

UoInstitution: University of Plymouth		
Unit of Assessment: UoA23		
Title of case study: Embedding a new paradigm of Sustainable Education within Curricula for increased learner wellbeing and change towards sustainable societies		
Period when the underpinning research was undertaken: 2010-2017		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Professor Stephen Sterling	Professor of Sustainability Education	01/09/05 – 30/09/17
Sue Waite	Associate Professor	01/12/12 – 31/07/17
Rowena Passy	Senior Research Fellow	01/08/10 – present
Period when the claimed impact occurred: August 2013 -2020		
Is this case study continued from a case study submitted in 2014? N		
<p>1. Summary of the impact (indicative maximum 100 words)</p> <p>Sustainable Education research at the University of Plymouth has led to changes to education policy and practice in the UK and international contexts. Sustainable education places an active concern for planetary wellbeing at the centre of teaching and learning. Our research was an integral part in shaping a £10m programme funded by the Department for Education. It has helped shape global educational policy by recommending more specific reference to Education for Sustainable Development in United Nation's Sustainable Development Goal 4.7, and informing UNESCO's Global Education Monitoring of Education for Sustainable Development. In addition, it has contributed to embedding a new paradigm of Sustainable Education within curricula, which has increased the number of universities and schools engaging with the natural world. This has increased learner wellbeing and change towards sustainable societies.</p>		
<p>2. Underpinning research (indicative maximum 500 words)</p> <p>Our body of research on sustainable education demonstrates an engagement with sustainability and nature education-based models from early years education to higher education. The research addresses the extent to which policies and practices place an active concern for well-being at the centre of the education processes, recognising the importance of supporting and developing citizens who understand the connection between the wellbeing of themselves, their communities both local and global, and the physical environment for a sustainable future.</p> <p>Research by the Centre for Sustainable Futures (CSF), led by Sterling over the last fifteen years, has directly influenced the way in which UNESCO and higher education institutions around the world understand and use the concept of Education for Sustainable Development (ESD). CSF research has clarified the implications of a rapidly growing sustainable development discourse for Higher Education (HE) policy and practice, and at the same time elaborated on the role of HE in advancing more sustainable societies. This research has entailed active engagement with global debates on ESD, particularly in relation to HE, through a methodology of analysis and synthesis, and of deliberative inquiry over time, as well as a series of discrete research projects. Key research contributions to the field concerning the nature of sustainable higher education, include:</p> <ul style="list-style-type: none"> analysing the systemic nature of the challenge to institutional educational policy and practice posed by the sustainability agenda such as costs for financial administration, the 		

barriers created by the Research Assessment Exercise (RAE)/Research Excellence Framework (REF) Categories, and the existence of much interdisciplinary work in grey literature, which causes much research to focus on single disciplines [3.1].

- conceptualising the characteristics of a sustainable Higher Education (HE) in terms of curriculum and pedagogy [3.2] such as moving towards more transformative, more socially engaged and future oriented models of teaching and learning.
- synthesis of effective guidance to higher education leaders and practitioners for the implementation of teaching and learning for sustainability in HE [3.3]. This Future Fit Framework was commissioned by the Higher Education Academy (HEA) and was the first national comprehensive resource on embedding sustainability in HE.

Research to develop sustainable education in schools has included The Natural Connections Demonstration Project (NCDP), funded by DEFRA, Natural England and English Heritage. This was the largest outdoor learning project in the UK at the time (2012-2016) covering 125 schools, 5,023 school staff and 40,434 pupils. Devising a distributed model of responsibility to extend learning in the natural environment, this work enacted change in the focus of education towards school children's health and wellbeing through use of the natural environment in teaching practice. The Final Report [3.4] provided the first in-depth and large-scale quantitative and qualitative evidence that demonstrated how taking curricular learning outdoors supports children's mental health and wellbeing and increases their enjoyment of and engagement with learning. The project explored in detail the barriers to taking learning outside, and a further publication demonstrated how to overcome these barriers [3.5]. The project consolidated UoP's international reputation for innovative thinking in outdoor learning and has provided an internationally used evidence base on the value of taking learning outside. Work on learning in the natural environment was first brought together in a seminal collection of UoP research [3.6] that has been adopted as a core textbook in Singapore. Further research into sustainable education and the natural environment has extended to education policy and practice across the life course and beyond formal education.

3. References to the research (indicative maximum of six references)

- 3.1 Jones, P., Selby, D. & Sterling, S. (2010) More than the sum of their parts? Interdisciplinarity and sustainability, in Sterling, S., Jones, P. & Selby, D. (2010) Sustainability Education: perspectives and practice across higher education, Earthscan, London.
- 3.2 Sterling, S (2011) 'Transformative learning and sustainability: sketching the conceptual ground', Learning and Teaching in Higher Education, Issue 5, 17-33.
- 3.3 Sterling, S (2012) The Future Fit Framework – An introductory guide to teaching and learning for sustainability in HE, The Higher Education Academy. York.
- 3.4 Waite, S., Passy, R., Gilchrist, M., Hunt, A. & Blackwell, I. (2016) Natural Connections Demonstration Project 2012-2016: Final Report. Natural England Commissioned Reports, Number 215.
- 3.5 Edwards-Jones, A., Waite, S. & Passy, R. (2016) Falling into LINE: school strategies for overcoming challenges associated with learning in natural environments (LINE), Education 3-13, 46:1, 49-63, DOI: 10.1080/03004279.2016.1176066.
- 3.6 Waite, S. (Ed) (2011) Children Learning Outside the Classroom From Birth to Eleven, London: Sage.

4. Details of the impact (indicative maximum 750 words)

Influencing and Shaping International and National Policy

a) The UN Sustainable Development Goals and their implementation:

Sterling wrote the educational section of a high-level report that shaped the discussion of the final version of the United Nation's Sustainable Development Goal 4 (SDG 4) prior to the UN Global Goals framework being adopted by all member states in 2015. Sterling recommended more explicit reference to Education for Sustainable Development (ESD) as was followed within Goal 4.7: '*By 2030, ensure that all learners acquire the knowledge and skills needed to promote*

sustainable development, including, among others, through education for sustainable development". UNESCO's 2016 Global Education Monitoring Report, which goes to policymakers in all UN member states, referenced Sterling's research which emphasises the role of education in achieving all other SDGs [5.1]. The UNESCO Chief of Section for Sustainable Education notes of Sterling, *'He has certainly for a long time been one of the most important experts UNESCO has worked with in ESD'* [5.2]. One of the main ways in which UNESCO have enacted SDG 4.7 has been through their 2015-19 Global Action Programme on ESD, and it is through this that Sterling's influence on global educational policy has been implemented.

b) Quality Assurance Agency in Higher Education Guidelines

CSF staff have contributed to the policy development group that wrote the Quality Assurance Agency (QAA) Guidelines for UK Higher Education Institutions on Education for Sustainable Development, both in 2015 and in its revision in 2020. This was developed *'to be of practical help to higher education providers working with students to foster their knowledge, understanding and skills in the area of sustainable development'* [5.3]. In both versions of this guidance, Sterling's Future Fit Framework has been identified as a key resource for HE leaders and educators.

c) Department for Education Policies on Outdoor Education Spending

The Natural Connections Demonstration Project (NCDP) provided a strong evidence base through which Natural England were able to engage the Department for Education (DfE) on the direction of outdoor education policy. NCDP enabled Natural England to evidence that outdoor learning contributes more than potential improvement in academic performance; it supports pupils' health and wellbeing, and improves their thirst, appetite, drive and motivation for learning. It also improves teachers' ability to teach and their job satisfaction [5.5]. NCDP's research findings meant that *'The dialogue with policy makers ... went from being specifically focused on academic performance to a much wider set of outcomes linked to Character Education, health and wellbeing and, as a consequence, [became] much more profound'* [5.5].

This contributed directly to a shift in DfE's educational aims which can be clearly seen in the Government's 25 Year Environment Plan (2018), where it helped to inform a number of commitments within the theme of Connecting People and Nature [5.4]. Three of these commitments were brought together in the Children and Nature programme, a £10m programme funded by the Department for Education (DfE). The Nature Friendly Schools project, by far the largest of the three projects, builds on the insights, experience and approach tested through NCDP. Experience from NCDP *'meant that we [Natural England] were able to develop a very, very detailed costed business programme that was scrutinised by Treasury. Significantly, the only programme within the entire 25-year programme that was costed and funded was the Children and Nature programme'* [5.5].

The success of the distributed model of responsibility of NCDP led to a decision to replicate the way it used independent brokers working with schools to facilitate/deliver outdoor learning and CPD through the DfE-funded Children and Nature project. This project has enabled the independent brokers to focus on children's wellbeing [5.5].

Influencing National and International Institutional Practice

Sterling's work has provided an important theoretical basis for sustainable curriculum development in HE, in terms of interdisciplinarity, transformative pedagogy and teacher education.

'Stephens contribution is varied and huge. He has spoken at several EAUC and UN conferences, run superb ESD conferences profiling Plymouths work and been one of the foremost (if not the foremost) thought leaders in the field. His writings are the 'go-to' texts.' CEO, eauc The Alliance for Sustainability Leadership in Education [5.6].

Natural Connections provided outdoor learning providers in the South West of England with robust evidence of the benefits of outdoor learning, providing a compelling case to schools and parents of its value. It supported Carymoor Environmental Trust, who work with 220 schools, with their external funding bids and expansion. *'Natural Connections opened up a new level of receptivity to environmental education within schools in the region. We have seen real growth in demand for what we offer and we have added and expanded our own programme to meet this demand.'* [5.7].

The Go Out and Learn (GOaL) project (2017-2020), a collaboration between England, Norway, Belgium and Italy, was based on NCDP. The project was built on a key finding from NCDP that teachers lack confidence in taking learning outside. *'The research findings from... NCDP have been fundamental to the success of GOaL'* [5.9]. All schools involved with the GOaL project reported that teachers now have confidence in their outdoor teaching practice and that pupils are more engaged with learning; pupils' basic (e.g. reading, writing, language) and transversal skills (e.g. team work, communication, social and civic responsibility) have improved as a result of lessons outdoors. Being outdoors on a regular basis has also meant that teachers and pupils have become more environmentally aware [5.8].

The international reach of the NCDP research has influenced the language and practice of teachers in Australia, Sweden and New Zealand. UoP engaged with international educators about the project and its relevance for their practice. Following a UoP visit to the University of Melbourne Graduate School of Education, their Assistant Dean for Learning and Teaching stated that *'Thinking about 'outdoor learning' in Victoria changed [to one which] aims to embed the concept within the language and practice of teachers in the state.'* [5.9].

5. Sources to corroborate the impact (indicative maximum of 10 references)

5.1 UNESCO Global Education Monitoring Report Summary 2016

<https://unesdoc.unesco.org/ark:/48223/pf0000245745>

5.2 Chief of Section of Education for Sustainable Development, UNESCO.

5.3 Education for sustainable development: Guidance for UK higher education providers June 2014

https://www.qaa.ac.uk/docs/qaa/quality-code/education-sustainable-development-guidance-june-14.pdf?sfvrsn=1c46f981_8

5.4 HM Government/DEFRA (2018) 'A Green Future: Our 25 Year Plan to Improve the Environment' June 2018

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf

5.5 Testimonial, Jim Burt, Natural England Principal Adviser, England.

5.6 Iain Patton, CEO eauc The Alliance for Sustainability Leadership in Education

5.7 Chief Executive, Carymoor Environmental Trust, England.

5.8 Associate Professor, Coordinator of GOaL project, University of South Eastern Norway

5.9 Assistant Dean Learning and Teaching, University of Melbourne, Australia