Sustainability, Curriculum and Academics in Higher Education

Presentation by
Georgina Gough
(Senior Lecturer in Education for Sustainable Development)

Jim Longhurst
(Assistant Vice Chancellor – Environment and Sustainability)

27-29 June 2017
Sustainable Development and Planning

• “Planners, environmentalists, architects, engineers, policy makers and economists have to work together in order to ensure that planning and development can meet our present needs without comprising the ability of future generations”

• “...interaction between different regions ...developing new methodologies for monitoring ...planning and implementation of novel strategies ...mitigating environmental pollution ...sustainable use of available resources”

• “SD and P 2017 will bring together academics, policy makers, practitioners and other stakeholders from across the globe to discuss the latest advances in the field, ...new academic findings and their application in planning and development strategies, assessment tools and decision making processes”

These processes must form part of the education of practitioners of the future
Session overview

• Why is sustainability in the HE curriculum important?

• What are we trying to do and how are we going about it?

• How can we support academics in this process?

• What has the impact been?

Key lessons: Flexibility, support and persistence
Why is sustainability in the HE curriculum important?

• Education for sustainable development
• Research and knowledge creation
• Influencing others
• Common purpose (internal and external)
• Institutional alignment?
• Purpose for being?
SDGs and HE

Selected connections:
SDG8
- HEIs as places of work
- HEIs as producers of future employees
- HE as a generator of economic activity

SDG9
- Research is about innovation
- HEIs have access to intelligence, creativity, dedication and enthusiasm

SDG17
- HEIs work within their locations/regions
- HEIs bridge private and public sector
- HEIs and their Students’ Unions
Session overview

• Why is sustainability in the HE curriculum important?

• **What are we trying to do and how are we going about it?**

• How can we support academics in this process?

• What has the impact been?

*Key lessons: Flexibility, support and persistence*
Strategy 2020 ambition

To be a university recognised for the success and impact of our professionally-recognised and practice-oriented programmes; our strong industry networks and connections; our agile ways of working; and our inclusive and global outlook and approach.
ESD ambition

To ensure that a sustainability culture permeates our curriculum, research and the knowledge base and behaviour of our staff and students
Key actions to support progress

• Annual meetings
• Monthly meetings with internal KE group
• Ad hoc meetings
• Annual reporting
• Surveys
• Observation

Formal and Informal
Session overview

• Why is sustainability in the HE curriculum important?

• What are we trying to do and how are we going about it?

• **How can we support academics in this process?**

• What has the impact been?

*Key lessons: Flexibility, support and persistence*
Academics, curriculum and sustainability

- Enthusiastic for principles
- Often already doing relevant work (knowingly or otherwise!)
- Psychological barriers include insecurity and academic anxiety
- Lack of time and perceived lack of demand are also relevant
Student demand

Do students expect universities / colleges to take action on sustainability?

- Sustainable development is something all course tutors should be required to incorporate within their teaching (n=7259):
  - Agree: 52%
  - Neither: 27%
  - Disagree: 19%

- Sustainable development is something which I would like to learn more about (n=7256):
  - Agree: 61%
  - Neither: 26%
  - Disagree: 10%

- Sustainable development is something which all university / college courses should actively incorporate and promote (n=7256):
  - Agree: 75%
  - Neither: 16%
  - Disagree: 7%

- Sustainable development is something which universities / colleges should actively incorporate and promote (n=7267):
  - Agree: 87%
  - Neither: 9%
  - Disagree: 0%
New graduates in my sector need sustainability knowledge and awareness of sustainable professional practice.

A. Agree, these are essential
B. Agree, but these are currently desirable rather than essential
C. Disagree, these are not currently a significant feature of employment in my sector.
What are we doing to support academics to further progress?

Commitment
Staff resource
Engagement
Partnerships
Students
Networks

Resources
Staff development
QMEF
Reporting
Celebrating
Setting tasks...
Our SDG ambition

To undertake conscious and meaningful assessment of the alignment between the activities and actions of the institution and the UN Sustainable Development Goals
How have we begun to assess UWE’s contribution to achieving the SDGs?

**Defining priorities**
- Strategy 2020
- Sustainability Plan
- ISO 14001

**Setting goals**
- ISO 14001
- Risk register
- Sustainability Plan
- Strategy 2020
- Own goal setting

**Integrating**
- Internal and external presentations
- Roles and responsibilities
- Terms of reference and reporting templates
- Graduate attributes

**Reporting and communicating**
- Working with others
- Internal and external reporting standards
- Sharing and listening
Supporting staff

No quick wins!

- Non-obligation and flexible deadlines
- Provision of templates, examples and guidance
- Allowing local interpretation of task
- Personal support from institutional lead and peers
SDGs mapping: Prompt questions

• Where/how do constituent modules offer students the opportunity to learn about issues aligned to sustainable development (SDGs and their associated targets)?

• Is consideration given to the ways in which these issues are relevant to the discipline and its associated professions?

• How might professional practice be influenced/affected by measures introduced to mitigate against issues such as inequality and climate change?
SDGs mapping: Prompt questions

• How are students prepared for becoming future-facing and globally responsible during the course of the programme?

• How are approaches to teaching and learning which align to ESD incorporated into the programme (QAA-HEA ESD Guidance)?

• Consider the formal and informal curriculum: The whole student experience
Human Geography

Which of the issues represented in the SDG targets are core to the Human Geography programme?

Which modules are most focused on issues of relevance?
BA (Hons) Geography

Issues of relevance
Place In Undergraduate Programme

1. ZERO HUNGER
- Food security
- Sustainable food production systems
- Agricultural practices
- Global trade agreements and world agricultural markets

Modules:
- Geography of Security
- Water and Development
- Feeding the World

2. CLEAN WATER AND SANITATION
- Universal access to safe and affordable drinking water
- Integrated rural water management
- International cooperation and capacity building support for developing countries
- Water use by tourism industry

Modules:
- Integrated Water Management
- Geographies of the Global South
- International Tourism Development and Environment

3. AFFORDABLE AND CLEAN ENERGY
- Increasing the share of renewable energy in the global power mix
- International cooperation to facilitate access to clean energy

Modules:
- Managing Global Resources
- Renewable Energy

4. DECENT WORK AND ECONOMIC GROWTH
- Sustainable economic development
- Sustainable management of livelihoods
- Global value chains and equitable employment

Modules:
- Transforming China
- Geographies of Globalisation
- International Tourism Development and Environment

5. SUSTAINABLE CITIES AND COMMUNITIES
- Inclusive and sustainable urbanisation
- Green and socially just urban areas
- Gigacity policies and peace in megacities

Modules:
- Environmental Challenges
- Geographies of the Global South

6. RESPONSIBLE CONSUMPTION AND PRODUCTION
- Human rights abuses associated with production of consumer goods
- Sustainable management and efficient use of resources
- Human rights and sustainable development goals

Modules:
- Environmental Challenges
- Geographies of Globalisation

7. COLLABORATION
- Climate change science
- International resources for mitigating climate change
- Intergovernmental and international strategies and policy relating to climate change

Modules:
- Environmental Challenges
- Geographies of Globalisation

8. LIFE BELOW WATER
- Management of common global resources
- Marine environment
- Coastal and ocean management

Modules:
- Geographies of Globalisation
- Marine Environment

9. LIFE ON LAND
- Management of common global resources
- Forests and ecosystems
- Environmental conservation

Modules:
- Geographies of Globalisation
- Marine Environment

10. PEACE AND JUSTICE STRONG INSTITUTIONS
- Contemporary challenges posed by globalisation
- Transnational authorities and sustainable development
- International crime and security building

Modules:
- Geographies of Globalisation
- International Tourism Development and Environment

11. REDUCED INEQUALITIES
- Global trade systems, including fair trade
- Sustainable orientations and management of global poverty

Modules:
- Geographies of Globalisation
- International Tourism Development and Environment

12. GENDER EQUALITY
- Equal rights and economic resources
- Labour markets

Modules:
- Geographies of Globalisation
- International Tourism Development and Environment

13. CLIMATE ACTION
- Human rights abuses associated with production of consumer goods
- Sustainable management and efficient use of resources

Modules:
- Environmental Challenges
- Geographies of Globalisation

14. INDUSTRY INNOVATION AND INFRASTRUCTURE
- Sustainable transport
- Sustainable infrastructure development

Modules:
- Geographies of Globalisation
- International Tourism Development and Environment

15. PEACE AND JUSTICE STRONG INSTITUTIONS
- Contemporary challenges posed by globalisation
- Transnational authorities and sustainable development

Modules:
- Geographies of Globalisation
- International Tourism Development and Environment

16. PARTNERSHIPS FOR THE GOALS
- Global trade systems, including fair trade
- Sustainable orientations and management of global poverty

Modules:
- Geographies of Globalisation
- International Tourism Development and Environment

17. QUALITY EDUCATION
- Management of global health risks
- Gender equality

Modules:
- Geographies of Globalisation
- International Tourism Development and Environment

UN Sustainable Development Goals (SDGs)

- Goal 1: No poverty
- Goal 2: Zero hunger
- Goal 3: Good health and well-being
- Goal 4: Quality education
- Goal 5: Gender equality
- Goal 6: Clean water and sanitation
- Goal 7: Affordable and clean energy
- Goal 8: Decent work and economic growth
- Goal 9: Industry, innovation and infrastructure
- Goal 10: Reduced inequalities
- Goal 11: Sustainable cities and communities
- Goal 12: Responsible consumption and production
- Goal 13: Climate action
- Goal 14: Life below water
- Goal 15: Life on land
- Goal 16: Peace and justice, strong institutions
- Goal 17: Partnerships for the goals
Architecture

Which modules of the architecture programmes deliver learning relevant to the SDGs?
BEng (Hons) Architecture & Environmental Engineering

1. NO POVERTY
   - Connections still under consideration

2. ZERO HUNGER
   - Connections still under consideration

3. GOOD HEALTH AND WELL-BEING
   - Modules: Building Physics & Services (Level 1) Engineering Buildings for Use (Level 3.1) Collaborative Practice (Level 3.1) Energy Management & Performance Evaluation (Level 3.2)

4. QUALITY EDUCATION
   - Modules: Building Physics & Services (Level 1) Engineering Buildings for Use (Level 3.1) Collaborative Practice (Level 3.1) Energy Management & Performance Evaluation (Level 3.2)

5. GENDER EQUALITY
   - Modules: Collaborative Practice (Level 2.1) Theories of Architecture (Level 3.2)

6. CLEAN WATER AND SANITATION
   - Modules: Building Physics & Services (Level 1) Technical Studio 1 (Level 2) Energy Transformations (Level 2) Studio 2 (Level 2) Strategic Design & Energy Simulations (Level 3.1) Energy Management & Performance Evaluation (Level 3.2)

7. AFFORDABLE AND CLEAN ENERGY
   - Modules: Building Physics & Services (Level 1) Technical Studio 1 (Level 1) Strategic Design & Energy Simulations (Level 3.1) Energy Management & Performance Evaluation (Level 3.2)

8. DECENT WORK AND ECONOMIC GROWTH
   - Modules: Collaborative Practice (Level 3.1)

9. INDUSTRY, INNOVATION AND INFRASTRUCTURE
   - Modules: Strategic Design & Energy Simulations (Level 3.1) Energy Management & Performance Evaluation (Level 3.2) Studio 2 (Level 2)

10. REDUCED INEQUALITIES
    - Modules: Building Physics & Services (Level 1) Engineering Buildings for Use (Level 3.1)

11. SUSTAINABLE CITIES AND COMMUNITIES
    - Modules: Building Physics & Services (Level 1) Strategic Design & Energy Simulations (Level 3.1) Design & Engineering Studio 3 (Level 3.1) Design & Engineering Studio 4 (Level 3.2)

12. RESPONSIBLE CONSUMPTION AND PRODUCTION
    - Modules: Building Physics & Services (Level 1) Strategic Design & Energy Simulations (Level 3.1) Design & Engineering Studio 3 (Level 3.1)

13. CLIMATE ACTION
    - Modules: Building Physics & Services (Level 1) Technical Studio 1 (Level 1) Strategic Design & Energy Simulations (Level 3.1) Design & Engineering Studio 3 (Level 3.1)

14. LIFE BELOW WATER
    - Connections still under consideration

15. LIFE ON LAND
    - Connections still under consideration

16. PEACE AND JUSTICE STRONG INSTITUTIONS
    - Connections still under consideration

17. PARTNERSHIPS FOR THE GOALS
    - Modules: Live Project (extra curricula)
Construction

Which issues represented in the SDG targets are included in Quantity Surveying and Construction Property Management programmes?

Which modules are most focused on issues of relevance?
Public health

In what ways does the Public Health programme at UWE Bristol connect to the ambitions of the UN SDGs?
Sustainable Development Goals and Public Health (MSc)

The Public Health programme is designed from an ecological/health promotion approach. Many issues related to the Sustainable Development Goals (SDGs) are introduced and explored at multiple points in this programme as described below.

1. **No Poverty**
   - Course considers the global burden of disease with research being used to highlight inequities in health outcomes. Distribution of causes of death and mortality to date are also explored.

2. **Zero Hunger**
   - The importance of nutrition and diet. Focus on food and nutrition.

3. **Good Health and Well-being**
   - Health and well-being are the basis of the Human Rights Act 2000. Focus on social justice, capacity building and working with communities, all components of the SDGs.

4. **Quality Education**
   - The importance of reducing health inequalities in early education is discussed in this programme. There is also discussion of how food insecure groups might be targeted through education.

5. **Gender Equality**
   - Inequalities of all kinds are explored in the programme, including in relation to gender. This topic is also frequently chosen by students as a focus for their dissertations.

6. **Clean Water and Sanitation**
   - A module on health protection includes specific reference to the importance of clean water in relation to communicable diseases. Water is also heavily involved in determinants of health discussed in other modules.

7. **Affordable and Clean Energy**
   - Energy is not currently explicitly considered in this programme.

8. **Decent Work and Economic Growth**
   - Issues related to socio-economic health inequalities are discussed in this programme, including links between levels of economic development and health. In particular, the relationship between poverty levels and health.

9. **Industry, Innovation and Infrastructure**
   - Issues related to industrial work and health inequalities are discussed in this programme, including links between levels of economic development and health. In particular, the relationship between poverty levels and health.

10. **Reduced Inequalities**
    - The theme of inequality is explored in modules including Introduction to Public Health, Health Protection, Water and Sanitation Policy and Politics, among others.

11. **Sustainable Cities and Communities**
    - Consideration is made of differences in health outcomes between urban and rural areas. Interdisciplinary teaching activities are focused between the health outcomes of urban and rural areas and the potential role of urban planning in reducing inequalities.

12. **Responsible Consumption and Production**
    - Components of this goal are covered explicitly in the public health programme, including consideration of food issues, in relation to sustainable development. The role of individual responsibility, for example, in relation to climate change and waste, is also explored.

13. **Climate Action**
    - Climate change is referred to in this programme in the context of potential implications for the spread of communicable disease. Further measures which may be required to prevent public health in the event of increased frequency and severity of flooding events is also mentioned.

14. **Life Below Water**
    - Issues related to clean water are not currently included in this programme.

15. **Life on Land**
    - The importance of green spaces on mental health and for physical exercise is recognised and discussed within the public health programme.

16. **Peace and Justice Strong Institutions**
    - Issues of migration are referred to in this programme in the context of the importance of government policy on public health (direct and indirect). The UK Public Health Outcomes Framework, 2015-2020 is a key document and this role of the World Health Organisation is explored. As such, components of SDG 16 are considered in this programme.

17. **Partnerships for the Goals**
    - The role of the World Health Organisation in promoting and facilitating improvements in public health is explored. Individual activities are focused between the health outcomes of urban and rural areas and the potential role of urban planning in reducing inequalities.
Which of the issues represented in the SDG targets are included in the IT Management for Business programme?

Which modules are most focused on issues of relevance?
BSc(Hons) Information Technology Management for Business (ITMB)

Issues of relevance
Place in the ITMB Programme

1. NO POVERTY
   - IT enabling access to resources e.g. financial services, land registries and supporting resilience.
   - Modules: Induction Sustainable Technology team project, UCPA63-02 Business, UCPA63-02 The Information Practitioner 3 and 6 other modules.

2. ZERO HUNGER
   - Role of logistics systems in food distribution. Productivity improvement through Smart agriculture.
   - Modules: Induction Sustainable Technology team project, UCPA63-02 Business, UCPA63-02 The Information Practitioner 3 and 6 other modules.

3. GOOD HEALTH AND WELL-BEING
   - Use of telehealth to widen healthcare coverage and App-supported healthier lifestyle change.
   - Modules: UCPA63-02 eBusiness, UCPA63-02 The Information Practitioner 3, UCPA63-02 Strategic Management and 7 other modules.

4. QUALITY EDUCATION
   - ITMB students have extensive learning in Entrepreneurship. Importance of lifelong learning in Information systems. Changing nature of skills. Broadening access to education through online learning.
   - Modules: UCPA63-02 Business Innovation and Growth, UCPA63-02 eBusiness, UCPA63-02 The Information Practitioner 3 and 10 other modules.

5. GENDER EQUALITY
   - Learning about leadership, gender and diversity. Role of IT in enabling work opportunities which improve gender equality e.g. working from home.
   - Modules: UCPA63-02 eBusiness, UCPA63-02 The Information Practitioner 3, UCPA63-02 Strategic Management and 3 other modules.

6. CLEAN WATER AND SANITATION
   - Modules: Induction Sustainable Technology team project, UCPA63-02 Business, UCPA63-02 The Information Practitioner 3 and 6 other modules.

7. AFFORDABLE AND CLEAN ENERGY
   - Carbon footprint arising from IT use of electricity (about 4% of global CO2 emissions). Importance of decarbonization IT. Smart Grid.
   - Modules: Induction Sustainable Technology team project, UCPA63-02 Business, UCPA63-02 The Information Practitioner 3 and 6 other modules.

8. DECENT WORK AND ECONOMIC GROWTH
   - Impact of technology on work. Role of entrepreneurship in creating work and growth.
   - Modules: UCPA63-02 Business Innovation and Growth, UCPA63-02 eBusiness, UCPA63-02 The Information Practitioner 3 and 15 other modules.

9. INDUSTRY, INNOVATION AND INFRASTRUCTURE
   - DIY and smart homes. Key issues raised by ICTs that give rise to ethical concerns. Impact of disruptive technologies on wealth distribution. Perspectives. Role of inclusive growth and equity.
   - Modules: UCPA63-02 Business Innovation and Growth, UCPA63-02 eBusiness, UCPA63-02 The Information Practitioner 3 and 15 other modules.

10. REDUCED INEQUALITIES
    - Key issues raised by ICTs that give rise to ethical concerns. Impact of disruptive technologies on wealth distribution. Perspectives. Role of inclusive growth and equity.
    - Modules: UCPA63-02 Business Innovation and Growth, UCPA63-02 eBusiness, UCPA63-02 The Information Practitioner 3 and 15 other modules.

11. SUSTAINABLE CITIES AND COMMUNITIES
    - Smart City systems. IT management of city traffic. Role of IT in supporting citizen engagement in urban planning.
    - Modules: Induction Sustainable Technology team project, UCPA63-02 Business, UCPA63-02 The Information Practitioner 3 and 6 other modules.

12. RESPONSIBLE CONSUMPTION AND PRODUCTION
    - Role of IT in supply chains. Case studies on areas of IT driven innovation. Food waste reduction. IT in business sustainability reporting.
    - Modules: Induction Sustainable Technology team project, UCPA63-02 Business, UCPA63-02 The Information Practitioner 3 and 6 other modules.

13. CLIMATE ACTION
    - Key role of IT in carbon reduction (required for 20% of GHG reductions by 2030). Reducing the carbon footprint arising from IT use of electricity (about 3% of global GHG emissions).
    - Modules: Induction Sustainable Technology team project, UCPA63-02 Business, UCPA63-02 The Information Practitioner 3 and 7 other modules.

14. LIFE BELOW WATER
    - Responsible management of water to reduce water pollution. Use of remote sensing for Wastewater management / protection.
    - Modules: Induction Sustainable Technology team project, UCPA63-02 Business, UCPA63-02 The Information Practitioner 3 and 6 other modules.

15. LIFE ON LAND
    - IT in sharing benefits of genetic resources. Remote sensing for conservation.
    - Modules: Induction Sustainable Technology team project, UCPA63-02 Business, UCPA63-02 The Information Practitioner 3 and 6 other modules.

16. PEACE AND JUSTICE STRONG INSTITUTIONS
    - Modules: UCPA63-02 Information Networks and Society, UCPA63-02 Ethical and Professional Issues in Computing and Digital Media and 12 other modules.

17. PARTNERSHIPS FOR THE GOALS
    - Ability to adapt to different academic and cultural settings. Technology sharing and cooperation. Role of the Technology Bank.
    - Modules: UCPA63-02 International Experience, UCPA63-02 eBusiness, UCPA63-02 The Information Practitioner 3 and 8 other modules.
Session overview

• Why is sustainability in the HE curriculum important?

• What are we trying to do and how are we going about it?

• How can we support academics in this process?

• What has the impact been?

Key lessons: Flexibility, support and persistence
Evidence of progress

• What are we asking?
• What are we measuring?
• What are we looking for?
• **What are others looking for?**

Explicit engagement with/awareness of SDGs
Outcomes of SDGs mapping

21 programmes/discipline areas already engaged

120 staff contributing information

10 discipline maps produced to date

Too many new ideas and projects to count!
Outcomes (esp. of SDGs mapping)

• Exciting times!
• Enthusiastic staff
• Curriculum development
• Distributed responsibility
• New ambitions related to outcomes
New ambitions

- Skills, experiences and PBL
- Graduate attributes
- Explicit in documentation
- Student knowledge and attitudes
- Alignment across institution
- Measuring impact?
ANY QUESTIONS?

Please see also our SDG map display

Thank you!