

Institution: University of Gloucestershire		
Unit of Assessment: UoA 23 – Education		
Title of case study: Changing university education for sustainability – practice-based research for curriculum innovation		
Period when the underpinning research was undertaken: 2010-2016		
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:
Dr Alex Ryan	Director of Sustainability	2008 – Present
Professor Daniella Tilbury	Dean of Sustainability	2007-2015
Dr Ingrid Mula	Researcher	2008-2015
Dr Ingrid Mula	PhD Student	2008-2011
Period when the claimed impact occurred: 2013-2020		
Is this case study continued from a case study submitted in 2014? N		
1. Summary of the impact (indicative maximum 100 words)		
<p>This research has driven innovation in higher education (HE), creating significant societal benefit by developing and implementing Education for Sustainability (EfS). Long-term cumulative impact is generated by equipping future graduates to advance sustainability in their industries and professions. Important immediate impacts through applications into policy frameworks, curriculum initiatives, course design, professional training and teaching practice included:</p> <ul style="list-style-type: none"> - Influence on the first EfS guidance issued by any HE quality agency worldwide; - Practice changed in 56 UK and European institutions, and sector initiatives at 48 UK and 12 Latin American institutions; - Citations in influential UN resources and HE innovation projects with international reach, including an online course with 70,000 learners in 192 countries to date. 		
2. Underpinning research (indicative maximum 500 words)		
<p>This body of research was conducted by Professor Daniella Tilbury, Dr Alex Ryan and Dr Ingrid Mulà, staff of the University's sustainability institute, funded through competitive bids. As lead organization, the University is an internationally recognized pioneer of sustainability. The institute co-ordinates a United Nations Regional Centre of Expertise in sustainability education.</p> <p>This research on HE curriculum innovation is part of a wider research and implementation programme. It commenced through a Marie Curie Incoming International Fellowship (2009-2011) awarded to Tilbury which enabled 4 EfS doctoral completions, in youth empowerment, social learning, learning environments and engineering education. Other focal points include:</p> <ul style="list-style-type: none"> • student-led applications of EfS (funded by National Union of Students) • global best practice in cultural diversity and EfS [3.1] (funded by UNESCO) • EfS principles applied to flexible learning [3.2] (funded by HE Academy). <p>The research on curriculum innovation in universities created the impact described in section 4 and was commissioned due to the University's track record for EfS innovation [3.3; 3.4]. This expertise secured funding via open tenders, for 2 large scale projects forming the underpinning research. Funded as capacity-building initiatives to accelerate change in HE curricula, the projects used action research and implementation at partner institutions. Their distinctive focus on professional practice, as well as the settings and frameworks shaping</p>		

that practice, generated unique 'first in field' strategic EfS research on:

i. Quality Enhancement Systems

Project: Leading Curriculum Change for Sustainability (2010-2012) [LCCFS]
Led by the University, partnering with Quality Assurance Agency (QAA) and 4 UK HE institutions.
Funder: HE Funding Council for England (Leadership Governance & Management Fund).

The initial project (LCCFS) was funded by the UK HE sector's one-off programme to incentivise universities to adopt sustainability, using research-based demonstration projects. This was the only project funded to situate EfS in the academic environment, in order to drive cross-portfolio curriculum change. It used action research in 5 diverse institutions and informed sector level policy development with the UK QAA.

Its senior advisory board, Chaired by the CEO of QAA, brokered sector collaboration on this new agenda with HE agencies, industry experts and students. The sector engagement activities and applied research outcomes from the institutional change projects informed its core output and online resource [3.5]. The project dialogues and capacity building activities with QAA during the research provided an agreed plan and approach to development of the first UK sector policy guidance on EfS (described in section 4).

ii. Academic Professional Development

Project: University Educators for Sustainable Development (2013-2016) [UE4SD]
Led by the University, partnering with 52 educational organisations in 33 countries across Europe.
Funder: European Commission (Lifelong Learning Programme).




The second major project (UE4SD) used the expertise developed in LCCFS to form a dedicated network across Europe, build their capacity and provide new training on EfS implementation [3.6]. The distributed research led by the University co-ordinated 52 partners across 4 regional teams.


Stage 1 reviewed national policies and identified good practice from 33 research partner countries. An overview report on European EfS policy was produced and 3 annual global state of the art policy and practice reports were developed by the lead institution. Stages 2 and 3 used the findings to produce new resources based on leading practice in diverse university and country contexts:

- A Leading Practice Publication [3.7] was published with 13 best European practices.
- A new Training Academy developed and delivered with 4 Spanish university teams.
- An Online Resource Platform with 31 good practices and films with leading practitioners.


Together these projects developed expertise and practice in 56 partner organisations, generating direct impacts via research applications and new knowledge through scholarly outputs.

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

- 3.1. Tilbury, D.; Mulà, I. (2009). [*Review of Education for Sustainable Development Policies from a Cultural Diversity and Intercultural Dialogue: Gaps and Opportunities for Future Action*](#). Paris: UNESCO
- 3.2. Ryan, Alex  and Tilbury, Daniella (2013) [*Flexible Pedagogies: new pedagogical ideas*](#). Project Report. Higher Education Academy.
- 3.3. Ryan, Alex  (2012) [*Education for Sustainable Development and Holistic Curriculum Change: A Review and Guide*](#). Project Report. Higher Education Academy, York.
- 3.4. Ryan, Alex  and Cotton, Debby (2013) [*Times of Change: Shifting Pedagogy and Curricula for Future Sustainability*](#). In: *The Sustainable University: Progress and Prospects*. Earthscan, London, pp. 151-167. ISBN 97

3.5. Ryan, Alexandra  and Tilbury, Daniella (2013) [Uncharted waters: voyages for Education for Sustainable Development in the higher education curriculum](#). Curriculum Journal. doi:[10.1080/09585176.2013.779287](#)

3.6. Mulà, Ingrid, Tilbury, Daniella, Ryan, Alex , Mader, Marlene, Dlouhá, Jana, Mader, Clemens, Benayas, Javier, Dlouhý, Jiří and Alba, David (2017) [Catalysing Change in Higher Education for Sustainable Development: A Review of Professional Development Initiatives for University Educators](#). International Journal of Sustainability in Higher Education, 18 (5). pp. 798-820. doi:[10.1108/IJSHE-03-2017-0043](#)

3.7. Kapitulčinová, Dana, Dlouhá, Jana, Ryan, Alex , Dlouhý, Jiří, Barton, Andrew, Mader, Marlene, Tilbury, Daniella, Mulà, Ingrid, Benayas, Javier, Alba, David, Mader, Clemens, Michelsen, Gerd and Mally, Katja Vintar (2015) [Leading Practice: Professional development of university educators on Education for Sustainable Development in European countries](#). UE4SD, Prague. ISBN 9788087076224

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

This action research was designed and developed with end users, to create new knowledge, practice and resources that deliver impact through application in curricula across diverse educational settings. Cumulative impact on policy and practice has been generated during and beyond the funding period. Three key areas of impact are identified:

i) Developing policy frameworks for HE curricula

The original LCCFS research had immediate direct impact on UK curriculum frameworks through the active collaboration with the UK Quality Assurance Agency (QAA) [5.1]:

- EfS was included in the revised UK Quality Code for HE published October 2013, as a cross-cutting theme for prioritisation in university learning and teaching strategies.
- The project's senior Advisory Board prepared development plans and key stakeholder maps for the UK QAA *Education for Sustainable Development Guidance*, published June 2014. Tilbury & Ryan were invited members of the QAA expert group convened to develop this framework - the first EfS guidance issued by any national HE quality agency worldwide [5.2]. The 2014 QAA ESD guidance cited the LCCFS output 'Guide to EfS and Quality' as an implementation resource, to share the results of the research pilots and the strategic guidance to HE agencies.
- Ryan was invited member of the 2019-2020 QAA expert group that revised the UK ESD guidance, to contribute this practice-based research expertise from multiple institutions. Its improved user toolkit, selected using quality criteria, references both the LCCFS and UE4SD resources and cites the University's industry partnership work as its leading example of ESD curriculum practice. (*note: the guidance release date of December 2020 was delayed by the coronavirus pandemic – publication date is now 29th March 2021*).

Wider impact to end users - university educators (and ultimately students) - arises from use of this guidance, part of the *UK Quality Code for Higher Education* used by all UK HE institutions. It is the reference point for institutional audits and a cross-cutting resource for educators in all disciplines and staff leading curriculum enhancement programmes. The QAA now propose to cross-reference the guidance in all future UK subject benchmark statements [5.1] and require ESD expertise in future benchmarking panels, to assist the onwards application of the guidance.

ii) Influencing sector programmes and thinking

Engagement with QAA and other HE agencies and sector actors in the LCCFS and then UE4SD research led to further impacts on educational programmes and projects applying EfS principles:

- The HE Academy's *Green Academy* of 18 universities delivering new EfS initiatives

used the online resource from LCCFS as a change management tool and appointed Tilbury as mentor to 2 institutions. HE Academy commissioned Ryan to prepare a strategic insights report on 3 pioneer institutions in EfS to support 18 university teams between 2011-2014 [3.3]. The University was one of the 3 selected case studies.

- The HE Academy commissioned Ryan & Tilbury to lead its *Flexible Pedagogies* research strand [3.2] in 2013 as part of a sector-wide UK Flexible Pedagogy initiative. This 5-strand research led by Professor Ron Barnett at the University of London, Institute of Education, generated the 2014 sector report *Conditions of Flexibility* [5.3]. The *Flexible Pedagogies* report is cited in the revised 2018 UK Quality Code for HE, as one of its key guidance resources on Learning and Teaching [5.4].
- The National Union of Students applied the frameworks and principles from LCCFS and UE4SD in the development of their *Responsible Futures* change programme. Launched in 2014, this initiative forged collaborations between 30 Students' Unions and tertiary institutions, to deliver EfS [5.5]. The new NUS sustainability arm SOS-UK has used the research insights to inform its wider EfS programme and campaigns.
- UNECE selected UE4SD as a case study in its best 2016 practice review shared widely with EfS practitioners and networks in all levels of education - UNECE *10 years of UNECE Strategy for ESD – Good Practices and Lessons Learned* [5.6]. The UN Education for Sustainable Development programme cited the LCCFS toolkit as a key resource in the 2017 UN publication *ESD Goals: Learning Objectives* [5.7].
- Knowledge impacts from scholarship to define and advance this practice included 1 article from the LCCFS research and 20 articles linked to the UE4SD research, authored by 11 UE4SD project partners and 9 contributors beyond the partnership.
- The Executive Lead for sustainability at University of Western Sydney used the research in high impact international projects as Australian National Senior Teaching Fellow, as well as publications on quality enhancement and education change [5.8].

iii) Changing HE curriculum practice

The research influenced teaching design and delivery in university and country contexts, within and beyond the original research partners. Educators and professional end users include:

- The LCCFS research pilots developed the expertise of 4 senior leads in 4 UK partner universities, who created and delivered cross-curricular quality improvement projects.
- The UE4SD training academy intensive was delivered to 4 Spanish university teams, who designed and implemented cross-curricular EfS curriculum change projects in their institutions (Autonomous University of Barcelona, University of Girona, University of the Basque Country/University of Seville, University of Granada).
- ARIUSA Latin American HE sustainability network adopted the UE4SD model and created a Spanish language version of the training in 2017. The AcSULA (Academy Sustainability Latin America) model, adapted for the Latin American HE context, was delivered in Colombia, Peru and Chile. The Spanish UE4SD teams became mentors to 4 universities in each country that participated in AcSULA annually since 2017.
- The research outputs and applied case studies generated have been used by universities in the UK and beyond, to inform EfS teaching development initiatives. University of the Arts London applied the research to its curriculum transformation work, first year offer and online course developments, as well as an EU-funded fashion education initiative with 3 European universities. Ryan was invited to its

Advisory Board with high-value industry partners to increase professional impact [5.9]. University of Western Sydney adopted strategic insights from LCCFS & UE4SD to guide its EfS initiative, curriculum review, and RCE public engagement work [5.8].

- The research led to curriculum change at the host institution, securing £60K of funding for 20 education enrichment projects from 2013-2016. A new curriculum redesign scheme using UE4SD findings has attracted £20K annually since 2016 and changed teaching and assessments in 15 unique courses and via 2 cross-curricular change projects. This research-based good practice has been an annual core delivery session in its PG Certificate in Academic Practice since 2015.

Policy frameworks, curriculum initiatives, course redesign, training activities and teaching improvements resulting from this research have ongoing and long-term impact to society. Through these applications, the educators who are direct research users are equipping cohorts of future graduates, the ultimate research beneficiaries, to advance sustainability in their industries and professions. Confirmation of these impacts is provided in the testimonial letters from Meg Baker [5.5] and Professor Dilys Williams [5.9], for example guiding the first opensource online fashion course using EfS and reaching 70,000 learners in 192 countries.

The lead researchers received professional recognition for this practice-based research, with Tilbury gaining HE Academy Principal Fellowship in 2015 and Ryan awarded National Teaching Fellowship in 2017. This research was cited as a case study in the UNEP *Greening Universities Toolkit* (2019) [5.10]. Both LCCFS and UE4SD were shortlisted Finalists in the UK Green Gown Awards (2012, 2017).

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

- 5.1 Dr Ailsa Crum, Director of Membership, Quality and Standards, Quality Assurance Agency (UK) – corroborating testimonial provided.
- 5.2 Quality Assurance Agency (QAA) (2014) [Education for Sustainable Development: guidance for UK higher education providers](#)
- 5.3 Higher Education Academy (HEA) (2014) [Conditions of flexibility: securing a more responsive higher education system](#)
- 5.4 Quality Assurance Agency (QAA) (2018) [UK Quality Code for Higher Education Advice and Guidance: Learning and Teaching](#)
- 5.5 Meg Baker, Director of Education, SOS-UK (Students Organising for Sustainability/National Union of Students) – corroborating testimonial provided.
- 5.6 United Nations Economic Commission for Europe (UNECE) (2016) [10 years of UNECE Strategy for ESD – Good Practices and Lessons Learned](#) (pp. 72-3)
- 5.7 United Nations Educational, Scientific and Cultural Organization (UNESCO) (2017) [Education for Sustainable Development Goals: learning objectives](#) (p. 60)
- 5.8 Professor Geoff Scott, Emeritus Professor of Higher Education, University of Western Sydney. National Senior Fellow, Office for Teaching and Learning Australia – corroborating testimonial provided.
- 5.9 Professor Dilys Williams, Professor of Fashion, Design and Sustainability and Director of the Centre for Sustainable Fashion. London College of Fashion, University of the Arts London – corroborating testimonial provided.
- 5.10 United Nations Environment Programme (UNEP) (2014, republished 2019) [Greening Universities Toolkit 2.0: Transforming universities into green and sustainable campuses: a toolkit for implementers](#). (pp.138-9)