

<b>Institution:</b> University of Edinburgh		
<b>Unit of Assessment:</b> 24 (Sport and Exercise Sciences, Leisure and Tourism)		
<b>Title of case study:</b> Embedding Learning for Sustainability in Scottish education policy and teaching practice		
<b>Period when the underpinning research was undertaken:</b> 2000 – 2020		
<b>Details of staff conducting the underpinning research from the submitting unit:</b>		
<b>Name(s):</b>	<b>Role(s) (e.g. job title):</b>	<b>Period(s) employed by submitting HEI:</b>
Professor Peter Higgins	Chair in Outdoor and Environmental Education	1992 – present
Professor Robbie Nicol	Chair in Place-Based Education	2000 – present
Dr Simon Beames	Senior Lecturer in Outdoor Learning	2005 – present
Dr Beth Christie	Senior Lecturer in Learning for Sustainability	2010 – present
Dr Heidi Smith	Lecturer in Outdoor Learning	2018 – present
Dr Ann J Rae	Senior Lecturer in Primary Education	2014 – present
<b>Period when the claimed impact occurred:</b> 1 August 2013 – 31 December 2020		
<b>Is this case study continued from a case study submitted in 2014?</b> No		
<b>1. Summary of the impact</b>		
<p>The Outdoor Environmental Education unit has created a robust, integrated evidence-base for the pedagogical benefits of “Learning for Sustainability” (LfS), an approach which has significantly impacted policymaking and teaching practice across Scotland. Their work influenced the Scottish Government to develop a definition of LfS as “a whole-school approach that enables the school and its wider community to build the values, attitudes, knowledge, skills and confidence needed to develop practices and take decisions which are compatible with a sustainable and equitable society.”</p> <p>The research led LfS to be embedded in Scotland’s Curriculum for Excellence (followed by more than 690,000 state school pupils) and General Teaching Council for Scotland professional standards (for more than 56,000 registered teaching professionals). LfS was also incorporated into school improvement processes, the revised Scottish Qualifications Authority National Courses, Skills for Work Courses and learning pathways and initial teacher education.</p>		
<b>2. Underpinning research</b>		
<p>The Outdoor Environmental Education unit’s research enhanced understanding of the significance of the previously under-researched area of outdoor learning. It also clarified the concept of LfS, a pedagogical approach which brings together education for sustainable development, global citizenship and outdoor learning.</p>		

Christie and Higgins' 2012 Forestry Commission-funded research found that outdoor learning improves school pupils' capacity to learn curriculum content through the development of children's broader skills – such as social interaction, problem-solving and critical thinking – that enhance children's capacity to learn and provide ideal conditions in which to do so (3.1).

Nicol's 2013 philosophy paper challenged the traditional focus on what school pupils can "take from" nature, to encourage recognition of the educational, developmental and environmental value for pupils to be *in*, and contribute by caring *for* their environment (3.2). The paper highlights examples of ways in which theory and practice in place-specific educational experiences can simultaneously be promoted, by encouraging teachers to take a moral position on sustainability education as a vehicle for positive change.

Christie, Beames and Higgins' GBP50,000 Esmée Fairbairn Foundation-funded 2014-15 research explored how teachers and pupils responded to their "Outdoor Journeys" programme, which provides schools with a framework to deliver regular, low-cost outdoor learning opportunities (3.3). Activities include pupils generating and exploring questions by going on a journey in their local environment. The researchers observed sessions delivered by 10 geography and mathematics teachers to 142 pupils from 3 schools in the Perth and Kinross Scottish local authority. In a survey, 89% of the 140 pupils who responded highlighted the benefits of having "new experiences", "enjoying being outside" and having "freedom of choice". Nine in-depth teacher interviews emphasised how outdoor learning creates interdisciplinary learning opportunities for pupils to develop critical thinking and interpersonal skills, reinforcing findings from Christie and Higgins' earlier research (3.1).

Subsequently, in 2019 Christie, Higgins and Smith reviewed existing policy and contemporary literature on Scottish teachers' conceptual understanding of LfS and appraised existing professional development programmes for teachers (3.4). Their research identified four critical areas for change to support the successful embedding of LfS in Scottish schools:

- More high-quality professional development for teachers,
- Motivated teachers who work collaboratively,
- Interdisciplinary learning tailored to the needs of the students, and
- Leadership within a clear strategic framework.

The researchers and colleagues analysed LfS in an initial teacher education programme, conducting in-depth interviews with students and their programme director to understand their knowledge of and engagement with LfS (3.5). They found student teachers engaged with the approach and identified its benefits in: a) enhancing pupils' emotional and cognitive learning, and b) strengthening their ethical dispositions towards their communities and the environment. The paper also drew theoretical connections between LfS and major global sustainability challenges such as climate change, suggesting LfS could equip pupils, student teachers and teachers with the resilience to tackle such complex issues.

Christie and Higgins' 2020 publication established that LfS could improve young people's mental health; confidence; capacity to learn curriculum content; and development of broader skills such as social interaction, problem-solving and critical thinking (3.6). The GBP10,000 Scottish Government-funded research indicated LfS could improve learners' understanding of citizenship, their connection to their communities and their attitudes towards sustainability. The research also highlighted a need for supportive professional learning environments to develop teachers' abilities to address the complexity of sustainability issues in their teaching.

### 3. References to the research

3.1 Christie, B. & Higgins, P. (2012). *The impact of outdoor learning experiences on attainment and behaviour: A brief review of literature*. Forestry Commission Scotland/University of Edinburgh. Forestry Commission Report 11/2012.

3.2 **Nicol, R.** (2013). Entering the fray: The role of outdoor education in providing nature-based experiences that matter. *Educational Philosophy and Theory*. 46 (5), 449-461.

<https://doi.org/10.1111/j.1469-5812.2011.00840.x>

3.3 **Christie, B., Beames, S., & Higgins, P.** (2016). Context, culture and critical thinking: Scottish secondary school teachers' and pupils' experiences of outdoor learning. *British Educational Research Journal*. 42(3), 417-437. <https://doi.org/10.1002/berj.3213>

3.4 **Christie, B., Higgins, P., King, B., Collacott, M., Kirk, K., & Smith, H.** (2019). From rhetoric to reality: Examining the policy vision and the professional process of enacting Learning for Sustainability in Scottish schools. *Scottish Educational Review*. 51(1), 44-56.

3.5 **Nicol, R., Rae, A., Murray, R., Higgins, P., & Smith, H.** (2019). How can Initial Teacher Education tackle “super-wicked” problems? *Scottish Educational Review*. 51(1), 17-29.

3.6 **Christie, B., & Higgins, P.** (2020). Educational outcomes of Learning for Sustainability: A brief review of literature. Scottish Government.

#### 4. Details of the impact

##### Impact on Scottish education policy

In 2014, the Scottish Government appointed Higgins to co-chair its LfS National Implementation Group. The group's 2016 concluding report, Vision 2030+ [5.1], highlighted three crucial completed policy actions which built on Higgins' previous (2012) LfS Government advisory report and its recommendations, which originated from Christie and Higgins' (2012) initial study (3.1):

1. Starting in the 2013-14 school year, the Scottish Government made LfS an entitlement for all of Scotland's more than 690,000 pupils as part of Curriculum for Excellence [5.2].
2. In 2014, LfS was embedded as a core component of the GTCS Professional Standards for all registered teachers in Scotland [5.1, p. 4 of the report]. These standards were revised in 2019-20 and confirmed by the GTCS Council in December 2020 with an even stronger commitment to LfS [5.3A]. The GTCS Senior Education Officer stated, “*Through the professional registration or professional update processes, all 56,000 individuals registered to teach in Scotland have engaged with the GTCS Professional Standards that put our professional values and professional commitments at the core of what we do. Working with the researchers has had a significant influence on how LfS has been meaningfully integrated throughout the Professional Standards. LfS is now at the heart of what it means to be a teacher in Scotland, from the strategic vision of headteachers right the way through to the classroom practice and pedagogy*” [5.3B].
3. In 2015, Education Scotland added LfS as an assessment measure of highly-effective practice in its self-evaluation framework of quality indicators for schools, called “How Good is our School?”, including the need for schools to “*increase learning for sustainability*” [5.4, p. 7].

The impact of the pioneering LfS research (3.1, 3.2) on Scottish education policy has been internationally recognised, highlighting its significance in Scotland becoming regarded as world-leading in LfS. In 2013, UNESCO recognised the researchers' role in making Scotland a global LfS pioneer, by accepting a bid led by Higgins to establish Scotland's “UN Recognised Regional Centre of Expertise on Education for Sustainable Development” (known locally as “Learning for Sustainability Scotland” (LfSScotland) to align with national terminology). This independent, self-funding centre (based at the University of Edinburgh) has been working alongside the Outdoor Environmental Education unit's researchers to bring together a growing group of practitioners and academics (approximately 900 in December 2020) and organisations (including GTCS and Education Scotland), to enhance understanding and advance the practice of LfS in all aspects of learning in Scotland.

In 2018, the Scottish Funding Council, Education Scotland, Scottish Government and others nominated Higgins along with Murray (GTCS) and King (LfSScotland) for one of the most prestigious awards in education, the Yidan Prize, in recognition of the international significance of their contributions to advancing LfS policy and practice in Scotland [5.5A, 5.5B, 5.5C]. In a supporting letter, Education Scotland's Senior Education Officer wrote *"It is the increasing view of countries around the world that Scotland has one of the most ambitious and coherent policy environments in relation to education for sustainable development. The three nominees have worked tirelessly and enthusiastically to help us reach this point"* [5.5B].

Scotland's Deputy First Minister and Cabinet Secretary for Education and Skills, John Swinney, praised the researchers' past, current and ongoing contributions to informing curricular development. Referring to Higgins' previous impact chairing the LfS National Implementation Group, Christie and Higgins' early influential research studies, which underpinned policy development and their 2020 publication which consolidated their earlier work (3.6), the Deputy First Minister stated that their work: *"provides the Scottish Government with a sound evidence base on which to further pursue relevant policy development including the delivery of Scotland's Learning for Sustainability Action Plan"* [5.6].

The research evidence for LfS has continued to drive education policy development. Between October 2019 and January 2020, the Scottish Qualifications Authority (SQA) formed a review group, which included Higgins, to consider the inclusion of LfS within national qualifications. The outcome was a commitment from the SQA to incorporate LfS within all new and revised National Courses, Skills for Work Courses and learning pathways – frameworks followed by all 5,406 Scottish schools [5.7]. In summary, the globally significant and high national policy status of LfS is now evident in it being an entitlement of all learners, a responsibility of all teachers, and a feature of both national assessments and school inspections.

### **Impact on Scottish teaching practice**

From 2015-2018, LfS Scotland and the GTCS secured GBP90,000 Gordon Cook Foundation funding to apply the research (3.1, 3.2, 3.3) to develop an online microsite and reflection tool to support students and teachers to enhance their understanding of LfS and their professional values [5.8]. The 2018 UNESCO Regional Centre of Expertise Awards for Innovative Projects on Education for Sustainable Development named the collaboration, which Nicol, Rae and LfS Scotland developed, an Outstanding Flagship Project. The accolade recognised the reflection tool's contribution to UN Sustainable Development Goal 4 (Quality Education) and Target 4.7 to ensure *"all learners acquire the knowledge and skills needed to promote sustainable development"* [5.9].

The British Council awarded Higgins, Christie and LfS Scotland over GBP900,000 through three separate projects from 2015 to 2021 to develop and deliver online professional development programmes to improve Scotland's teachers' knowledge and practice of LfS based on the unit's research (3.1, 3.2, 3.3). Between June 2015 and November 2020, 885 teachers from schools in 31 of Scotland's 32 local authorities have participated in different offerings of the Connecting Classrooms programme at various levels [5.10A]. In 2016, GTCS accredited the Connecting Classrooms programme [5.10B].

In 2017, the GTCS also introduced professional recognition awards to celebrate how teachers developed advanced expertise in an area through their professional learning. The GTCS Senior Education Officer stated that *"One of the largest categories of professional recognition is in LfS, and over 400 individuals have earned the award of Professional Recognition in this area by engaging in significant professional development individually or through an accredited professional learning programme such as Connecting Classrooms"* [5.3B].

**5. Sources to corroborate the impact**

5.1 Ministerial working group report 2016, Vision 2030+:

<https://education.gov.scot/improvement/Documents/res1-vision-2030.pdf>

5.2 LfS is an entitlement for all learners in the Scottish Government's Curriculum for Excellence:

<https://education.gov.scot/education-scotland/scottish-education-system/policy-for-scottish-education/policy-drivers/cfe-building-from-the-statement-appendix-incl-btc1-5/what-is-curriculum-for-excellence>

5.3 Evidence from the General Teaching Council Scotland (GTCS)

A) The GTCS Professional Standards include LfS (see especially p. 3, p. 4, and p. 6 of the Standards): <https://www.gtcs.org.uk/professional-standards/professional-standards-2021-engagement.aspx>

B) Testimonial from the Senior Education Officer, GTCS

5.4 LfS is embedded in Education Scotland's "How good is our school?" (4<sup>th</sup> Edition):

[https://education.gov.scot/improvement/Documents/Frameworks\\_SelfEvaluation/FRWK2\\_NIHeditHGIOS/FRWK2\\_HGIOS4.pdf](https://education.gov.scot/improvement/Documents/Frameworks_SelfEvaluation/FRWK2_NIHeditHGIOS/FRWK2_HGIOS4.pdf)

5.5 Yidan Prize nomination letters and nomination form:

A) Letter from the UNESCO Chair in Reorienting Education towards Sustainability, York University Toronto

B) Letter from the Senior Education Officer, Education Scotland

C) Yidan Prize full nomination form

5.6 Testimonial from John Swinney, Deputy First Minister and Cabinet Secretary for Education, Scottish Government

5.7 SQA commitment to Learning for Sustainability: <https://www.sqa.org.uk/sqa/80093.html>

5.8 GTCS LfS microsite: <http://www.gtcs.org.uk/LearningforSustainability/lfs-homepage.aspx>

5.9 Regional Centre of Expertise Flagship Awards 2018: Innovative Projects Education for Sustainable Development: <http://www.rcenetwork.org/portal/2018-rce-awards-innovative-projects-education-sustainable-development>

5.10 Evidence from the British Council describing the Connecting Classrooms UK programme

A) Testimonial from the Project Manager, British Council

B) British Council Evaluation: Connecting Classrooms Scottish programme (p. 27 of the report):

[https://www.britishcouncil.org/sites/default/files/connecting\\_classrooms\\_concise\\_report.pdf](https://www.britishcouncil.org/sites/default/files/connecting_classrooms_concise_report.pdf)