listed in chronological order (most recent first) and authors are listed in alphabetical order

Sjerps-Jones, H. (2014) *A Quick Guide to Education for Sustainability*, [online] University of Exeter. Available at
http://www.exeter.ac.uk/sustainability/education/quickguide/.

This publication was one of the outcomes of an extensive research project funded by HEFCE LGM: Leading Curriculum Change for Sustainability – Strategic Approaches to Quality Enhancement*. The project involved collaboration among five partner institutions: Aston University, University of Brighton, University of Exeter (UoE), University of Gloucestershire and Oxford Brookes University. I led the project at the UoE and was responsible for writing all outputs. The aim was to produce strategic guidance for universities and HE stakeholders, to drive ESD innovation and leadership for sustainability in HE. The project tackled this agenda at three levels:*

1. *Sectoral – building capacity and involvement for sustainability education with key sector agencies such as the Quality Assurance Agency and Higher Education Academy.*
2. *Institutional – supporting changes to academic practice and curriculum development within the five partner institutions.*
3. *Individual – engaging academic leaders and developers across the sector and experts working on this agenda globally.*

The guide was the result of one of the interventions (see 2. above) that I instigated in agreement with the academic developers and academics who were participating in the ongoing action research project (over 2 years), which included two workshops with academics, students and employers. One idea that was proposed at the workshop was to align the language of ESD with discipline specific language. I took this idea and researched how different disciplines communicate sustainability issues. I did this through analysing HEA subject forum publications and the subject pages on the UoE website. This research informed a draft which was subsequently reviewed by UoE academics and students from across all disciplines.

This publication is included in the portfolio as the Guide is an accumulation of insights in ESD gained through continuous action research and literature review as part of this impactful research project (See p33-34). It is an example of how ESD could be successfully embedded in an academic context. It was published on the UoE website to provide practical guidance for academics on ESD. As the website is publically accessible, it further provides guidance for academics and TE managers in the UK.

Sjerps-Jones, H. (2013) *Enabling the future we want: Education for Sustainable Development in the UK,* Cheltenham, EAUC.

This publication was the outcome of a piece of action research in collaboration with the Environmental Association for Universities and Colleges (EAUC). The aim was to investigate how international agreements for ESD as recorded in the UN Future We Want Document (Outcome of Earth Summit Rio+20) could be implemented at UK level. To that effect I reviewed existing literature and policy (see also below: The UK Future of Education for Sustainable Development – eight responsibilities for education?*). On the basis of that review I drafted eight key questions about intentions for implementation of ESD and invited over 50 stakeholders (selected by the EAUC) across the UK to respond. I analysed the responses and presented the key conclusions in the form of a pamphlet, an expedient form of publication to instigate further collaboration and discussion.*
This publication is included in my portfolio as it provides an overview and context of processes at grass-roots and governmental level regarding policy for the implementation of ESD. I sought publication by the EAUC to ensure UK-wide dissemination amongst stakeholders and maximum impact. Their website is a frequently used resource for academics and practitioners at member organisations.

Carteron, J. Denby, L., Klepper, A., Mader, C., Rowland, P., Sjerps-Jones, H., Smith, K. Tilbury, D., (2013) The Future We Want: A Global Expert Discussion on the Future of Rio+20 Efforts on Higher Education, *Sustainability*, 6(1), 42-47.

I was invited to participate in this roundtable discussion as one of the global experts in ESD who had participated in the United Nations Conference on Sustainable Development Rio +20 and as co-organisor of the UN side event 'Aiming higher, unlocking tertiary education's potential to accelerate sustainable development and the transition to a fair and green economy'. The participation in this roundtable discussion amongst academic experts in the field of ESD, demonstrates my ability to apply the practical experience and theoretical knowhow and intellectual insights that I have gained through many years of action research in the field of ESD and highlights the impact of my research at international level
The publication is included in my portfolio as it provides a valuable insight in ESD policy making at international level and the role academics play in that process. The Journal is a highly regarded and influential publication in the field of ESD.

Kershaw, M. and Sjerps-Jones, H. (2012), *The UK Future of Education for Sustainable Development – eight responsibilities for education?* EAUC, [online] Available from: www.eauc.org.uk/fileuploads/riopaper2.pdf.

This publication is the outcome of a collaborative piece of research instigated by the EAUC and the Education Dialogue Group. Following the United Nations Conference on Sustainable Development Rio +20, there was a clear need to identify opportunities and obstacles in the implementation of ESD in tertiary education. The paper aimed to instigate an open discussion about how this crucial agenda could be taken forward and to investigate how Government can work with NGO's, civil society and the private sector to accelerate constructive change for sustainability through formal, informal and non-formal education. My contribution to the paper was as lead-author*; I outlined the concept and approach to the analysis of policy papers. I identified, together with Kershaw, eight key themes with strong educational relevance emerge from the 'Future We Want' (FWW). The key questions identified in this paper informed the publication: Enabling the future we want: Education for Sustainable Development in the UK *(listed above). This publication is included in my portfolio as it provides a clear context of the global influences on policy design regarding ESD and sheds a critical light on existing contentions regarding the implementation of policies for ESD in the UK.*
I have sought publication by the EAUC to ensure UK-wide dissemination amongst stakeholders and instigate discussion. Their website is a frequently used resource for academics and practitioners at member institutions.

Burkill, S., Rodway-Dyer, S. and Sjerps-Jones, H. (2012) Pass Project Report – Big Dilemmas Project, *Programme Assessment Strategies*, HEA, York, Available at http://www.pass.brad.ac.uk/case-studies.php.

This case study forms part of the National Teaching Fellowship Scheme (NTFS) Programme Assessment Strategies (PASS) project. The PASS project aims to identify essential principles of programme-focused assessment (PFA), which can then be used to implement and test the effectiveness of programme assessment strategies. This case study is a contribution to that debate. This case study concentrates on approaches to PFA within the Big Dilemmas Project at the University of Exeter. There was a clear need to explore appropriate assessment methodologies for ESD as the application of problem-based learning and the interdisciplinary nature of ESD projects often fall outside traditional module design; this makes them difficult to assess. The Big Dilemmas Project was launched in 2010 with the aim of creating an interdisciplinary think tank bringing together students, academics and stakeholders to investigate society's sustainability issues. As leader of the Big Dilemmas project I contributed to this piece of research with the outline of rationale, context, co-design of research questions and analyses.
This publication is included in my portfolio as it provides a clear example of ESD in practice and highlights the relationship between formal education and extra-curricular projects and the implications for assessment strategies. As part of a wider research project on assessment

strategies the outcome was presented at the PASS conference in 2013 and published on the coordinating university's website (Bradford).

Sjerps-Jones, H. (2012) Informal learning for Sustainability' In Winter, Dexter and Klaff eds. *Putting the 'S' into ED- Education for Sustainable Development in Education Development,* SEDA (31): 27-29.

This chapter forms part of a specialist SEDA (Staff and Educational Developers Association) publication on ESD. To date, progress in Education for Sustainable Development (ESD) has tended to take place within the formal curriculum but there is increasing recognition of the potential of the informal curriculum to contribute to learning for sustainability. At the time I was one of only a few leading practitioners of ESD in TE exploring this potential. I was invited to contribute to this chapter with a case study based on my action research around the concept of Campus as Living Laboratory. This innovative approach is suitable to facilitate the kind of problem-based and place-based learning that is associated with ESD teaching and learning strategies. Besides writing the case study I have also contributed by reviewing the other case studies included in the chapter and providing the theoretical context that underpins it.

This publication is included in the portfolio as it provides a clear example of ESD in practice and highlights the role of informal education as catalyst for ESD. I welcomed the opportunity to publish with SEDA as it is the most influential network of educational developers in the UK and has a large readership.

Sjerps-Jones, H. (2011) Bringing it home- tackling global challenges in a local context, In Shiel, C, ed, *Education for Sustainable Development: Graduates as Global Citizens - Proceedings of an International Conference Bournemouth*, September 2011, Bournemouth*,* University of Bournemouth.

This conference paper explores the effectiveness of catalyst programmes to instigate changes in the curriculum. The case study described in the paper, the Big Dilemmas Project, was launched in 2010 bringing together students, academics and stakeholders to investigate global sustainability issues in a local context. The action research that informed the paper incorporated active student and staff input (as co-designers of the project) and was in its approach a continuation of previous cooperative inquiry research with students at the University of Plymouth as described in my paper Exploring Effective Ways of Engaging Students with the Sustainability Agenda (below).

This conference paper is included in my portfolio as it provides a clear example of ESD in practice and highlights the importance of extra-curricular projects that highlight both global and local perspectives as catalysts for ESD. The conference was aimed at ESD practitioners and provided an important opportunity for me to present, test and challenge new insights.

Betts C., Sjerps-Jones H., and Baker N. (2011) BioBlitz: a tool for the promotion of entomological science, *Antenna*, 35(3): 102-106.

This article describes the insights derived from student engagement projects involving the UoE biosciences department. The success of the projects (large numbers of participants and significant enduring student interest) was noted by the academic community of entomologists. As the editors were also seeking strategies to upscale citizen science projects, Betts and I were invited to share our case studies in Antenna*. Together with co-author Betts I drafted the outline of the article and I also provided the descriptions and analyses of the case studies. Baker contributed to the article as initial reviewer and advisor to the projects described in the Bioblitz case study.*

This publication is included in my portfolio as it provides a clear example of the development of ESD in practice and highlights the importance of extra-curricular projects and experiential learning as catalyst for ESD. The article in Antenna *sought to inspire and encourage entomologists to share their knowledge in a novel and engaging manner with the general public; thus encouraging pro-environmental behaviours and inspiring a next generation of scientists.*

Tyler C. and Sjerps-Jones, H. (2011) Engaging the local community with biodiversity enhancement at the University of Exeter, University of Exeter. Available at http://www.eauc.org.uk/engaginglocalcommunitieswithbiodiversityen.

Similar to the article described above, this case study describes the insights derived from student engagement projects involving the UoE biosciences department. I was leader of the project described in the case study and was lead author. Tyler provided advice on aspects concerning the biosciences perspective on research impact.

This publication is included in my portfolio as it provides a clear example of ESD in practice and highlights the importance of extra-curricular projects and experiential learning as a catalyst for ESD.
It was published by the EAUC to ensure UK-wide dissemination amongst TE practitioners. Their website is a frequently used resource for academics and practitioners at member institutions.

Sjerps-Jones H. (2009) New Media, an effective tool to engage students with the sustainability agenda*, Networks* (6):10.

This publication is one of the outcomes of the research funded by the Centre for Sustainable Futures (CSF) at the University of Plymouth: Exploring Effective Ways of Engaging Students with the Sustainability Agenda (see full description below). The publication builds on action research projects with design students and focuses in particular on the emerging role of New Media in learning strategies. This is in particular of interest to the subscribers of the HEA's Art,

Design & Media (ADM) subject centre. The paper was written on their invitation. It provided the sector with clear examples of sustainable design education in action.

This publication is included in my portfolio as it provides a clear example of ESD in action and describes innovative approaches to student engagement. It is an example of how my research has contributed to the academic community of practice around learning strategies and ESD.

Jones P, Kagawa, F., Selby, D. and Sjerps-Jones H. (2008*) A Big Hairy Audacious Goal-Marketing university sustainability credentials*, University of Plymouth, Plymouth.

The paper explores the potential recruitment and retention benefits arising from the marketing of the university's sustainability credentials. It attempts this by reviewing academic and professional literature on higher education, sustainability and marketing; by reviewing surveys on whether a university's sustainability credentials matter to prospective students and by reporting on a University of Plymouth small-scale survey. As CSF research fellow at the University of Plymouth I was invited to make a contribution to this paper for two reasons. This piece of research aligned well with my research involving cooperative inquiry projects with students and my extensive knowledge of branding (as design lecturer) was essential to set up appropriate research into branding. My largest contribution to the paper lies in setting up the parameters for the research informing section 4 and 5 and the analyses of Media and Artifact informing section 4 and 5.

This publication is included in my portfolio as it compliments my research into student engagement. It provides insights in to what extent sustainability is mainstreamed at Higher Education institutions projects and how these institutions are attempting to use their sustainability credentials to attract students. The paper has directly informed the UoP sustainability strategy.

Sjerps-Jones, H. (2007) Exploring Effective Ways of Engaging Students with the Sustainability Agenda, In Shiel, C, ed, *Education for Sustainable Development: Graduates as Global Citizens - Proceedings of an International Conference Bournemouth*, Bournemouth*,* University of Bournemouth.

This paper is one of the major outputs of my CSF funded research into student engagement with sustainability issues. The paper describes my action research (cooperative inquiry) projects with students at participating colleges in the South-West. The case studies are placed within the context of emerging insights in the paradigms of ESD at the start of the UN Decade of Education for Sustainability, an analysis of policy for ESD in TE and implications for curriculum development and student engagement. I am sole author of the paper and coordinated all inquiry projects. The conference, aimed at ESD practitioners, offered an excellent opportunity to present my research findings as an emerging researcher.

The paper is included in my portfolio as it provides important new insights in how students can be engaged with sustainability issues. Moreover, it formed the stepping stone for my further research into ESD and general approach to research.

Gray-Donald, J., Sjerps-Jones, H. (2007) Engaging Higher Education Students with Sustainability, *Them & Us:* 12.

This article is the outcome of my initial research into student engagement with sustainability and describes emerging insights. We sought publication in Them & Us *as the publication is aimed at both students and academics at the University of Plymouth. The publication was meant to instigate discussion and generate interest in further participation in my ongoing action research projects. As the lead author* of this paper and leader of the research I have made a significant contribution to the draft. Gray-Donald has provided general advice and reviewed the draft.*

This publication is included in my portfolio as it validates my approaches in action research and provides valuable insights in how students can be engaged with sustainability issues.

Sjerps-Jones, H., (2007) Engaging students with sustainability issues, *Planet* (18): 40-42.

This article is the outcome of my initial research into student engagement with sustainability and describes new insights in how students can be engaged with sustainability issues. I sought publication in Planet *as it has a broad readership that goes beyond the geography subject area. Similar to the publication in* Them & Us*, it was meant to instigate discussion and generate interest in further participation in my ongoing action research projects.*

This publication is included in my portfolio as it validates my approaches in action research and provides valuable insights in how students can be engaged with sustainability issues.

Sjerps-Jones, H. (2007), Duurzaam Design, *Vormberichten,* 6 (07): 14-16.

Published in Dutch, the rationale below includes a summary statement in English.

At the time of publication I was working as a design lecturer and action researcher funded by the Centre for Sustainable Futures. Together with students from 3 colleges in the Southwest I explored how they could successfully be engaged with sustainability issues. The co-operative inquiry coincided with a visit to design studios and the Association for Dutch Designers (BNO) in Amsterdam by one of the student groups. As the Dutch have a reputation for being open minded and innovative, the students were expecting innovation in the field of sustainability. They were surprised to find this was not the case. Although the visit not intended to form part of the ongoing inquiry, it was a natural step for me, to explore to what extent sustainability was embedded in Dutch design and design education. I analysed opinion pieces and features in the

catalogue of BNO publications (as most designers in the Netherlands are subscribers) and investigated the narrative about sustainable/green design on company websites, choosing a mix of established and upcoming design studios (recommended by BNO) ranging from small to large. I also researched the historical ethical roots of Dutch Design, which are based on the philosophies of Calvijn and Spinoza. In Dutch literature, Calvijn is often referred to as a major influence on attitudes and lifestyles and therefore merited re-reading of his ideas as well as the commentary by Dutch authors, such as Jan Wolkers and Maarten 't Hart. Spinoza is less directly referred to, but nevertheless, his masterpiece 'Ethica' (1678) which I have studied for the purpose of this article, has been very influential and is the foundation of the Dutch love of freedom of expression. This accepted freedom of expression has enabled Dutch designers to challenge the establishment and break through taboos and conventions of form and content. This attitude has led to radical innovations.

The article has been included in the portfolio to illustrate my own journey as an educational practitioner and researcher and as such it is briefly referred to (p25). Vormberichten *is a publication for design professionals in the Netherlands and as such also influential amongst design students. I sought to publish in* Vormberichten *to prompt a discussion and generate interest in sustainable design in the Netherlands. It was also a good moment to share insights from my initial research and test its validity. It was pleasing that this publication has instigated a serious discussion amongst designers and the initiation of sustainability courses and workshops for established designers.*

Summary statement:

> *In the publication 'Duurzaam design' (Sustainable Design) I make the case that addressing sustainability issues should not be an afterthought for designers. As designers are involved from the start in design processes, they are in a key position to transform the prevalent throw-away, energy wasting economy and help society adapt to a more sustainable way of living. Moreover, in design, sustainability should not be considered as an add-on or optional solution, but must be a core principle. However, as sustainable design is currently not main-stream, the principles must be embedded in formal design education to overcome the lack of knowhow amongst established designers. The idea that sustainable design is not profitable is contested; if marketed well a sustainably designed product can compete with other products and can also offer designers the edge to get ahead of competition.*

> *In the introduction I refer back to the Club of Rome's publication 'Limits to Growth' in which renowned scientists drew attention to the severity of the global environmental crisis. The essence of their message is still valid, but 35 years later the environmental problems have even become worse. With this notion as starting point I explore why there is such disinterest amongst Dutch designers to find solutions to these issues. In particular because designers are trained in problem solving and you would expect that they would embrace the challenge to find solutions to the environmental crisis we are*

in. The apparent disengagement has mainly to do with the negative image green design has amongst most designers: boring, ugly and not profitable. This negative image is also common amongst members of the BNO as is evident in previous articles. I challenge this perception by presenting successful examples from the Dutch design industry in fashion, product design and graphic design. These examples illustrate how quality, beauty, innovation, profitability and sustainability can go hand in hand. One example is the case of the type font Gulliver (Gerard Unger, 1992). It was specifically designed for the newspaper America Today *to save paper and costs. The Gulliver is 9% more economical than the Times Roman and yet it is elegant and loses nothing of its readability. This cleverly designed font type saved not only tons of paper, but also 10 million dollars per year in production and transport costs. There are other examples of social and environmental design. Ragbag pays homeless people in India to collect littered plastic from the streets and presses the plastic into sheets that are made into highly desirable bags and wallets. Environmental entrepreneur Brennels grows nettles on farms that are also utilized as nature parks. The nettle fibres are mixed with silk and turned into high-end market fashion.*

The article goes on to explain the core principles of sustainable design:
- *The materials are sustainable e.g. non-toxic, sustainable sources etc, nothing wasted;*
- *The components are recyclable or reusable (Cradle to cradle);*
- *Efficient energy and water usage;*
- *Durable;*
- *Short distance of transportation (manufacturing close to point of sale);*
- *Socially responsible: e.g. inclusive design;*
- *Economically fair: e.g. fair wages, labour rights*

It further explores how Dutch culture in a mentality, which is founded in the traditions of the restrained and frugal Protestantism of Calvijn (1509-1565) but also in the spiritual environmental ethics of Benedictus (Baruch) de Spinoza (1632-1677), could provide an excellent foundation for the further development of Duurzaam (sustainable) Design. The Dutch design industry is therefore well positioned to become a global leader in this field. However this can only be done if new generations of designers are engaged. The article concludes with a call to transform formal design education and ensure that the basic principles of sustainable design are taught.

Martin, K, Summers, D and Sjerps-Jones, H. (2007) Sustainability and Teacher Education*, Journal of Further and Higher Education*, 31(4): 351-362.

At the time of this publication I was a design lecturer at a college and one of the pioneering sustainability champions associated with the sustainable built showcase 'Genesis Project' in Taunton. I also contributed to the Post-graduate Teacher Training courses. My contribution to

this publication was to research and write about the purpose and underpinning values associated with the UN Decade for ESD, collaborative writing of the introduction and conclusion and writing a case study about the Genesis Project. The latter involved appraisal of the Teacher Training course, analyses of policy and strategy papers and other publications about the Genesis Project at Somerset College.

This publication is included in the portfolio as it provides a succinct critique of the prevalent practice in Teacher Education. Moreover, it highlights the crucial role that teacher training has to play in the promotion of ESD (see p32) and uncovers the skills gap. We sought publication with the Journal for Further and Higher Education *as it has a broad readership amongst lecturers teaching in FE colleges including those involved in teacher training. In doing so we were hoping to instigate a discussion amongst academics, practitioners and educational policy makers.*

* Authors are listed in alphabetical order

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Appendix

Portfolio of Publications

Publications (2006-2014)

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