

# Reflections upon Education for Sustainability: Supporting Student's Knowledge, Understanding and Practice

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### Abstract

This paper aims to explore sustainability through the lens of the next generation of thinkers, students on a social studies degree module. From theory to practice through reflection and reflexive diaries the output from this module within a HE context are explored. Students provided evidence that engagement in critical reflective process alongside module content and pedagogy that critically analyses dominant models of sustainability can enable praxis and transformational education opportunities.

### Introduction

Globalisation has brought with it both perceived benefits and challenges to the environment, communities and people. The global economy has brought jobs and homes to many whilst simultaneously hastening poverty and debt (Kaplinsky, 2005, p. 88). No longer can society view itself in a vacuum with the luxury of choice and power without responsibility to not only their own country and peoples rather every action now has repercussions not only for those in power but also those who are powerless in the world (Krapivin, 2007, p. 53). Indeed the connected world is now upon us. No longer are we separated and separate from each other rather we are inextricably linked to each other with or without consent (Lockwood *et al*, 2013). What does this modern world mean for the individual or the community or indeed the leaders of countries or businesses? Should a minority have the power to decide on behalf of the majority; as they are 'educated' and thus intrinsically 'know best'. An alternative position could include the rights of the planet and the rights of the future citizens, yet

unborn (Porritt, 2007, p. 8). This paper aims to explore sustainability through the lens of the next generation of thinkers, students on a social studies degree module. From theory to practice through reflection and reflexive diaries the output from this module within a HE context are explored.

Initially there will be an exploration of what constitutes 'sustainability' within a globalised world (Harris & Throsby, 1998; MacNeill, 2006; WCED, 1987). The data within this study was collected through assessments completed for this module through a reflective diary (Baran & Jones, 2016). This reflective diary allowed a 'window' on student's progression and attitudes through the module's linked to sustainability theoretical perspectives. The themes from these assessments will be explored in regards to the journey these students undertook and their reflections upon what sustainability meant to them pre-, during and post-module. Finally conclusions will be drawn as to the lessons learned from such a process and implications for future practice.

## Literature Review

The speed of change in the modern world is unsustainable; with society consuming resources at an unprecedented level. The resources, physical as well as human, are being consumed, and some would say abused, at an ever faster rate. As with all forms of 'capital' there is a finite limit to the consumption of such resources (Scharmer & Kaufer, 2013). For some the world has already reached a point of no return in regards to the use of the earth's resources in all its forms; 'it is clear that we are currently using non-renewable resources at rates vastly exceeding the rates of replacement' (Hill, 2011, p. 44). With poverty and hunger, floods and droughts, the equilibrium of the nature rhythms of the earth are no longer in harmony. Is this a natural process of the

ebb and flow of the earth's natural cycles or is this a human-made disaster; 'natural disasters may be initiated or accelerated by the man induced activities' and as such they are not 'completely unavoidable' (Satendra & Sharma, 2004, p. 4). Certainly, whatever the cause the reality is that humankind stands on the edge of a new world order where the earth will no longer be able to regain the rhythms of the past. Not only does this disequilibrium impact upon environments, animals but also communities and us as individual citizens on a finite resource we call the 'earth'.

The adoption of an eco-centric—social ecological perspective on sustainability frames the current research and underpins a critical reflection on the complexity of definitions of sustainability models. Social ecology recognises that nearly all our present ecological problems arise from deep-seated social problems (Bookchin, 2005; Zimmerman, 1993). As a social studies programmes a social ecology perspective is particularly relevant in developing critical reflective practitioners as well as providing a theoretical framework to examine the power dynamics within dominant sustainability models. Enabling students to recognise the impacts on contemporary society and for future generations.

If we adopt a social ecological model of sustainability then we can begin to explore the development of a fair and equal society. A society where there are both rights and responsibilities; a society which is not ruled by greed and capitalism. Rather a world where the ebb and flow of the nature world is emulated in the very fabric of the modern world; without which society will decay and destroy not only the forests but society itself. Sustainability is more than 'recycling', although indeed part of the process, it is more than thinking about how we travel; sustainable practice is a value base, a way

of thinking an attitude of mind about all resources in the world. As the world is interconnected one could ask do we, humankind, have the right to buy and sell earth's resources through the stock markets. Are they 'ours' to dispose of as we please? Capitalism the model of neo-liberalism puts forward that the 'market' is all and 'profit' is king (engendered and culturally Western); but is this just imperialism and colonialism revisited? A social ecological model of sustainability is the antithesis of capitalism; such a tension is ignored by many, alternately sustainability is seen as just another 'commodity' to be brought into the capitalist stable where profits can be made at the expense of the earth's resources. Indeed even the sustainability agenda has become a market place for capitalism:

'...free market environmentalism, which conceives of sustainable development within the dominant free market paradigm. In this paradigm, nature itself is, to some extent, treated as a commodity subject to market principles linked to its ability to supply environmental goods and services...' (Schuuman, 2001, p. 121).

### What is Education for Sustainability?

In order to engender a critical perspective on sustainability the education process is essential. It was recognised in Agenda 21 (UN, 1992) that there was a need to "...reorient existing education to address sustainable development..." (UN, 1992). Sterling (2001) illustrates that "...progress towards a more sustainable future critically depends on learning, yet most education and learning take no account of sustainability..." Sterling (2001) suggests therefore that current transmissive or modernistic models of education continue to develop non sustainable practice, that: "...education for sustainable development / or in..." needs to shift towards a transformative educational paradigm. Orr (1991) further illustrates the requirement for reo-orientating education:

'The destruction of the planet is not the work of ignorant people rather it is largely the result of work by people with BAs, BScs, LLBs, MBAs and PhDs' (Orr, 1991, p. 52).

The challenge therefore for educators in Higher Education concerned with developing students ecological / sustainable literacy (Orr, 2005; Sterling, 2011; QAA, 2014) is to develop a transformative learning experience with students to ensure that the principles of ESD as a process of reorienting education are enabled.

Education by its nature is a progressive and forward looking process which draws on the past to make informed decisions in the present for the future. Education is thus, potentially, a sustainable process. Beyond knowledge education has the potential to 'enlighten' and 'empower' particularly if at the heart of the process is the development of praxis (Smith, 1999; 2011).

The promotion of education for sustainability has been seen as a priority within Welsh Government and evidenced by its published guidance and documentation for education sectors up to Further education (WG, 2008, a,b,c,d). It is also central to the Welsh Governments legislative framework its most recent policy demonstrates Wales commitment to sustainability agenda "The well-being of Future Generations (Wales) Act 2015 which focuses on "...improving the social, economic, environmental and cultural well-being of Wales. (WG, 2015, p. 3). The premise of its ESDGC approach is one based on adopting a more transformational learning experience through viewing ESDGC as a pedagogical process with a set of values underpinning it rather than just focusing on content and knowledge: the skills, knowledge and understanding and values are illustrated in the following questions and reflect to some extent Sterling's (2001) discussed above perspective on Education for Sustainability model :

- i. 'Does the learning offer past, present and future perspectives?

- ii. Does the learning address any of the major themes within ESDGC i.e. wealth and poverty, health, climate change, the natural environment, consumption and waste?
- iii. Does it make interconnections between these themes and between people, places and events both locally and globally?
- iv. Is the learning relevant to learners' lives?
- v. Does it encourage critical examination of issues?
- vi. Does the learning address controversial issues and examine conflict resolution?
- vii. Does the learning explore values and cultural perspectives?
- viii. Does it empower learners to take appropriate action? ‘  
(Welsh Government, 2008c, p 12)

The documents further emphasises the importance of reflecting on personal values and perspectives so as to ensure a critical thinking approach is adopted when teaching and engaging with ESDGC (WG, 2008c):

‘As teachers we need to be aware that our own values are shaped by our experiences and to consider how these will impact on our teaching. We should be facilitators of learning and not be expecting pupils to accept our own values or a particular set of values’ (WG, 2008c, p. 14).

Within higher education there has also been a significant shift towards embedding ESD (Sterling, 2011; QAA, 2014) with the emphasis on the pedagogic approach again evident:

‘Education for sustainable development is the process of equipping students with the knowledge and understanding, skills and attributes needed to work and live in a way that safeguards environmental, social and economic wellbeing, both in the present and for future generations’. (QAA 2014, p. 5).

Education for sustainable development means working with students to encourage them to (QAA, 2014, p. 5):

- i. ‘consider what the concept of global citizenship means in the context of their own discipline and in their future professional and personal lives

- ii. consider what the concept of environmental stewardship means in the context of their own discipline and in their future professional and personal lives
- iii. think about issues of social justice, ethics and wellbeing, and how these relate to ecological and economic factors
- iv. develop a future-facing outlook; learning to think about the consequences of actions, and how systems and societies can be adapted to ensure sustainable futures’.

(QAA, 2014, p. 5)

The focus as with compulsory education is on a more critical transformational learning approach:

‘Education for sustainable development encourages students to develop critical thinking and to take a wide-ranging, systemic and self-reflective approach, adapting to novel situations that can arise from complexity. An ability to anticipate and prepare for predictable outcomes and be ready to adapt to unexpected ones is an important goal’. (QAA, 2014, p. 7).

The challenge for us as educators is to engage with both the content of ESD and the underpinning pedagogical approach, including examination of our values if we are to address the reorientation of education. To design our learning and teaching so as to promote a transformational learning experience for students and not pay lip service alone to the key content areas of ESD. In doing so however we also need to engage in critical discussion and reflection including exploring alternative modules of sustainability such as a social ecology perspective (see above, Bookchin,). In doing so we may be going some way to address what Giroux (1994, 1988, *cited in* Tomlinson-Clarke & Clarke, 2016, p. 122) highlighted as key issues in teacher education: “...its culpability in promoting teacher political neutrality and disengagement in political discourse related to education”. He further discusses teachers lacking the political language to deconstruct hegemonic systems of power. In adopting a social ecology model the development of both a transformational

educational experience and an underpinning theoretical base to challenge inequality can therefore be achieved.

In adopting such a theoretical framework of ESD and social ecology it entails questioning dominant perspectives on sustainability as well as the policy context; this enables to engage in critical reflection through exploring disorientating dilemmas (Clarke, 19193, *cited in* Tomlinson-Clark & Clark, 2016). For example engaging students in evaluation of different models / paradigms of sustainability to aid their reflection may result in them questioning their own attitudes and behaviour. When provided with the options of understanding sustainability as “Technocentric” and maintain the status quo of society: which Gives prime importance to people and technology above the environment (Cudworh, 2003); or “Ecocentric” which emphasises the need for system change and recognises the people, society and the environment and intertwined phenomena (Cudworth, 2003).

#### [The Need for a Critical Consciousness](#) transformational

Engaging students with different models / paradigms of sustainability and the activity of critical reflection on their own values thus adopts the approach that Sterling (2003), Orr (1993), Giroux and indeed the policy documents of ESD recomend.

Therefore this should result in the outcome of a critical consciousness on sustainability therefore producing a transformational educational experience one that Ferreira, ( 2017) argues will assist towards developing a sustainable future:

‘If we are to envision and construe actual sustainable futures, we must first understand what brought us here, where the roots of the problems lie, and how the sustainability discourse and framework tackle—or fail to tackle—them. To do this is to politicize sustainability, to build a critical perspective of and about sustainability. It is an act of conscientização (or conscientization), to borrow Paulo Freire’s seminal term, of cultivating critical consciousness and conscience’. (Ferreira, 2017, p. 1)

In order to “cultivate critical consciousness and conscience” as educators we therefore need to engage our students in a critical reflective process.

The aim of the Social Studies degrees, which forms the bases of this study, is to explore diversity, difference and equality in society with a clear focus on the foundational triad of theory, policy in practice (UWTSD, 2017). A main element is on understanding the attitudes and values within an anti-oppressive practice paradigm, for those working with vulnerable groups in a globalised context (Van Wormer & Besthorn, 2017, p. 33). In addition students are encouraged to understand inequality in society through exploring how barriers and challenges impact upon individuals at risk of inequality and poverty through personal engagement and reflection. Kroth & Cranton (2014, p. xiv) explain Mezirow’s position in this regard as a form of ‘storytelling’ which allows for the ‘transformative learning through first-hand accounts of others’ transformative experiences’. In turn this exposes a:

‘learner to alternative perspectives, a process that is at the heart of critical reflection and critical self-reflection, which is, in turn, central to transformative learning’ (Kroth & Cranton, 2014, p. xiv).

To this end the module which explores the social ecological model of sustainability is also underpinned by such values with learning outcomes which explore the contested nature of sustainable development; the role of sustainable development in building a world based on principles of justice, equity, participation and transparency; strategies and frameworks for promoting sustainability; and social justice in communities through reflecting upon their own value and attitudes in relation to sustainable development (UWTSD, 2017).

Students undertaking the sustainability module often come with a range of pre-set ideas which focuses on recycling of plastic bags and the use of public transport (Sterling, 2001). Many students saw the module as not for them with 'low levels of concern about environmental problems'; this demonstrated a lack of insight of why a sustainability module is included in the programme (Mira, Cameselle & Martinez (Eds.), 2002, p. 28). It is essential to engender a critical perspective on models of sustainability and therefore engage with a transformative education process. This, in turn, allows students to develop philosophical thinking and critical reflection on ones' own practice to allow for meaningful engagement with the global and societal context (UN, 1992).

## Methodology

A qualitative constructivist paradigm was used in this study which allowed for a transformation of knowledge and experiences through active engagement with real life tasks (Yin, 2003, p. 1; Simons, 2009, p. 21). Students were give a qualitative questionnaire alongside reflective diaries to 'tell the story' of their sustainability learning journey from what Johari (*cited in* Sheehan, 2013, p. 96) calls the 'unknown' to what is 'known' by the individual. Applied Thematic Analysis was used to interrogate the data resulting from the questionnaires and reflective diaries alongside their written assessments for the module (Guest, MacQueen & Namey, 2012). Applied Thematic Analysis is 'rigorous, yet inductive, set of procedures designed to identify and examine themes from textual data in a way that is transparent and credible' and draws upon a 'broad range of 'theoretical and methodological perspectives' with a 'primary concern' on 'presenting the stories and experiences voiced by study participants'; in this study hearing the 'story' of the students' journey is central to the research (Guest, MacQueen & Namey, 2012, p. 15-160). Initially a pre-module qualitative questionnaire was given

to students in the first lecture to gain an understanding of their initial position in regards to sustainability. During the module students were asked to keep a reflective diary of their journey and this then fed into their assignments. Finally a post-module qualitative questionnaire was used to collect data on the distance travelled.

### Context

The module had a strong focus built upon an understanding of the various theoretical perspectives of sustainability alongside visits to eco-villages and forest schools. These 'real life' activities allowed for deeper understanding of policy and theory in practice (Yin, 2003, p. 1; Simons, 2009, p. 21). Prior to visiting the eco-village little was explained to students about what to expect; this was to ensure that they engaged with the journey in their own way. Initially we advised students to wear 'suitable clothing'; a group of female students asked

*"What footwear should we wear?"*

The team suggested hiking or walking boots. They indicated that they did not have either, we then suggested wellingtons. They replied

*"We'll have to buy or borrow these".*

This lack of previous experience within a rural environment also mediated their engagement and understanding of the module content. Through encountering real-life experiences which create a form of 'disorientating dilemma' they begin to

'examine, question, and reflect on the their preconceived notion, myopic beliefs, thinking, assumptions, and actions, and as a result, change or broaden their frames of reference' (Clark, 1993 *cited in* Tomlinson-Clarke & Clarke, 2016, p. 122).

For example, one of the real challenges for some students was the use of a 'dry compost toilet' which did not have the western 'water flush' but rather the use of

sawdust to 'sprinkle' over their human waste; in turn this waste was eventually used on the land (Legrand, Sloan & Chen, 2017, p. 138). This 'reality' of eco-existence for some students was a real challenge but generated a range of discussions about how society disposes of 'human waste' and the social stigma around 'toileting'; this leads to a critical consciousness and reflection which in turn allows for transformation to occur (Clark, 1993 *cited in* Tomlinson-Clarke & Clarke, 2016, p. 122).

## Results

### Pre-Module Qualitative Questionnaires

From the Pre-Module questionnaires it was evident that students' general perception of sustainability was limited in scope prior to engagement in the lecturers. Students generally presented as being Techno-Centric Accommodationists with a fixed mind set in line with society's stereotypical response to the Sustainability Agenda of 'it's about recycling plastic bags' (Mander, Brebbia & Tiezzi, 2006). They wished to maintain their current lifestyles and saw technology as the future. They also saw ESDGC as content focused rather than process and pedagogical focus with critical reflection. Students' Comments

*"Upon arriving at the first lecture I felt a lack of interest for the subject of sustainability"*

*"Vague knowledge about fossil fuels and recycling materials"*

*"Couldn't see the link to people"*

*"It's about global warming, recycling and saving the planet".*

At this point of their journey the overwhelming majority in society and in indeed the students in this cohort considered that they wanted an undisturbed environment but also want a nice car, house, and holidays overseas (Cudworth, 2003). There were two

students who had 'lived in eco-friendly communities' and they felt somewhat 'marginalised' and considered that they should not voice their experiences or opinions as they might be seen as 'yoghurt knitters'; thus they tended not to engage greatly in the class discussions.

### Reflective Diaries

The reflective diaries allowed students to explore their own stories and journeys through the module and chart how, if at all, their preconceptions changed. It was evident from their diaries that students quickly began to challenge techno-centric policy frameworks and broadened their understanding of EDGSC as an educational process. It was evident that the majority of the cohort moved from a move from 'techno-centric' to either an 'eco-socialist' or 'eco-feminist' position (Carter, 2007; Gaard, 2010). Students commented that

*"I am now aware that my initial perspective of sustainability, relating to recycling and renewable and non-renewable resources, was incorrect and likely influenced by a lack of understanding and media communications such as news reports"*

*"However, a successful relationship includes some effective practise that can support principles of sustainability, such as community engagement, government implication, policy makers, environmental and health policies"*

*"I have actually followed an ESDGC pedagogy approach e.g. through forest schools, eco-schools and school councils but I didn't realise it!"*

*"The real challenge is of trying to do this against competing educational policy e.g. literacy and numeracy project with set targets regardless of ability"*

Once they reflected upon their initial opinion they moved from the 'unknown' to a 'private hidden realisation' within their diaries (Berens, p. 3). This demonstrated critical reflection in practice.

## Post-Qualitative Questionnaires and Assignments

The data from the post-qualitative questionnaires and submitted assignments demonstrates a more future orientated position of all students. They began to challenge the ability of the modern society, and themselves, to engage with Agenda 21 (UN, 1992). In addition they evidenced in their work that they had begun to challenge their own resource consumption and behaviour as being contributory to the unsustainability of current practice and understood that

*“It’s about societal attitudes and understanding of the needs of today set against future generations”*

*“It’s a Social Justice Issue!”*

They also raised concerns that

*“The wealthy’ and ‘middle classes’ were equipped to engage in meaningful change”*

*“Their own behaviours as practitioners mattered”*

*“This had an impact within their communities through educational practice”.*

Finally, at the end of their journey through the module, students began to realise that sustainability permeates all aspects of our lives, that everyone has a role to play and that there were going to be challenges to their own lifestyles to put this into practice.

## Discussion

The research undertaken with students through reflective diaries illustrated the potential of adopting an ESD pedagogy and enabling the development of critical consciousness through critical reflective/ reflexive activities and experiential learning;

the aim being for students to engage in 'praxis' and therefore a truly transformative learning experience. The module content and assessment allowed students to:

- i. Reflect upon their own practices and experiences
- ii. Examine their own values
- iii. Engage them in the development of ESDGC activities applicable to their context
- iv. Question current educational models of learning i.e. transmissive versus transformational
- v. Examination of sustainability theories e.g. techno-centric and eco-centric
- vi. Experiential visits and learning

The pedagogical approach therefore is aligned to current views on developing sustainable literate students (Sterling, 2011; QAA, 2014, WG (a,b,c,d) and engaged students in future orientated education. Education for Sustainable Development has consequently promoted competencies like critical thinking, imagining future scenarios and making decisions in a collaborative way (UNESCO, 2014)

In addition to developing these sustainable literacy skills the development of a critical consciousness is fundamental to the aims of the programme. The focus on adopting a social –ecology model (Bookchin, 2005;) to enable critical reflection further enabled students and staff to develop change to their practices and therefore engagement with "Praxis".

The ultimate aim of the programme is to promote a "Just Sustainable Paradigm" (Agyeman, 2005). One that also embeds a social justice element rather than accept a sustainable paradigm that promotes commodification.

Conclusion:

The research provided an opportunity for critical reflective/ reflexive practice for both students and lectures, developing praxis and critical consciousness. To this end the

model of teaching and assessment could be seen to be transformative in nature. Further it highlighted the need to examine further sustainability theories and consider the importance of a “a just sustainability paradigm”. As educators within higher education we have a responsibility to prepare our students for the future, the challenge or opportunity is very well articulated by Orr, (2005):

*‘The plain fact is that the planet does not need more successful people. But it does desperately need more peacemakers, healers, restorers, storytellers, and lovers of every kind. It needs people who live well in their places. It needs people of moral courage willing to join the fight to make the world habitable and humane. And these qualities have little to do with success as we have defined it’ (Orr, 2005)*

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