

Sustainability in Higher Education: Beyond the Green Mirror



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Abstract With living labs and co-production increasingly playing a vital role in universities, the University of Bristol is taking significant and drastic steps in incorporating both of these themes into its strategic planning. This paper discusses how the Bristol Futures integrated approach, and specifically its Sustainable Futures pathway, are taking sustainability beyond its obvious and most frequently used links to connect it to subjects like homelessness and resilient cities, personal happiness and wellbeing and a sense of purpose in life. The aim of this approach is to provide a framework through which the learners can engage with other roles and disciplines, while using sustainability as a lens to achieve this. The living lab model provides us with the tools and approaches needed in order to use a new online Sustainable

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Futures course, designed by a University of Bristol team as a platform where learners from across the world can interact. The focal point of Bristol Futures is a dual approach—that learning, and change come from the dual approaches of theoretical understanding and practical experience. Using sustainability as a lens and the Sustainable Development Goals as a framework, students explore local and global challenges through a series of interdisciplinary case studies (Wood 2004) and reflect on how they would best be positioned to address those challenges (Martin and Jucker 2005). It then harnesses the University of Bristol's international award-winning reputation and the Bristol Students' Union *Learn Act Engage Create* approach to give students engaged learning opportunities to turn theoretical study of sustainability into practical action in communities. Bristol Futures provides students with a unique combination of skills that will enable them to become agents of change on a local and global level, using online courses, face-to-face study and engaged learning to ensure they take sustainability outside the lecture rooms and turn it from theory, to practice and a way of life.

Keywords Higher education · Sustainability · Education for sustainable development · University of Bristol

1 Introduction

ESD has real impact and meaning globally, as evidenced through the outputs of decades of efforts championed, amongst others, by UNESCO. This includes tackling issues of climate change and cultural diversity, advising policy makings, empowering learners and leading change through education, discussion and international initiatives (UNESCO 2014). One of the major culminations of these efforts is the Global Action Programme (GAP) on Education for Sustainable Development (UNESCO 2015). Other initiatives include the Sustainable Development Goals Accord (SDG Accord) that draws together the University and College sector's collective response to the SDGs (launched in September 2017, see <http://www.sdgaccord.org/>).

The University of Bristol is a GAP and SDG Accord partner institution. In response to these initiatives, it has developed *Bristol Futures*, a creative and integrated approach to curriculum development which aims to develop student skills and values in *sustainable futures, global citizenship and innovation & enterprise*. The Sustainable Futures pathway takes sustainability beyond its obvious and most frequently used links, to connect sustainable development to subjects like homelessness and resilient cities, personal happiness and wellbeing and a sense of purpose in life (Sterling 2003; Sterling 2010; Sterling 2011). This paper will give a brief history of Education for Sustainable Development work at University of Bristol. We will introduce the new Bristol Futures initiative and we will discuss the Sustainable Future online course and the opportunities and challenges it has presented in developing students with the skills and values needed to tackle local and global challenges.

2 Sustainability at Bristol

Much like the City of Bristol, the University of Bristol has a long history of sustainability action, winning numerous awards for its work. Sustainability remains one of the central strands shaping the University's vision of the future. The University has been working to create a culture of sustainability for many years, pioneered by the work of Professor of Sustainability and Law, Chris Willmore, and Martin Wiles, Head of Sustainability (Walsh, in review). From 2011, University of Bristol joined the HEA Green Academy initiative and a newly formed ESD team developed a five-ring model, "to map and assess progress for sustainability in four key areas: estates, the informal curriculum, research and the formal curriculum, which are encompassed by community" (Tierney et al. 2015, p. 509), to demonstrate that we need to not only focus on changes in the formal curriculum to include economic, environmental and social sustainability, we need to reinforce what students are learning outside of the classroom through the subliminal curriculum and their extra-curricular activities.

The ESD team developed several projects to support academics and students to embed sustainability in their curriculum. They developed a curriculum mapping project which helped to understand the changing nature of the formal curriculum, they conducted regular reviews of the ESD content within all our units and programmes (Tierney et al. 2015). This helped shape engagement with academic schools. The team provided a wide range of online resources, tailored for each school, as well as delivering training sessions to staff and students as part of the CREATE scheme, the University's continuing professional development scheme for academics. Another key method for embedding ESD within the curriculum is through the Green Apple Scheme, a funding mechanism that supports academics who wish to develop new teaching and learning practices. Through this scheme, teaching staff receive support to develop projects that embed ESD principles within their discipline, and students can contribute ideas and suggestions to help shape the future of their courses.

In 2013, the University of Bristol Students' Union (Bristol SU) received £175,000 of the NUS' Students' Green Fund to develop Get Green—a two-year project which aimed to create a transformational change in student attitudes and behaviours towards sustainability and sustainable development. Bristol SU aimed to build on the work of the University of Bristol ESD team to facilitate students to develop the skills and values to create positive sustainable change, leading to a cultural change towards sustainability (Walsh 2015). To deliver on an extensive range of targets the Get Green team developed a four-step approach—Learn Act Engage Create—to engage students in economic, social and environmental sustainability. The approach was underpinned by active learning theory and maximised peer-to-peer engagement. The four-step approach involved students engaging with ESD through their formal curriculum and then building on their experiences by participating in, and leading, projects and campaigns outside of their course (Walsh 2015; Walsh, in review).

3 The City of Bristol

Bristol has a strong tradition of activism, with citizens who are engaged, expressive and ever-ready to get involved, and the city of Bristol has many firsts. The City has a history as a hub for sustainability activism. Windmill Hill City Farm was the first city farm to be created outside of London in 1976, it's a place where residents can learn about nature and sustainable food practices (Brownlee 2013). The Bristol Green Capital Partnership is a unique collection of over 800 organisations in the City who share a vision for a sustainable Bristol, they connect and collaborate on events and campaigns around energy, waste, food, air quality and nature (<http://bristolgreencapital.org/>). In 2015, Bristol was the first UK city to be named European Green Capital. This award celebrates and promotes innovative responses to urban environmental challenges. Bristol impressed with its commitment to clean transport and energy, and its role as a low-carbon hub of industry. The city influenced international policy at the UN climate change summit in Paris in 2015, sharing best practice and presenting ambitious sustainable action. Bristol was the UK's first cycling city, birthplace of the National Cycle Network and home to Sustrans, the UK's sustainable transport charity. One major achievement of Bristol students through European Green Capital activity was the contribution of over 100,000 h of students volunteering for sustainability-related projects in one year (Clayton et al. 2016).

4 Living Labs

In the Joint Program Initiative (JPI) Urban Europe Strategic Research and innovation agenda an urban, a living lab is defined as: "A forum for innovation, applied to the development of new products, systems, services, and processes in an urban area; employing working methods to integrate people into the entire development process as users and co-creators to explore, examine, experiment, test and evaluate new ideas, scenarios, processes, systems, concepts and creative solutions in complex and everyday contexts" (JPI Urban Europe 2013). Additionally, and as is discussed in Ariane König's and James Evans' book on "Experimenting for sustainable development? Living laboratories, social learning and the role of the university", living labs can provide a space where multiple stakeholders can address local and/or global challenges and generate knowledge that is applicable to real-world situations (König and Evans 2013). Apart from what happens within the living lab itself, it is crucial to have a good interaction between the lab, and what is defined as 'a real-world situation' to achieve long term impact within and outside of the lab. Much like we need collaboration between disciplines, there is also an equal need for collaboration and co-production of knowledge and initiatives across sectors to address the societal challenges we are facing globally and locally. The City and the University of Bristol interact dynamically, and are in a way, very similar systems that interact and overlap with each other both spatially and temporally (Bourn 2009). That interaction can and

should play an integral part of how we understand sustainability and how we can mould the future of the university, the city, the students and residents. The Bristol Futures initiative introduces local challenges in the University of Bristol's curriculum, by showcasing what the residents of the City of Bristol are doing to address these challenges. We give students an insight into how the 'City' views sustainability and what it means for wider community. The students can find similarities between those initiatives and their own interests and identify where they can join efforts with other teams and increase impact. They can also identify new challenges or ways to engage, interact in a way that helps the community, and this is fertile ground for new, innovative thinking, and genuine bottom-up solutions to the problems faced by the city and the university. Using the living lab approach, untapped human resources concentrated by the University can be fed back into the community, producing a fertile, iterative way to exchange knowledge, expertise and life experiences. By presenting this vibrant community to our students and learners, we create strong links between the 'student-resident' and 'the University-the City' that transcend those identities and form a new identity, that of the 'engaged citizen'.

5 Bristol Futures

Bristol Futures is one of the University of Bristol's strategic projects that seeks to equip all students with the skills to be informed citizens in our changing world and will be completed in three phases (University of Bristol 2016). The core of Bristol Futures is formed by three 'pathways', defined as:

1. *Sustainable Futures (SF)*—equipping students to engage with the challenges of globally improving the quality of life for humanity while sustaining the natural environment and finding ways of living with the environmental change that we cause.
2. *Global Citizenship (GC)*—fostering the critical self-reflection and understanding students' need to negotiate the challenges of energy and resource management and food security, tackle international insecurity and engage with culture and heritage in an increasingly globalised world.
3. *Innovation and Enterprise (IaE)*—enabling students to act on their ideas, use their initiative, and shape change in diverse sectors.

A progressive initiative that challenges traditional forms of pedagogy by combining innovative teaching and learning strategies. Throughout its growth, Bristol Futures has always tried to be first and foremost inclusive of all students, by providing online courses open to everyone and both postgraduate and undergraduate students will see the three themes reflected in their core curricula. At its heart, it aims to reach all students, not just the most engaged, and create opportunities that will build inspiring as well as inspired graduates. Additionally, it is fully co-designed. The Bristol Futures Student Advisory Group consists of almost 100 students from across the University. It has advised the project board on curriculum, branding, the

personal development planner and the online element of Bristol Futures. The group is a diverse community of students who are passionate about education and unafraid to voice their opinion on the various areas of Bristol Futures they have co-designed. Other areas of the project invite students' participation through regular workshops, in addition to the core advisory group. This aspect of co-creation has been a unique element, that makes this initiative very different from similar initiatives in other universities.

6 The Sustainable Futures Online Open Course

A study by MIT shows that online courses can teach at least as effectively as traditional classroom courses, additionally, they found that this is true regardless of how much preparation and knowledge students start out with (<http://hdl.handle.net/1721.1/90300>). Evidence shows that the students of the University of Bristol are engaged. A recent University of Bristol Students' Union (Bristol SU) survey in 2017 of c. 1000 students showed that 17% of students volunteer on Bristol SU projects and 33% volunteered outside of the University on community-led social or environmental justice projects (unpublished internal data provided by Students Union, 2017). This section will focus on the Sustainable Futures online open course (one of three themed courses offered by the University of Bristol from 2018). The course runs over four weeks, with three hours of interactive and self-directed content per week. This course introduces learners to sets of challenges where several sustainable development goals are grouped. The learner can then fully understand and experience the purpose of sustainable development, and how the sustainable development goals can contribute towards the improvement of the quality of life of humanity, while preserving and improving the earth itself. The learner is not expected to have a previous comprehensive understanding of such challenges and the different approaches to engage with them. They are given the chance to explore several case studies of individuals and organisations which have engaged with some of these challenges. The course was designed by an interdisciplinary team at the University of Bristol: Chris Preist, Professor of Sustainability and Computer Systems; Eleni Michalopoulou, a PhD Student in Atmospheric Chemistry; Dr Aisling Tierney, ESD research associate and archaeologist; and Hannah O'Brien, online and blended learning designer. The diversity of the team's expertise ensured a balanced design that speaks to learners from different subject backgrounds. Case studies formed the core of on which text the learning design framework on which text-based and interactive elements were developed upon.

As discussed above, for the living lab approach to have a long term, and applicable—in a 'real world situation'- impact, the stakeholders need to understand each other's context to work together and promote knowledge and research and offer solutions. Co-creation and co-production were both key ethical and design principles. As such, the design team invited the participation and contribution from beyond academia. The results of this approach achieve the following ambitions:

- (a) The learner interacts with more ideas than those found in a typical academic environment.
- (b) The student (and learner) is given the opportunity to explore what sustainability looks like for the City of Bristol as well as the University of Bristol and through this they can:
 - (1) Identify similar challenges that the two stakeholders are facing.
 - (2) Identify similar bottom-up initiatives that were developed by the two stakeholders independently.
 - (3) Examine similar challenges at different scales.
 - (4) Learn about the interaction of the university and the city through policy making, bottom-up initiatives.
 - (5) Explore different roles that people can adopt when striving to address a challenge.
- (c) The student is exposed to the theory behind holistic sustainability in an interactive way through the four weeks of the course and through the discussion that will take place in the course.
- (d) Through the above, develop and adopt the identity of the engaged citizen.

Learners are given information on how to join local initiatives, ways to contribute and interact as well as spaces and events where they can engage with others. Additionally, and in order to give the student and the learner a sense of the bigger picture, there are also challenges not strictly local to Bristol. This showcases the scale of modern challenges and the need for collective action beyond the University, and the City. By engaging with these case studies, as well as the rest of the course, learners engage with how knowledge of sustainable development has been applied in different situations, the nature of the challenge, the approaches used to tackle it, and how the different roles involved interact with each other. We also present them with more personal reflections from the people involved: what motivates them, what difficulties they have faced personally and what helps them through these difficulties. The case studies are compiled by stories from people who are promoting positive mental health and happy communities to tackling local homelessness and working with large corporations to reduce microplastics, and in doing so, hopefully, inspire the learner to learn more or even become involved themselves. Instead of presenting our students with a list of Sustainable Development Goals, we decided to use sustainability and therefore, the sustainable development goals themselves, as a lens through which the student is given the opportunity to closely examine small and large-scale challenges. Starting from mental health and then moving on to Bristol specific and global specific challenges, we take the student through a journey of personal, local and global sustainability. By focusing more on self-reflection, we give the student time to explore different roles through which they can address modern day challenges. This course is for anyone interested in living in a way which makes a difference in the world, in ways both small and large. It gives the learner the chance to reflect on what they do in their life already, as well as how they could make changes for the future. During this course the learners have the opportunity to reflect on what makes a 'happy' and

‘satisfying’ life, in general and for them personally, to understand the different ways people find a sense of purpose and fulfilment in their life and activities, exploring what gives them such a sense of purpose in this way, to understand how one rarely ‘make a difference’ in the world on their own. Also, they are shown how change happens through several actors playing different roles and working together to reach a shared goal as well as the timescales of that change. They can then reflect on which types of roles appeal to them personally (both in terms of skills exercised and what they enjoy) and consider how they interact with others’ roles. Finally, they are shown some of the challenges that they may face when attempting to ‘make a difference’ in the world: ranging from the personal to the global.

7 Conclusion

At the University of Bristol, sustainability is now a central pillar of all educational efforts through the theme of Sustainable Futures. This theme permeates the taught curriculum and optional voluntary opportunities alike so that all students can engage meaningfully with sustainability. Students have also been an integral part of the development of this position so that Sustainable Futures responds to students’ interests and priorities. The goal of inclusivity and co-production also extends to our local and international communities. This is most visible in the design of the online Sustainable Futures course that features case studies and contributions from a broad spectrum of stakeholders. Institutionally, the University has embraced a broad meaning for sustainability, not just in theory but in its practice of what it considers to constitute “sustainability”. The case studies that form the core of the online course include topics such as food poverty, microplastics, eco-tourism, climate change, and homelessness. In our degree programmes, reviews of the curriculum use UNESCO’s definition of ESD (political, environmental, economic, social and cultural sustainable development) (Tierney et al. 2015). Both our research and teaching approaches are increasingly engaging with the SDGs. The online course presents Sustainable Futures as a means to share the Bristol approach globally, to create a digital “living lab” that connects global learners and local communities. Here, it takes forward the concepts of *Learn Act Engage Create* and the wider Bristol ethos of putting theory into practice. The focus on skills and self-reflection circumvents a didactic approach to learning towards a meaning-driven context-based reflexivity. The online course also presents Bristol’s concern with catering for its own students and communities, and the institutional ethical imperative to be an instrument for positive change in the world.

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